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VCM GLOBAL DEVELOPMENT AND PRACTICAL APPLICATION FOR KAZAKHSTAN

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List of abbreviations

AFOLU - Agriculture, forestry and other land use

ARR - Afforestation, Reforestation, and Revegetation

CCB – Climate, Community & Biodiversity

CCPs - Core Carbon Principles

CORSIA - Carbon Offsetting and Reduction Scheme for International Aviation

ESG - Environmental, Social, Governance

ETS - Emissions Trading System

GHGs - Greenhouse gases

ICROA - International Carbon Reduction and Offset Alliance

ICVCM - Integrity Council for the Voluntary Carbon Market

IFM - Improved Forest Management

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

PACM - Paris Agreement Crediting Mechanism

REDD - Reducing Emissions from Deforestation and Forest Degradation

SD VISta - Sustainable Development Verified Impact Standard

SDGs - Sustainable Development Goals

tCO2-eq - Tonnes of Carbon Dioxide Equivalent

UNFCCC - United Nations Framework Convention on Climate Change

VCM - Voluntary Carbon Market

VCMI - Voluntary Carbon Markets Integrity Initiative

VVBs - Validation and Verification Bodies

Contents

Resume

In recent years, the Voluntary Carbon Market (VCM) has undergone rapid growth and transformation, driven by evolving standards, methodologies, and governance frameworks designed to improve transparency, integrity, and environmental impact. This report aims to raise awareness of the key aspects the VCM, while exploring its global development and practical application within Kazakhstan.

The report starts with an introductory section containing the essential background information, including a definition of the VCM and an overview of the various types of carbon projects it encompasses. The first section examines the role of leading global organisations—such as the Integrity Council for the Voluntary Carbon Market (ICVCM), the Voluntary Carbon Markets Integrity Initiative (VCMI), and the International Carbon Reduction and Offset Alliance (ICROA)—with particular emphasis on their principles and codes of practice that underpin market credibility.

The second section offers a comparative overview of the world's leading carbon crediting programmes: Verra's Verified Carbon Standard (VCS) and the Gold Standard. It provides a comparison of their sectoral coverage, geographical reach, certification processes, acceptance within national carbon pricing mechanisms, and other parameters.

The third section provides an overview of the global VCM carbon pricing trends by project type, regions, and credit vintage. The role of certification labels in both compliance and voluntary markets is also evaluated.

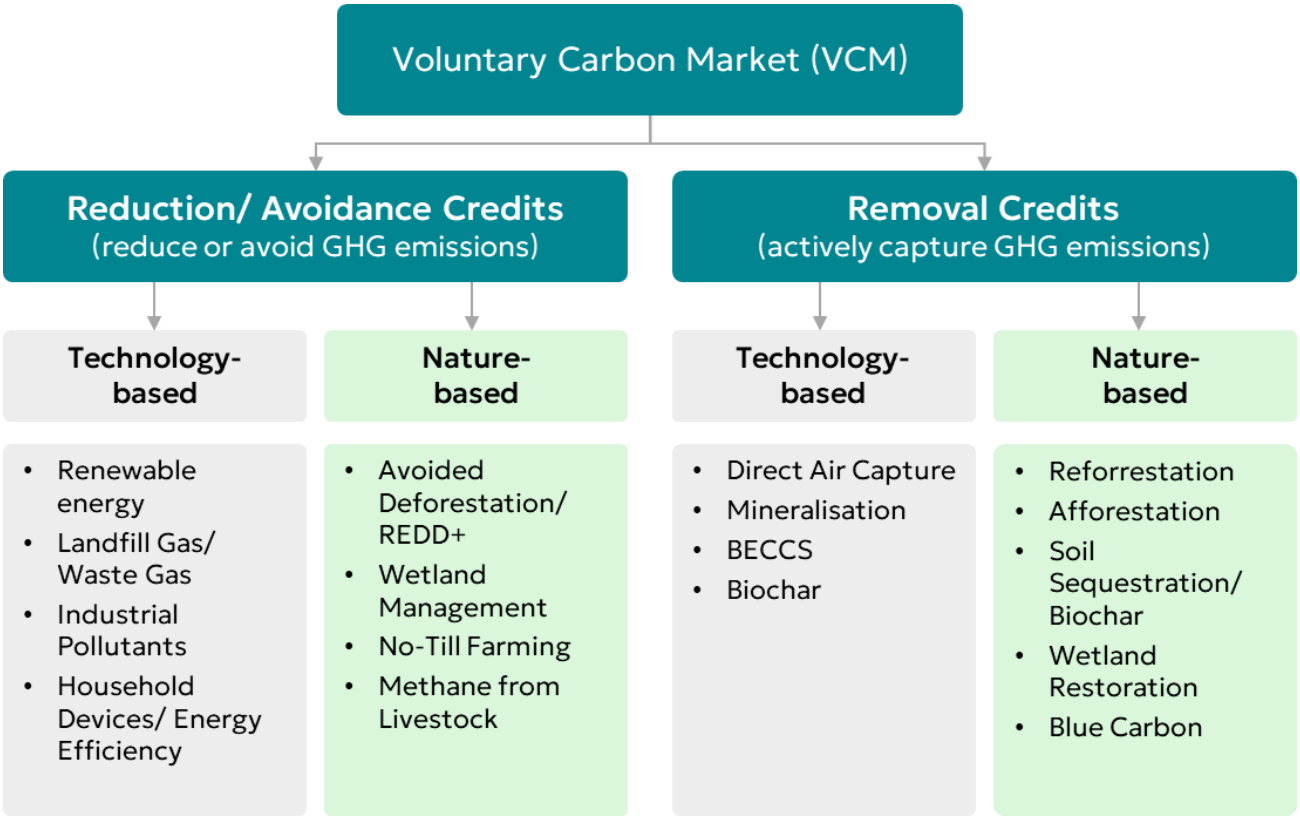
Finally, the report addresses the practical implementation of VCM in Kazakhstan, offering practical guidance for carbon project developers and market participants. It provides an overview of the key actors within the market and outlines the essential steps involved in carbon project development—from initial concept through to the issuance of carbon credits. The ultimate goal of this section, and of the report as a whole, is to support Kazakhstan's integration into the global carbon economy.

