
CARBON CREDIT MARKET

 info@giantbarb.com

 +84 995 206 666

 www.giantbarb.com



I. THE NATURE OF THE CARBON MARKET

The **carbon credit market** is a commodity market established to conduct transactions of buying and selling goods, which are carbon emission permits (emission quotas, carbon credits).

The nature of the market is that **emissions permits can be traded**.

Emission permits are licenses issued by the state, allowing businesses to discharge a certain amount of a type of waste into the environment. Emission permits are tradeable, bought and sold depending on the needs and emission reduction capabilities of businesses.

Trading occurs when:

- There are businesses that have excess licenses and businesses that lack licenses.
- There are differences in the costs of reducing emissions between businesses.



Operational mechanism:

- The government establishes **a target emissions ceiling (Cap)** for one or more economic sectors.
- The government issues a quantity of **tradable allowances** corresponding to the emissions cap.
- Enterprises **buy and sell, auction** to get the desired emission quota.
- Enterprises can also compensate for the quota shortage with carbon credits: domestic offset credits (from non-Cap areas), international offset mechanisms, or other ETS.
- The price of each carbon emission unit is determined by the supply and demand dynamics within the carbon market.

II. GREENHOUSE GAS INVENTORY IN VIETNAM

GHG Inventory: GHG inventory is the activity of collecting information and data on GHG emission sources, calculating GHG emissions, and GHG absorption within a defined scope and in a specific year according to methods and procedures issued by competent authorities (*Decree 06/2022*).

Forecast of Vietnam's greenhouse gas emissions to 2030

- The main GHG emission sector from now until 2030 is energy sector (accounting for **60-70%** of total GHG emissions).
- The Industrial Processes and Product Use (IPPU) sector will rise to **second place** from 2025.
- Since 2005, **Land Use, Land-Use Change, and Forestry (LULUCF)** has become a net GHG absorption sector (GHG emissions are less than GHG absorption).

Decision No. 01/2022/QD-TTg promulgating the list of large emission facilities required to conduct GHG inventories

Sectors subject to greenhouse gas inventory	Facilities subject to greenhouse gas inventory
Energy	Facilities with annual emissions $\geq 3,000$ tons of CO ₂ equivalent
Transportation	Thermal power plants, industrial production facilities with total annual energy consumption $\geq 1,000$ tons of oil equivalent (TOE)
Construction	Freight transport companies with total annual fuel consumption $\geq 1,000$ TOE
Industrial processes	Commercial buildings with total annual energy consumption $\geq 1,000$ TOE
Agriculture, forestry, and land use	Solid waste treatment facilities with an annual operating capacity $\geq 65,000$ tons
Waste	

II. GREENHOUSE GAS INVENTORY IN VIETNAM

Timeline for implementing GHG emission reporting requirements under Decree 06/2022/ND-CP



Vietnam's policy commitments to Greenhouse Gas emission reduction

- National Climate Change Strategy to 2050.
- National Electricity Development Plan for the period 2021-2030, with a vision to 2045: Prioritize the development of renewable energy, gradually reducing dependence on coal.
- National program on economical and efficient use of energy for the period 2019-2030: Enhance economical and efficient energy use in economic sectors.
- Strategy for the development of transport to 2030, with a vision to 2045: Develop public transport, encourage the use of environmentally friendly transport.
- National program on reforestation for the period 2021-2030: Protect and develop forests, enhance greenhouse gas absorption.

Policies related to the carbon market

- Prime Minister's Decision No. 1775/QĐ-TTg dated November 26, 2015, approving the Project on greenhouse gas emission management.
- Law on Environmental Protection 2020.
- Project on carbon market development for the period 2021-2030, with a vision to 2045.
- Government's Decree No. 06/2022/ND-CP on regulations on greenhouse gas emission reduction and ozone layer protection.

III. CARBON CREDIT MARKET

Comparing Voluntary and Mandatory markets

	VOLUNTARY MARKET	MANDATORY MARKET
Definition	Domestic organizations and individuals voluntarily participate in offsetting their emissions or purchasing credits to support GHG emission reduction/removal projects.	Sectors or organizations in certain areas must comply with government emission regulations or are required to participate in the domestic mandatory carbon market.
Market mechanism	Free market driven by spontaneous emission reduction targets.	Emissions Trading System (ETS)
Standards and regulations framework	Compliance with recognized standards and guidelines on the conditions, verification procedures, registration, issuance, trading and use of carbon credits. No mandatory regulations but rules or codes of practice may apply.	Standards and methods approved by local, national or regional authorities. There are legal requirements/regulations and penalties for non-compliance.
Trading unit	Carbon credits.	Carbon quotas, carbon credits.

