

REPORT

ASSESSING AND MODELLING THE IMPACTS OF GOVERNANCE OPTIONS FOR EMISSION TRADING SYSTEM IN VIET NAM

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Prepared by:

GREEN CLIMATE INNOVATION COMPANY LIMITED

ENERGY AND ENVIRONMENT CONSULTANCY JOINT STOCK COMPANY

SOUTH POLE CARBON ASSET MANAGEMENT



**DEVELOPMENT AND IMPACT ASSESSMENT OF CARBON CREDIT
AND ALLOWANCE GOVERNANCE MECHANISM IN VIET NAM**

REPORT

**ASSESSING AND MODELLING THE IMPACT OF
GOVERNANCE OPTIONS FOR EMISSION TRADING SYSTEM
IN VIET NAM**

A report on assessing and modelling the impacts of ETS governance options in Viet Nam, and the specific impacts of different governance options, on socio-economic and environmental aspects in order to provide the data-driven analysis and quantitative insights for determining the governance scheme for the ETS in Viet Nam

COLOPHON AND DISCLAIMER

Beneficiary

Department of Climate Change (DCC), Ministry of Agriculture and Environment (MAE), Viet Nam
10 Ton That Thuyet, Nam Tu Liem, Ha Noi, Viet Nam | +8424 3775 9430 | info@dcc.gov.vn

Key Experts

Loan Nguyen Hong, Green Climate Innovation Company Limited: Team Leader and Climate Policy Expert
Hoa Ho Cong, Academy of Policy and Development: Impact Assessment Expert
Lam Do Van, Institute of Economic and Financial Policy and Strategy: Data Modelling Expert
Ha Hoang Thi Minh, Center Institute for Economic and Management: Data Modelling Expert

Contributors

Green Climate Innovation Company Limited: Nguyen Le Khanh Linh, Hoang Thuy An, Doan Mai Huong
Energy and Environment Consultancy Joint Stock Company: Tran Ngoc Binh, Nguyen Thi Hong Anh
Robert Ritz, Energy Policy Research Group, University of Cambridge: International Data Modelling Expert

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EXECUTIVE SUMMARY

The Emission Trading System (ETS) is a critical and cost-efficient policy instrument for countries to achieve their greenhouse gas (GHG) reduction targets and fulfil international commitments such as the Nationally Determined Contribution (NDC) and Just Energy Transition Partnership (JETP). Besides climate change benefits, ETS can also have broad socio-economic and environmental implications for businesses, industries, and the overall economy, which requires careful consideration before commencing the operation of the system.

According to the 2020 Law on Environmental Protection and its associated regulations, Viet Nam plans to pilot the ETS in 2025, with full implementation scheduled for 2029. While certain design and governance aspects of the ETS have been considered under the draft amended Decree No. 06/2022/ND-CP on GHG emission reductions and ozone layer protection, a comprehensive assessment of the impacts of different ETS governance options has not yet been conducted.

This study is part of the Technical Assistance “Development and Impacts Assessment of Carbon Credit and Allowance Governance Mechanisms in Viet Nam”, implemented by the Southeast Asia Energy Transition Partnership (ETP) to support the Department of Climate Change (DCC), Ministry of Agriculture and Environment (MAE) on carbon market development in Viet Nam. The main objective of the study is to assess and model the socio-economic and environmental impacts of various ETS governance options in Viet Nam in order to provide evidence-based insights and enhance the capacity of policymakers to develop the legal framework to operationalise the carbon market in Viet Nam.

This report evaluates ETS governance options using econometric models, focusing on the socio-economic impacts in the pilot implementation period. The study applies a three-level approach: enterprise, industry, and macroeconomy. At the enterprise level, the report assesses the GHG emissions of facilities covered under Decision 13/2024/QĐ-TTg with a focus on thermal power, steel, and cement production facilities. At the industry level, the study calculates investment costs to meet the NDC emission reduction targets under the scenarios without the ETS and analyses sectoral impacts with the ETS interventions. The various NDC scenarios covered in the assessment include those that aligned with Viet Nam’s unconditional, conditional commitments, and the conditional NDC target with JETP. At the macroeconomic level, the econometric model evaluates the impact of ETS on key macroeconomic indicators such as GDP, investment, consumption, and consumer prices. The findings from the assessment across the three levels offer insights into the effects on enterprises, sectors targeted for the ETS pilot, and the broader economy, ultimately providing feasible policy recommendations.