Definition and structure of VCM

The Voluntary Carbon Market is a powerful force in global climate action —unlocking private finance, driving innovation, and enabling emissions reductions beyond the reach of regulatory frameworks. Unlike compliance markets, which are shaped by national or international mandates, the VCM is decentralised and demand-driven, fuelled by corporate sustainability ambitions, reputational priorities, and growing stakeholder expectations.

At its core, the VCM enables individuals, companies, and organisations to voluntarily purchase carbon credits to offset their greenhouse gas emissions. These credits fund a wide range of verified emission reduction or removal projects — from reforestation and renewable energy to clean cooking solutions — that not only mitigate climate change but also deliver co-benefits aligned with the Sustainable Development Goals, such as improved health, biodiversity conservation, and community resilience. The structure of the VCM is presented in the Figure below. The carbon credits of VCM can be divided into two main categories based on their function: Reduction/Avoidance Credits and Removal Credits.

Figure 1. Classification of project types[1]



[1] Navigating Global Carbon Pricing. Сингапурский форум. S&P Global. 2024

Reduction/Avoidance Credits

These credits are issued for projects that reduce or avoid greenhouse gas emissions. They are further divided into:

- Technology-Based Methods:
  - **Renewable Energy:** Projects that generate clean energy from sources like wind, solar, hydro, and other. Some international VCM standards require compliance with the principle of additionality, which ensures that the project would not be viable without the financial support provided through carbon credit mechanisms.
  - **Landfill Gas/Waste Gas:** Capturing methane and other gases from waste sites to prevent atmospheric release.
  - **Industrial Pollutants:** Reducing emissions from industrial processes through improved technologies.
  - **Household Devices/Energy Efficiency:** Enhancing energy efficiency in homes through improved appliances and systems.
- Nature-Based Methods:
  - **Avoided Deforestation** - the prevention of forest clearing or its conversion to other land uses, such as agriculture or development**.**
    REDD+ (Reducing Emissions from Deforestation and Forest Degradation) – projects developed under a specific international framework aimed at protecting and sustainably managing forests in developing countries.
    REDD+ framework was developed under the United Nations Framework Convention on Climate Change to incentivise developing countries to protect and sustainably manage their forests. REDD+ stands for Reducing Emissions from Deforestation and Forest Degradation, with "+" referring to additional forest-related activities that contribute to climate protection, namely sustainable management of forests and the conservation and enhancement of forest carbon stocks.
  - **Wetland Management:** the process of conserving, restoring, and sustainably using wetland ecosystems to enhance their capacity for carbon sequestration.
  - **No-Till Farming:** Agricultural practices that reduce soil disturbance and emissions. This method keeps the soil largely untouched, in contrast to conventional methods such as tillage.
  - **Methane from Livestock:** Managing livestock practices to reduce methane output.

Removal Credits

These credits are awarded for projects that actively remove GHGs from the atmosphere. They are also divided into:

- Technology-Based Methods:

    - **Direct Air Capture: Technologies** that extract CO2 directly from the air.
    - **Mineralisation:** Converting CO2 into stable mineral forms (solid carbonate minerals) for long-term storage.
    - **BECCS (Bioenergy with Carbon Capture and Storage):** integrates biomass-based energy production with the capture and long-term storage of the resulting carbon dioxide emissions.
    - **Biochar[2]:** the process of converting biomass into biochar through the pyrolysis process, which enables the sequestration of carbon that would otherwise be released into the atmosphere as carbon dioxide.
- Nature-Based Methods:
    - **Reforestation:** Replanting trees in deforested areas to absorb CO2.
    - **Afforestation:** Establishing forests in areas not previously forested.
    - **Soil carbon sequestration, including through biochar application:** Enhancing the ability of soil to store carbon by incorporating biochar (carbon-rich material produced from biomass). When biochar is added to soil, it not only sequesters carbon but also improves soil health by enhancing water retention, nutrient availability, and microbial activity.
    - **Wetland Restoration:** Restoring degraded wetlands to improve carbon absorption.
    - **Blue carbon:** carbon captured and stored in coastal and marine ecosystems, which sequester carbon in both plant biomass and sediments.

[2] Biochar can be considered both a nature-based solution and a technology-based solution within the Voluntary Carbon Market (VCM)

THE ROLE OF GLOBAL ORGANISATIONS

1. The role of global organisations

The Voluntary Carbon Market has evolved significantly since its inception in the late 1980s[3], and today it includes a diverse set of standards that govern how carbon credits are issued, verified, and traded. To strengthen the credibility and environmental integrity of these standards and their associated methodologies, two key institutions were established: the Integrity Council for the Voluntary Carbon Market (ICVCM) and the Voluntary Carbon Markets Integrity Initiative (VCMI). These organisations play complementary and critical roles in establishing a high-integrity Voluntary Carbon Market, and in setting high-quality benchmarks, promoting transparency, and aligning the VCM with global climate goals.