Two main types of Carbon assets

Carbon credits	Allowances
Issued to carbon project developers (carbon credit owners) according to independent carbon standards or the government agency of a carbon credit mechanism.	Issued to regulated entities by the governing body of a mandatory carbon pricing instrument
Represents the reduction, removal, or avoidance of 1 tCO ₂ e of GHG emissions through the implementation of activities of a carbon project.	Represents the right to emit 1 tCO ₂ e under a mandatory carbon pricing instrument.
Primarily traded on the voluntary carbon market (VCM), but some mandatory carbon pricing systems allow the surrender of carbon credits for compliance.	Only traded on the mandatory carbon market between allowed entities.

III. CARBON CREDIT MARKET

Who certifies Carbon Credits

Independent Carbon Standards	International Credit Mechanisms	National and Local Credit Mechanisms
<p>Independent carbon standards (Gold Standard, Verra, and their related labels) issue carbon credits primarily used for voluntary purposes (e.g., corporate carbon neutrality claims). These standards currently issue the majority of credits in the market.</p> <p>However, some independent carbon credits are beginning to be accepted by compliance instruments, blurring the lines between the voluntary and mandatory carbon markets.</p>	<p>International credit mechanisms are governed by the UNFCCC, formerly under the Kyoto Protocol (CDM) and now under the Paris Agreement (Article 6.4 mechanism).</p> <p>Although these mechanisms were created as a tool to help countries meet their commitments under international treaties (i.e., compliance), some credits have also been used for voluntary purposes.</p>	<p>These mechanisms are often an integral part of regional, national, and local carbon pricing instruments that allow the use of carbon credits for compliance.</p> <p>Most of these credit mechanisms have been established in North America and East Asia and are often focused entirely domestically in terms of project location and buyers. These credits are used under domestic voluntary or mandatory programs.</p>