The study highlights the vital role of the ETS in enabling Viet Nam to achieve its emission reduction targets cost-effectively, while facilitating the transition to a sustainable economic model. The analysis focuses on three key industries: thermal power, steel, and cement. The Consultant developed nine policy scenarios to evaluate both economic and environmental impacts, laying a solid foundation for proposing an effective governance framework.

The study results show that during the pilot phase, the carbon price fluctuates from 1.1 to 3.7 USD/tCO₂, achieving the most optimal cost when supply and demand approach equilibrium. The

carbon credit price tends to decrease as supply increases. Expanding the offset limit to 20% may further lower the carbon price, and it would be the lowest price under the unconditional NDC scenario since there is a big gap between demand and supply. On the other hand, the ETS significantly reduces compliance costs for businesses, especially in conditional scenarios. Under the unconditional NDC scenario, compliance costs decrease from 420 million USD to 164.2 million USD with the implementation of the ETS, while in the conditional NDC scenario, costs drop from 1.297 billion USD to 927.6 million USD.

By industry, thermal power benefits the most from the ETS, experiencing a significant reduction in compliance costs. The cement industry can enhance profitability by selling surplus allowances resulting from the implementation of NDC emission reduction measures, while the steel industry is less affected, though it shows variability across different scenarios. ETS further enables businesses to optimise compliance costs and generate additional revenue from allowance transactions, with thermal power emerging as the main buyer and cement as the primary supplier of allowances on the market. At the macroeconomic level, ETS helps mitigate the negative impacts of emission reduction policies on GDP, limiting growth declines through measures such as expanding the offset limit and leveraging international support mechanisms such as JETP.

In addition to reducing emissions, ETS acts as a driving force for economic restructuring. By incentivising businesses to adopt GHG reduction measures, the system pressures high-emission industries to transition to cleaner technologies, while simultaneously creating strong growth opportunities in renewable energy and electrified transport sectors. Meanwhile, a portion of financial resources is reallocated from high-emission sectors to areas that generate carbon credits and to sectors capable of producing carbon allowances, such as the cement industry in this case. Thus, the ETS lays a critical foundation for the green transition in Viet Nam's economy.

Finally, the choice of an NDC-based governance option has direct impacts on both emission reduction costs and broader economic effects. Without the application of ETS, the achievement of the emission reduction target would be more expensive in all scenarios. While the 10% carbon credit offset (ETS10) helps reduce costs, the 20% offset (ETS20) provides the optimal result, minimising impacts on GDP and enhancing market liquidity and flexibility. Ultimately, ETS not only helps Viet Nam reduce emissions at the lowest cost but also promotes green growth, enhances business competitiveness, and ensures sustainable long-term development.

The study recommends the implementation of the ETS in Viet Nam to allow flexibility in achieving NDC emission reduction targets, while optimising costs and minimising negative impacts on the economy and society. Among the evaluated options, ETS20 in the unconditional NDC scenario is the most favourable, due to its low compliance costs, minimal impacts on GDP, consumption, and prices, and the potential for generating revenue from the carbon market. Notably, ETS20 stands out for its potential to increase revenue without substantially heightening macroeconomic risks.

In both NDC conditional and NDC conditional-with-JETP scenarios, ETS20 continues to demonstrate its superiority, yielding the highest market revenue and facilitating the mobilisation of financial resources for NDC implementation. Furthermore, it enhances connectivity with other sectors in the domestic carbon market and with the global carbon market through the potential

use of carbon credits for offsets. In contrast, non-ETS scenarios, while simple to operate, come with high compliance costs, significant macroeconomic impacts, and a lack of market incentives.

In conclusion, a flexible ETS with offset limits of 10–20% (ETS10 – ETS20) emerges as the most viable option for the initial phase of the carbon market in Viet Nam. Among these, ETS20 within the unconditional NDC scenario represents the most feasible and effective pilot option, laying a robust foundation for the expansion of the market and enhancement of Viet Nam’s climate commitments in the future.