ICVCM focuses on the supply side, setting rigorous global standards for high-quality carbon credits through its Core Carbon Principles (CCPs) and Assessment Framework. These standards ensure that credits represent real, verifiable climate benefits. Meanwhile, VCMI addresses the demand side, guiding companies on how to credibly use carbon credits within broader climate strategies through tools like the Claims Code of Practice.

Together, ICVCM and VCMI are building a comprehensive market integrity framework that promotes transparency, accountability, and trust across the VCM, enabling it to effectively support global climate goals and the transition to net zero.

ICVCM

ICVCM is an independent, non-profit organisation that sets and maintains global standards to ensure integrity within the voluntary carbon market. Integrity means that each carbon credit reflects a real, independently verified reduction or removal of greenhouse gases from the atmosphere, while also advancing sustainable development and conserving natural ecosystems.

Core Carbon Principles (CCPs)

ICVCM has developed a set of ten high-integrity standards to ensure that VCM carbon credits are credible, transparent, and effective in delivering real climate benefits. The ten principles are presented below:

[3] Climate Focus. https://vcmprimer.org/chapter-1-what-is-the-voluntary-carbon-market/

Table 1.1. The Core Carbon Principles[4]

Category	Principle	Description
Governance	1. Effective Governance	The carbon-crediting programme shall have effective programme governance to ensure transparency, accountability, continuous improvement and the overall quality of carbon credits.
	2. Tracking	The carbon-crediting programme shall operate or make use of a registry to uniquely identify, record and track mitigation activities and carbon credits issued to ensure credits can be identified securely and unambiguously.
	3. Transparency	The carbon-crediting programme shall provide comprehensive and transparent information on all credited mitigation activities. The information shall be publicly available in electronic format and shall be accessible to non-specialised audiences, to enable scrutiny of mitigation activities.
	4. Robust Independent Third-Party Validation and Verification	The carbon-crediting programme shall have programme-level requirements for robust independent third-party validation and verification of mitigation activities.
Emissions Impact	5. Additionality	The greenhouse gas (GHG) emission reductions or removals from the mitigation activity shall be additional, i.e., they would not have occurred in the absence of the incentive created by carbon credit revenues.
	6. Permanence	The GHG emission reductions or removals from the mitigation activity shall be permanent or, where there is a risk of reversal, there shall be measures in place to address those risks and compensate reversals.
	7. Robust Quantification	The GHG emission reductions or removals from the mitigation activity shall be robustly quantified, based on conservative approaches, completeness and scientific methods.
	8. No Double-Counting	The GHG emission reductions or removals from the mitigation activity shall not be double counted, i.e., they shall only be counted once towards achieving mitigation targets or goals. Double counting covers double issuance, double claiming, and double use.
Sustainable Impact	9. Sustainable Development Benefits and Safeguards	The carbon-crediting programme shall have clear guidance, tools and compliance procedures to ensure mitigation activities conform with or go beyond widely established industry best practices on social and environmental safeguards while delivering positive sustainable development impacts.
	10. Contribution Toward Net Zero Transition	The mitigation activity shall avoid locking-in levels of GHG emissions, technologies or carbon-intensive practices that are incompatible with the objective of achieving net zero GHG emissions by mid-century.

[4] The Core Carbon Principles. https://icvcm.org/core-carbon-principles/

ICVCM has officially designated several carbon-crediting programmes as CCP-Eligible (see the list below), meaning they meet the high-integrity standards set by CCPs.

CCP-Eligible Programmes[5]:

1. Verified Carbon Standard (VCS) – operated by Verra
2. Gold Standard (GS)
3. American Carbon Registry (ACR)
4. Climate Action Reserve (CAR)
5. Architecture for REDD+ Transactions (ART)
6. ERS - Ecosystem Restoration Standard
7. Isometric

These programmes collectively represent over 98% of the voluntary carbon market and are authorised to issue CCP-labelled credits for projects that also meet ICVCM-approved methodologies.

CCP label

Based on the ICVCM's 'two-tick' process, a carbon credit can receive the CCP label if it is issued by a programme approved as 'CCP-Eligible' and is based on a methodology that has been recognised as 'CCP-Approved'[6].

The CCP label serves as a guarantee that each credit corresponds to one tonne of greenhouse gas emissions either reduced or removed from the atmosphere. It also signifies that credits generated from new projects adhere to rigorous social and environmental safeguards and contribute positively to sustainable development outcomes[7].

CCP-Approved methodologies

As of November 27, 2025, 37 methodologies from six CCP-Eligible Programmes have received 'CCP Approved' status. The table below presents a matrix showing the number of CCP-approved methodologies from each CCP-Eligible Programme. The VCS and the Gold Standard are the most active in achieving CCP eligibility, with 11 of the 37 approved methodologies originating from VCS and 7 from the Gold Standard. The approval process is ongoing.