Major standards certification bodies

Tiêu chuẩn độc lập quốc tế





Tiêu chuẩn khu vực và quốc gia









Tiêu chuẩn độc lập dành riêng cho công nghệ







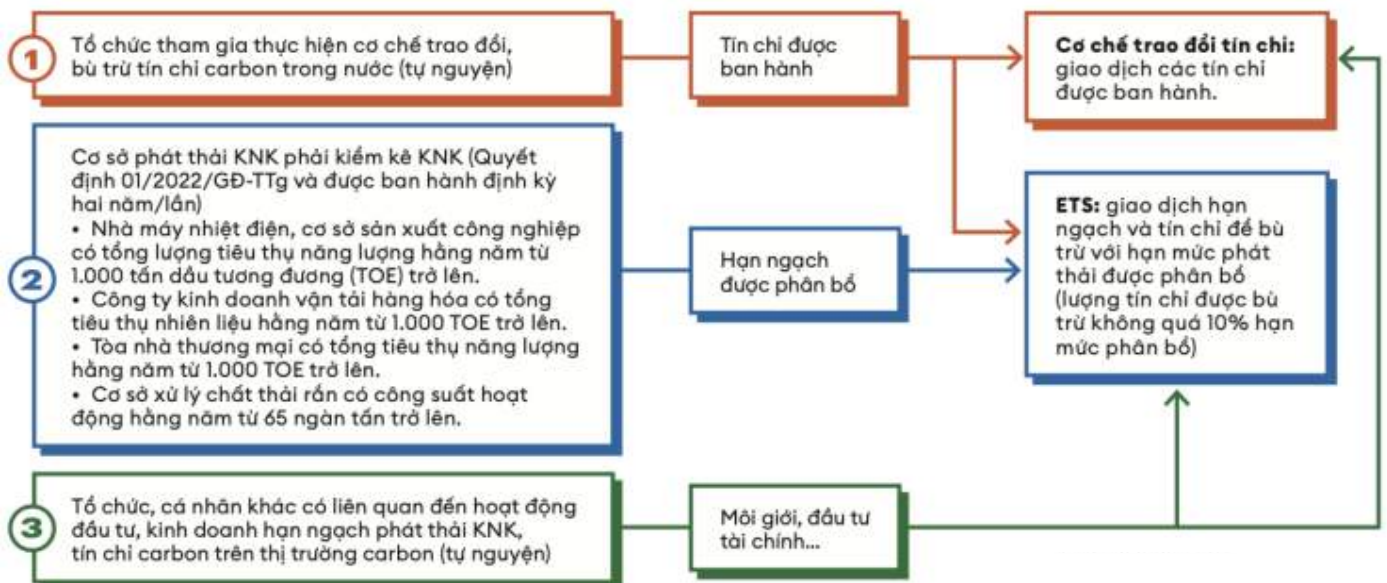
III. CARBON CREDIT MARKET

Demand for Carbon Credits in the Global mandatory Carbon market

National/ Local Systems and Targets Carbon Pricing Programs	International Sector Target CORSIA (ICAO)	International Market-Based Mechanisms Article 6 of the Paris Agreement
<p>The use of carbon credits in domestic carbon pricing programs contributes to domestic GHG emission reduction targets.</p> <p>Nearly 50% of existing ETS worldwide and some carbon tax programs allow the use of carbon credits to meet their obligations in mandatory markets.</p> <p>Currently, most programs are designed to have limits on the quantity of carbon credit usage and require credits to come from local projects.</p>	<p>CORSIA promotes carbon-neutral growth from the international aviation sector from 2021 and allows the use of carbon credits for compliance purposes.</p> <p>Using a baseline emissions pathway of 85% of total CO2 emissions covered by CORSIA in 2019, ICAO estimates CORSIA offset requirements could range from 600 million to 2.1 billion tCO2e from 2024 until the program's end in 2035.</p>	<p>Countries such as Switzerland, Sweden, South Korea, Singapore, and Japan have expressed interest in purchasing carbon credits from now until 2030 to achieve or exceed their first NDC targets.</p> <p>Overall, national demand for carbon credits could range from 150 to 310 MtCO2e to achieve their NDCs by 2030.</p>

Three main groups of participants in Vietnam's domestic carbon market

According to Decree 06/2022/ND-CP



III. CARBON CREDIT MARKET

Roadmap for carbon market development in Vietnam

2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	...
Giai đoạn chuẩn bị: <ul style="list-style-type: none"> - Xây dựng quy định quản lý tín chỉ các-bon, hoạt động trao đổi hạn ngạch phát thải khí nhà kính và tín chỉ các-bon; xây dựng quy chế vận hành sàn giao dịch tín chỉ các-bon; - Hướng dẫn MRV; - Thành lập sàn giao dịch tín chỉ các-bon; - Xây dựng hệ thống kiểm kê KNK quốc gia; - Triển khai thí điểm cơ chế trao đổi, bù trừ tín chỉ các bon trong các lĩnh vực tiềm năng và hướng dẫn thực hiện cơ chế trao đổi, bù trừ tín chỉ các-bon trong nước và quốc tế; - Xây dựng tài liệu tuyên truyền, thực hiện các hoạt động tăng cường năng lực cho các đối tượng tham gia thị trường các-bon. 										
				Giai đoạn thí điểm: <ul style="list-style-type: none"> - Thành lập và tổ chức vận hành thí điểm sàn giao dịch tín chỉ các-bon kể từ năm 2025 						
							2028	2029	2030	...
							Giai đoạn vận hành: <ul style="list-style-type: none"> - Tổ chức vận hành sàn giao dịch tín chỉ các-bon chính thức trong năm 2028. 			

Potential sectors for Carbon Credit project implementation

Energy

- The sector with the largest emissions.
- Largest number of carbon credit projects, both on Verra and Gold Standard platforms (accounting for nearly 90%).
- Hydropower is the sub-sector contributing the most carbon credit projects, followed by wind and solar power.

Agriculture

- Currently the second largest GHG emitter
- In addition to its potential, the industry has a huge social impact, affecting food security and farmers' livelihoods.

Land Use, Land-Use Change, and Forestry (LULUCF)

- Many successful development projects have already been implemented.
- Methodologies are quite comprehensive, and information is easily accessible.

Industrial Processes & Product Use (IPPU)

- Soon to be the second largest emitter.
- Direct pressure from the Carbon Border Adjustment Mechanism (CBAM), especially for the iron and steel industry, a major export sector of Vietnam.

IV. WHAT DO ENTERPRISES NEED TO PREPARE TO PARTICIPATE IN THE CARBON MARKET?

From 2024 - Preparation and Reporting of GHG Inventory

1. Comprehensive investigation of GHG emission processes and activities

- a. Identify all inputs and outputs: fuels, raw materials, products, emission streams.
- b. Refer to PFDs, P&IDs, DCS, as well as other information systems and documents to conduct an inventory of processing units and equipment, as well as production/industrial processes.
- c. Ensure no errors or duplication (double counting) of emission streams.
- d. Refer to international monitoring guidelines and sector principles to understand emission measurement methods.