[5] ICVCM. Assessment Status. https://icvcm.org/assessment-status/
[6] ICVCM. https://icvcm.org/integrity-council-announces-first-high-integrity-ccp-labelled-carbon-credits-as-assessments-continue/
[7] ICVCM. https://icvcm.org/integrity-council-announces-first-high-integrity-ccp-labelled-carbon-credits-as-assessments-continue/

Table 1.2. CCP-Approved methodologies and CCP-Eligible programmes matrix[8]

		CCP-Eligible Carbon Crediting Programme							Total
		Verified Carbon Standard	Gold Standard	ACR	Climate Action Reserve (CAR)	Architecture for REDD+ Transaction TREES (ART)	ERS - Ecosystem Restoration Standard	Isometric	
CCP-Approved methodologies	Afforestation	2		1					
	Biochar	1			1			1	
	Biodigesters (household)		1						
	Carbon Dioxide Removals		1					5	
	Efficient Cookstoves	1	3						
	Improved Forestry Management	1		1	1				
	Landfill Gas Capture & Utilisation	2	2	1	1				
	Leak Detection/Repair in Gas Systems	1							
	N_2O Abatement in Adipic Acid Production				2				
	ODS[9] Destruction			1	2				
	REDD+	2				1			
	Sustainable Agriculture (Rotational Crops, Low Till/No Tillage etc)	1			1				
	Total	**11**	**7**	**4**	**8**	**1**	**0**	**6**	**37**

[8] ICVCM. Assessment Status. https://icvcm.org/assessment-status/
[9] Ozone-Depleting Substances

Recent trends show that the market is shifting away from low-cost carbon credits toward those with stronger environmental credibility[10]. Buyers are increasingly seeking credits that demonstrate measurable and trustworthy climate impacts.

In 2024, three carbon registries issued CCP-Labelled carbon credits[11]:

- VCS – 36 Mt (mln tCO2-eq.)
- CAR – 6 Mt
- ACR – 2 Mt

Case

Project registered under CCP-approved methodology

In April 2025 Verra successfully registered the first project using a VCS methodology, recognised by the ICVCM as satisfying the CCP principles. The Tond Tenga project, located in Burkina Faso in West Africa, is aiming to restore over 12,000 hectares of degraded land[12]. The project uses VM0047 methodology for Afforestation, Reforestation, and Revegetation. Over its 40-year crediting period, it is expected to remove more than 3.1 mln tCO2-eq., while also delivering co-benefits such as biodiversity conservation, sustainable livelihoods, and gender-inclusive community empowerment.

VCMI

VCMI's Claims Code of Practice

The Voluntary Carbon Markets Integrity Initiative (VCMI) plays a central role in strengthening trust and accountability in the voluntary carbon market. Its Claims Code of Practice[13] provides a structured framework for companies to make credible climate claims when using carbon credits. This code ensures that such claims are grounded in science-aligned emissions reduction targets and supported by transparent monitoring, reporting, and third-party assurance. By enabling companies to make 'Carbon Integrity' claims, the code helps align voluntary carbon credit use with global net-zero goals and the Paris Agreement.

The VCMI Claims Code of Practice addresses integrity on the demand side by offering clear guidance to companies and other non-state actors on how to credibly incorporate carbon credits into their climate strategies and communicate their use transparently. It establishes a consistent and transparent framework for interpreting

[10] Carbon Credits. https://carboncredits.com/vcm-voluntary-carbon-market-makeover-in-2024-carbon-credit-trading-drops-25-removals-soar-381/
[11] Climate Focus. https://climatefocus.com/wp-content/uploads/2025/01/Voluntary-Carbon-Market-2024-Review.pdf
[12] Verra. https://verra.org/verra-registers-first-project-using-a-ccp-approved-vcs-methodology/
[13] VCMI. Claims Code of Practice. https://vcmintegrity.org/vcmi-claims-code-of-practice/

climate-related claims, thereby enhancing trust and confidence among stakeholders engaging with the voluntary carbon market[14].

Scope 3 Action Code of Practice

In 2025, VCMI introduced the Scope 3 Action Code of Practice[15], offering a practical, science-based pathway for companies to address hard-to-abate Scope 3 emissions across their value chains. One of the primary goals of the Code is to accelerate meaningful climate action by promoting the use of high-integrity carbon credits as a complement—not a replacement—for direct emissions reductions. Scope 3 emissions, which can account for up to 70% of a company's total greenhouse gas footprint, are often the most challenging to address due to limited control over value chain activities.

The VCMI's Scope 3 Action Code of Practice suggests that companies set science-aligned near-term emission reduction targets for scope 3 emissions. The Code offers a structured approach to annually assess the gap between their actual emissions and a science-aligned reduction pathway. To bridge this gap, companies are permitted to retire high-quality carbon credits to compensate for emissions.

From January 1, 2026, the VCMI's Claims Code of Practice requires companies to retire only carbon credits that meet the Core Carbon Principles standard.

ICROA

ICROA (International Carbon Reduction and Offset Alliance) plays a pivotal role in the Voluntary Carbon Market by acting as a quality assurance and best practice accreditation body. ICROA delivers endorsement to the carbon crediting programmes after a third-party assessment to ensure that programmes operate with high integrity.

Compared to ICVCM and VCMI, ICROA evaluates carbon crediting programmes at the organisational level[16]. It does not assess the methodologies used by these programmes or the individual projects that apply them—these areas fall within the scope of ICVCM and VCMI.

[14] VCMI. Claims Code of Practice. https://vcmintegrity.org/vcmi-claims-code-of-practice/
[15] VCMI. Scope 3 Action Code of Practice. https://vcmintegrity.org/scope-3-action/
[16] ICROA Endorsement. https://icroa.org/standard-endorsement/

Figure 1.1 – ICROA-endorsed VCM standards

Among the standards presented above, the most popular carbon crediting programmes are Verified Carbon Standard (VCS), Gold Standard, American Carbon Registry (ACR), and Climate Action Reserve (CAR), which collectively account for 83% of the total market share[17].

The table below compares the major carbon crediting programmes in terms of market share, project locations, and sectors covered. It shows that VCS and Gold Standard hold the largest market shares and implement projects globally, primarily in developing countries. In contrast, ACR and CAR have smaller market shares and are more regionally focused within the Americas.

[17] in terms of number of credits issued in 2024.
Voluntary Carbon Market Dashboard
https://climatefocus.com/initiatives/voluntary-carbon-market-dashboard/

Table 1.3. Comparison of top carbon crediting programmes[18, 19]

Carbon crediting programme	Name of carbon credits issued	Credits issued in 2024, in mln	Market Share in 2024*	Number of projects registered (in total)	Project locations	Sectors covered[20]
Verified Carbon Standard (VCS)	Verified Carbon Units (VCUs)	105	36%	2537	Mainly in developing countries	All sectors
Gold Standard	Verified Emission Reductions (VER)	84	29%	2957	Developing, low and middle income countries[21]. Renewable energy projects are prioritised in Least Developed Countries (LDCs)[22]	All sectors, excluding conservation and REDD+ projects
American Carbon Registry (ACR)	Emission Reduction Tons (ERTs)	33	11%	127	United States	All sectors, excluding conservation and REDD+ projects
Climate Action Reserve (CAR)	Climate Reserve Tonnes (CRTs)	19	7%	340	United States, Canada, Mexico	LULUCF[23], Conservation and REDD+, Industrial GHG, Methane capture
Total (four standards)		**241 из 291**	**83%**	**5961 из 6202**		

*in terms of number of credits issued

[18] Carbon Credits. https://carboncredits.com/the-4-best-carbon-offset-programs-for-2023/
[19] Voluntary Carbon Market Dashboard https://climatefocus.com/initiatives/voluntary-carbon-market-dashboard/
[20] Hamerkop. https://www.hamerkop.co/blog/the-ever-expanding-world-of-carbon-certification-standards
[21] https://vitaimpact.org/wp-content/uploads/2021/10/The-Gold-Standard-Methodolgy-and-Accreditation-Note.pdf
[22] Gold Standard. https://www.goldstandard.org/renewable-energy
[23] Land Use, Land-Use Change and Forestry

VERRA AND GOLD STANDARD: PROGRAMMES OVERVIEW

2. Verra and Gold Standard: programmes overview

Verra and the Gold Standard are internationally recognised for some of the most widely adopted carbon crediting frameworks. This section provides a brief overview of standards of these organisations in terms of their scopes and programmes. Then a comparison based on sectoral coverage, geographic reach, certification processes, the current state of project applications from Kazakhstan, Central Asia, and the Caucasus, as well as other important parameters is presented.

Verra

Verra operates several programmes, designed to drive climate action and sustainable development across various sectors:

- **VCS:** flagship carbon crediting programme, covering a wide range of emission reduction and removal activities.
- **Scope 3 emissions:** focuses on accounting and reducing indirect emissions across corporate value chains.
- **REDD+:** A framework that connects national-level forest conservation strategies with local project implementation to reduce emissions from deforestation and forest degradation.
- **Climate, Community & Biodiversity (CCB) and Sustainable Development Verified Impact Standard (SD VISta):** programmes that can function as standalone crediting mechanisms or as labels to highlight the integrity and co-benefits of carbon projects.
- **Plastic programme:** a separate initiative aimed at incentivising the collection and recycling of plastic waste through credit issuance.

More details about each programme are presented below.

Verified Carbon Standard[24]

The VCS Programme – one of the world's most widely adopted greenhouse gas crediting programmes. It channels investment into projects that reduce and remove emissions, improve livelihoods, and protect nature. Projects, activities, or methodologies can be developed under any of the 16 VCS sectoral scopes[25] .

1. Energy (renewable/non-renewable)
2. Energy distribution
3. Energy demand
4. Manufacturing industries
5. Chemical industry
6. Construction
7. Transport

[24] Verra. https://verra.org/programs/verified-carbon-standard/
[25] Verra. Sectoral Scopes. https://verra.org/programs/verified-carbon-standard/vcs-program-details/#sectoral-scopes

8. Mining/Mineral production
9. Metal production
10. Fugitive emissions – from fuels (solid, oil, and gas)
11. Fugitive emissions – from Industrial gases (halocarbons and sulphur hexafluoride)
12. Solvents use
13. Waste handling and disposal
14. Agriculture, forestry and other land use (AFOLU)
15. Livestock and manure management
16. Carbon capture and storage

Scope 3 Standard[26]

Scope 3 Standard (S3S) Programme is designed to help companies address their Scope 3 emissions, which typically represent the majority of a company's carbon footprint. These emissions stem from activities across the value chain, both upstream and downstream, and are often difficult to measure and manage. The S3S Programme provides a robust framework for certifying value chain interventions. Through the issuance of corresponding credits, the programme enables transparent tracking of emissions reductions and removals.

Jurisdictional and Nested REDD+ (JNR) Framework[27] is the world's first accounting and verification framework for REDD+ programmes and projects. It allows governments to establish REDD+ programmes with standardised baselines and monitoring systems, while enabling individual projects (local conservation efforts) to be nested within these broader efforts. The framework ensures consistency in carbon accounting, safeguards additionality, and addresses potential risks associated with emission reductions.

Climate, Community & Biodiversity (CCB) Standards[28]

The standard applies to a wide range of land management projects, afforestation, reforestation, REDD, agriculture etc. It ensures that each project delivers measurable benefits for the climate, local communities, and biodiversity.