2. Identify methods for measuring activity data and conversion factors, such as using default emission factors

- a. Collect a master list of all field measurement devices, calibration and maintenance schedules.
- b. Identify critical meters used for current operations (e.g., production performance).
- c. Identify external data sources, e.g., invoices from suppliers.

3. Identify appropriate measurement methods and means to calculate emissions for your facility

Determine if meter calibration and maintenance schedules are adequate.

4. Calculate and aggregate emissions for compiling the inventory report

- a. Develop data processing templates and embedded calculation formulas.
- b. Define access and authorization controls.
- c. Develop SOPs/checklists and conduct training on how to use templates and data processing steps.

5. Develop a data management/record keeping process to prepare for future audits

6. Basic Quality Assurance and Quality Control (QA/QC) procedures for the inventory

IV. WHAT DO ENTERPRISES NEED TO PREPARE TO PARTICIPATE IN THE CARBON MARKET?

From 2025 - ETS Market Operations (Pilot Phase)

1. Establish an internal carbon pricing strategy to guide the company's long-term investment and decarbonization strategy development, continuously monitor industry and policy developments.
2. Manage ETS allowances, including tracking current ETS market prices and market analysis.
3. Plan for the use of carbon credits (offsets).
4. Account registration activities.
5. Mandatory third-party verification of the greenhouse gas emission report.



From 2026 - GHG emission reduction plan for the period 2026-2030

1. Identify emission reduction opportunities, analyze the cost-benefit of mitigation measures.

- a. Develop technical plans for a range of potential emission reduction measures (e.g., fuel switching, process upgrades, equipment upgrades, on-site fuel use, plant optimization upgrades, CO₂ capture and utilization).
- b. Conduct techno-economic analysis of mitigation measures.

2. Implement and monitor emission reduction measures.

Plan implementation of mitigation measures based on understanding of future ETS policy (prices) and government plans for the industry.

V. MONITORING THE CARBON MARKET

Unlike other physical commodities, emission units are immaterial, instantly transferable in large quantities, and dependent on human-controlled supply.

- Market monitoring aims to ensure that markets are:
- Efficient, transparent, and fair
- Liquid and accessible
- Offer carbon prices that reflect the underlying dynamics of supply and demand (price discovery)
- Protected from market fraud and abuse

Aspects of carbon market monitoring

Includes design choices regarding:

- Entities eligible to participate in the market
- Authorities responsible for market surveillance
- Types of products/commodities that can be traded on the market
- Where transactions take place; and
- Other regulations affecting the market's safety, volatility, and vulnerability to fraud..

Primary market surveillance (Auctions)

Risks	Solutions
Successful bidders violate their bidding commitments	Regulations on participating in auctions, regulations on collateral mortgage/deposit, clearing on the exchange.
Bid rigging	Auction reserve prices Market monitoring and reporting
Inconsistent information	Information disclosure to stakeholders and the public
Abuse of market power – price manipulation, market distortion	Market monitoring, disclosure of rules Position limits Licensing requirements, access rules
Insider trading, money laundering, fraud	KYC checks, technology safeguards in the registry Market and trading monitoring Financial criminal law

V. MONITORING THE CARBON MARKET

Secondary market monitoring

Risks	Solutions
Buyer or seller breaches	Regulations on access to exchanges, clearing and settlement systems to reduce counterparty risk
Inconsistent information	Disclosure to stakeholders and the public
Abuse of market power –price manipulation, market distortion	Market surveillance, disclosure of rulesLimiting of authority and positionsLicensing requirements, access rules
Insider trading, money laundering, fraud, cybercrime	Mandatory use of trading platforms and increased licensing/transparency requirements for risky activities.Know your customer (KYC) checks, and technological safeguards in the registration authority, waiting period before transferring units.Market and transaction surveillance, prompt intervention Financial criminal law.
Risks	Solutions



“REACH OUT TO US TODAY, AND TOGETHER, LET'S SHAPE A BETTER TOMORROW”

*Together, we can make a difference that transcends boundaries
and leaves a positive legacy for generations to come.*

Giant Barb is a pioneer in the field of **Carbon Finance in Vietnam**, offering comprehensive services such as **Greenhouse Gas Inventory**, **ESG Reporting**, and **Carbon Credit Market** solutions to both domestic and international enterprises.

With the motto "***Towards a low carbon society***", Giant Barb connects individuals, investors, businesses, and governments together to build green projects aimed at carbon neutrality, contributing to global efforts in combating climate change.

2025

Find out more here:
www.giantbarb.com