The standard can be applied exclusively to a project or in conjunction with VCS certification to enhance the credibility and impact of VCS's Agriculture, forestry, and land-use (AFOLU) projects. When used together, VCS credits may be issued with a CCB label, signifying that the project meets additional criteria for climate, community, and biodiversity benefits.

The Sustainable Development Verified Impact Standard (SD VISta)[29]

[26] Verra. https://verra.org/programs/scope-3-standard-program/
[27] Verra. https://verra.org/programs/jurisdictional-nested-redd-framework/
[28] Verra. https://verra.org/programs/ccbs/
[29] Verra. https://verra.org/programs/sd-verified-impact-standard/

The SD VISta programme is designed for projects across diverse sectors that deliver measurable sustainable development benefits. Each project must define clear objectives aligned with sustainable development goals to ensure transparency and impact.

Similar to the CCB Standard, SD VISta standard can be applied to certify the project, enabling the generation of tradable credits. Alternatively, a SD VISta label can be applied to carbon credits of another programme (certified or approved by Verra), signifying that the project has been verified for its broader sustainable impact. Projects may also receive a verified claim — a formal statement of the project's measured contribution to sustainable development—regardless of the assessment pathway chosen.

Plastic Waste Reduction Standard (Plastic programme)[30]

The Plastic Programme provides a standardised framework for measuring and crediting plastic waste collection and recycling activities (reuse or reduction activities are not covered). It supports projects that go beyond baseline levels of plastic recovery, issuing credits based on the volume of plastic collected and/or recycled. The programme ensures transparency and drives investment into effective plastic waste reduction efforts.

Gold Standard

Gold Standard consolidates all project types and impact areas under one rigorous standard.

Project activity scopes:

Community Services[31]

Projects that deliver or enhance access to essential social services at the household, community, or institutional level. These projects typically focus on areas such as end-use energy efficiency (improved cooking solutions or lighting projects); water, sanitation and hygiene (WASH) projects; and off-grid renewable energy.

Natural Climate Solutions[32]

Afforestation, reforestation, agriculture, and blue carbon projects under the Gold Standard offer natural solutions for absorbing CO_2 while creating sustainability value through job creation and ecosystem conservation. These projects may include activities such as tree planting, single-species plantations, and silvicultural systems etc. Gold Standard ensures environmental integrity and adherence to robust safeguarding principles throughout project implementation.

[30] Verra. https://verra.org/programs/plastic-waste-reduction-standard/
[31] Gold Standard. https://www.goldstandard.org/gs4gg-activity-scope/community-services
[32] Gold Standard. https://www.goldstandard.org/gs4gg-activity-scope/natural-climate-solutions

Renewable Energy[33]

To meet the principle of additionality, Gold Standard prioritises the development of new grid-connected renewable energy projects in least developed countries, small island developing states, conflict-affected regions, and countries facing significant barriers to modernising their energy infrastructure.

Water Benefits[34]

The programme is designed to address global water security challenges by certifying projects that improve access to clean and safe water, especially in developing regions. The programme enables the issuance of Water Benefit Certificates—quantified and verified contributions to water access and quality. These certificates help attract funding from organisations committed to water stewardship, ensuring that certified projects deliver measurable impacts toward at least three Sustainable Development Goals (SDGs) and demonstrate a clear financial need.

Waste management[35]

The programme supports innovative practices such as composting, anaerobic digestion, recycling, and energy recovery from waste. It enables large-scale facilities like landfills, wastewater treatment plants, and manure management systems to generate energy while minimising pollution. By promoting the recovery and reuse of materials like plastics, metals, and paper, the programme contributes to lower global emissions and advances multiple SDGs through verified climate and social impacts.

Comparison of Verra and Gold Standard

Sectoral coverage

The table below presents a comparison between Verra and Gold Standard in terms of their coverage across various sectors. While different sectors are covered by a single programme under the Gold Standard, sectors are addressed by different programmes within Verra's framework.

[33] Gold Standard. https://www.goldstandard.org/renewable-energy
[34] Gold Standard. https://www.goldstandard.org/gs4gg-activity-scope/water-benefits
[35] Gold Standard. https://www.goldstandard.org/waste-management

Table 2.1. Comparison of sectors coverage by Verra and Gold Standard

Sector is not covered by the standard

	Verra	Gold Standard
RE	Covered under VCS standard	• Solar • Wind • Geothermal • Biogas • Biomass • Small, low impact hydro
Agriculture, forestry and other land use (AFOLU)	Covered by VCS standard: • ARR* • Agricultural Land Management • IFM • REDD • Avoided Conversion of Grasslands and Shrublands • Wetlands Restoration and Conservation	Afforestation/Reforestation projects • tree planting • single-species plantations • silvicultural systems
REDD	• Covered in AFOLU by VCS standard • Also covered by CCB standard	Not covered
Agriculture		Covered
Blue carbon	Covered under VCS standard	Covered
Community services	Cookstoves covered under VCS	• Household biogas • Clean cooking solutions • Water, sanitation and hygiene (WASH) projects • Off-grid renewable energy
Water management	Under SD VISta programme: • Water Access and Sanitation • Oceans and Marine Resources	• Water access • Water access, sanitation and hygiene (WASH) projects • Sustainable sugarcane projects
Waste management	• Collection and recycling activities are covered by Plastic programme • Livestock and manure management are covered by VCS	• Composting • Anaerobic digestion • Incineration • Landfill gas recovery • Wastewater treatment plants • Manure management • Recycling, recovery & reuse of plastics, metal and paper

Other project types	• CCUS** • Carbon dioxide removal technologies • Early retirement of coal-fired power plants** • Grid energy storage optimisation** • Hydrogen and e-fuels • Enhanced weathering • Cement industry decarbonisation	-

*Afforestation, Reforestation and other land use projects also covered by CCB standard
**Methodology under development

Other main characteristics

The table below presents a comparison of VCS and Gold Standard based on key parameters that may be important for potential project developers and other stakeholders when choosing between one of the standards.

Table 2.2. Comparison of VCS and Gold Standard

	VCS	Gold Standard
Most prevalent sector/ activity scope[36]	By numbers of credits issued: - Nature based solutions - Renewable energy By numbers of registered projects: - Renewable energy	By numbers of credits issued: - Household projects - Renewable energy By numbers of registered projects: - Household projects
Prevalent project locations	Mainly in developing countries	Developing, low- and middle-income countries[37] Renewable energy projects are prioritised in Least Developed Countries (LDCs)[38]
Duration of the certification process[39], [40]	Preliminary review: not specified; Public comment period: 30 days; Validation: can take up to a year; Project design review: 4 weeks + 4 weeks for responses (may require 2-3 rounds); Verification: depends on VVBs; Performance Review: 4 weeks + 4 weeks for responses (may require 2-3 rounds).	Preliminary review: 4 weeks + 2 weeks for responses; Validation: must be successfully completed within two years; Project design review: 4 weeks + 2-6 weeks for responses; Verification: depends on VVBs; Performance Review: 3 weeks + 2-6 weeks for responses.
Alignment with the Paris Agreement Crediting Mechanism (PACM) under Article 6.4	Actively aligning with PACM and has published a practitioner's guide[41]	Recognised as a candidate for Article 6 integration, pending alignment
Requirements to report contributions to the UN SDGs.	Demonstrating impact on at least three SDGs by the end of the first monitoring period is required[42]. This requirement is waived for projects that are also verified under Verra's CCB and SD VISta standards concurrently with their VCS Programme verification[43].	The use of the Digital SDG Impact Tool became mandatory in 2024[44]. Gold Standard requires project developers to submit to the VVB a fully completed estimate of the climate and sustainable development impacts for at least three SDGs, including SDG 13 (Climate Action), via the Digital SDG Impact Tool[45].

[36] Voluntary Carbon Market Dashboard https://climatefocus.com/initiatives/voluntary-carbon-market-dashboard/
[37] https://vitaimpact.o/wp-content/uploads/2021/10/The-Gold-Standard-Methodolgy-and-Accreditation-Note.pdf
[38] Gold Standard. https://www.goldstandard.org/renewable-energy
[39] Verra. https://verra.org/timelines-for-verra-project-reviews/
[40] Gold Standard. https://www.goldstandard.org/publications/certification-process-stepbystep
[41] Gold Standard. https://www.goldstandard.org/publications/a-practitioners-guide-aligning-the-voluntary-carbon
[42] Verra. https://verra.org/verra-launches-final-consultation-on-version-5-of-the-vcs-program/
[43] Verra. https://verra.org/vcs-program-updates-released/
[44] Gold Standard. Full Launch of The Digital SDG Impact Tool. https://globalgoals.goldstandard.org/full-digital-sdg-impact-tool-launch/
[45] Gold Standard. Certification Process Step-by-Step. https://www.goldstandard.org/publications/certification-process-stepbystep

	VCS	Gold Standard
Application in company's ESG-reporting, covering Scope 3	yes	yes
Application of the standards within the national carbon pricing mechanisms	• Applicable within ETS (Chile) • Applicable within carbon tax mechanism (e.g. Colombia, South Africa, Singapore) • Application within Article 6.2 of the Paris Agreement (under development) • Applicable within compliance framework (Peru)	• Not applicable within ETS • Applicable within carbon tax mechanism (e.g. Colombia, South Africa, Chile, Singapore) • Application within Article 6.2 of the Paris Agreement (under development) • Applicable within compliance framework (Peru)
Regional outlook		
Number of applications from Kazakhstan[46]	**6** in total • 2 - wind farms (registered) • 1 - landfill gas (LFG) capture and utilisation (under validation) • 1 - ARR (Greening of the dried Aral Sea) (under development) • 2 – AFOLU (under validation)	**8** in total • 6 wind farms (2 certified, 4 planned) • 1 solar (planned) • 1 energy efficiency (planned)
Number of applications from Central Asia and Caucasus	**11** in total. Azerbaijan: **1** leak detection (under development); Georgia: **1** hydro (registered); Tajikistan: **1** hydro (registered); Uzbekistan: **2** gas leaks detection: - 1 registered, - 1 under validation; Kazakhstan: **6** in total.	**17** in total. Armenia: **1** solar (planned); Azerbaijan: **3** in total: - 1 wind (planned), - 1 hydro (estimated), - 1 solar (estimated); Georgia: **2** in total: - 1 afforestation (certified), - 1 solar (planned); Uzbekistan: **3** in total: - 2 wind (1 estimated, 1 planned), - 1 solar (estimated); Kazakhstan: **8** in total.

[46] Verra registry. https://registry.verra.org/app/search/VCS; Gold Standard registry. https://registry.goldstandard.org/projects?q=&page=1

Case study: Countries applying Verra and Gold Standard to their compliance frameworks

As countries intensify efforts to meet their climate targets, a growing number are integrating Voluntary Carbon Market credits into their compliance frameworks. This approach enables regulated entities to fulfil part of their obligations by retiring high-quality carbon credits, often issued under internationally recognised standards such as VCS and the Gold Standard.

Countries such as Singapore, South Africa, Colombia, and Chile permit the use of VCM carbon credits to fulfil compliance obligations under their national carbon tax schemes. Peru allows VCM carbon credits to be accounted in the National Registry of Mitigation Measures (RENAMI), which is a system that tracks information on GHG emissions and monitors the progress towards Nationally Determined Contributions (NDCs) under the Paris Agreement.

Columbia

In 2017, Colombia introduced a National Carbon Tax, requiring industries to pay for their greenhouse gas emissions. The legislation permits entities to offset their tax liability using high-quality carbon credits from domestic projects certified by VCS and Gold Standard[47, 48]. All participants must comply with both the VCS / Gold Standard programme requirements and Colombia's tax regulations.

South Africa

South Africa enacted its Carbon Tax Act in June 2019 to support its climate goals under the Paris Agreement. The regulation recognises VCS, Gold Standard, and Clean Development Mechanism (CDM) as eligible sources of carbon credits for tax compliance[49, 50]. Projects in such areas as transport, waste, and AFOLU sectors are eligible to generate credits. Credits must be retired through the Carbon Offset Administration System (COAS).

Chile

Since 2024, VCS credits are officially recognised under Chile's domestic ETS – Green Tax Emissions Compensation System[51]. The Chilean Ministry of the Environment approved Exempt Resolution 1420, which allows Verra-certified projects to participate in the national system. In 2024, four Verra's VCS projects were approved under Chile's Green Tax Emissions Compensation System[52]. The four projects certified by VCS are:

[47] Verra. https://verra.org/programs/verified-carbon-standard/vcs-in-compliance-markets/
[48] Global Environmental Markets. https://www.gemglobal.com/offset-colombia-carbon-tax-liability-on-carbon-trade-exchange
[49] Verra. https://verra.org/programs/verified-carbon-standard/vcs-in-compliance-markets/
[50] Carbon Offset Administration Systems. https://carbon.energy.gov.za/Home.aspx
[51] Verra. https://verra.org/chilean-carbon-market-recognizes-verra-certified-projects/
[52] Verra. https://verra.org/four-verra-vcs-projects-approved-under-chiles-green-tax-emissions-compensation-system/

- Mariposas Hydroelectric Project (Verra Project 819)
- MSA-1 Hydropower Plant (Verra Project 1945)
- Ovejería Photovoltaic Power Plant (Verra Project 1840)
- Lican Hydroelectric Plant (Verra Project 1083)

In January 2024, the Chilean Ministry of Environment also formally recognised Gold Standard credits under its national carbon tax scheme. This recognition allows companies in Chile to use Gold Standard-certified credits from domestic projects to meet their carbon tax obligations[53].

Domestic VCM projects are allowed to participate in the domestic carbon market and national carbon tax scheme, provided they meet criteria such as additionality, permanence, and public registry traceability.

Peru

Peru's Ministry of the Environment (MINAM) approved two standards – Gold Standard and VCS - and some of their respective methodologies for use in its National Registry of Mitigation Measures (RENAMI)[54]. This approval enables Gold Standard and VCS certified projects to be registered and used within Peru's compliance framework.

For the Gold Standard, the following methodologies are approved: i) Methodology on technologies to replace the decentralised consumption of thermal energy; ii) Methodology on reduction and sequestration of greenhouse gas emissions in afforestation/reforestation.

For VCS, the approved methodologies are: i) Methodology on afforestation, reforestation, and revegetation (ARR); (ii) Methodology on Reducing Emissions from Deforestation and Forest Degradation (REDD+).

Singapore

In August 2022, the National Environment Agency (NEA) of Singapore signed a Memorandum of Understanding with Gold Standard and Verra, allowing Singapore-based companies to use eligible carbon credits issued by VCS and Gold Standard to meet a portion of their obligations under the Singapore carbon tax scheme[55, 56].

Additionally, in November 2024 Singapore's National Climate Change Secretariat (NCCS) partnered with Verra and Gold Standard to develop a standardised Article 6.2 Crediting Protocol[57]. One way Article 6* can be implemented is by engaging existing independent carbon crediting programmes, which are already active and widely

[53] Gold Standard. https://www.goldstandard.org/news/gold-standard-credits-recognised-in-chiles-carbon-tax-scheme
[54] Paskay. https://paskay.pe/mercado-de-carbono-y-cambio-climatico-peru-inicia-acreditacion-de-estandares-internacionales-para-la-reduccion-de-emisiones/
[55] Gold Standard. https://www.goldstandard.org/news/gold-standard-signs-momentous-partnership-carbon-credits-singapore
[56] Verra. https://verra.org/singapore-and-verra-sign-mou-to-support-national-carbon-tax/
[57] NCCS. https://www.nccs.gov.sg/singapore-gold-standard-and-verra-release-initial-recommendations-outlining-progress/

adopted by market participants. Singapore, Gold Standard, and Verra aim to jointly establish consistent and efficient procedures that enable governments to collaborate with independent carbon crediting programmes for the implementation of Article 6.2.

*Article 6 is a mechanism of international cooperation under the Paris Agreement aimed at helping countries achieve their NDCs and sustainable development goals.

GLOBAL OVERVIEW OF VCM CARBON PROJECTS PRICES

3. Global overview of VCM carbon projects prices

The data on transaction volume and average prices is sourced from the Ecosystem Marketplace's database of voluntarily disclosed over-the-counter (OTC) carbon credit transactions. The data is sourced from actual transaction data provided by respondents.

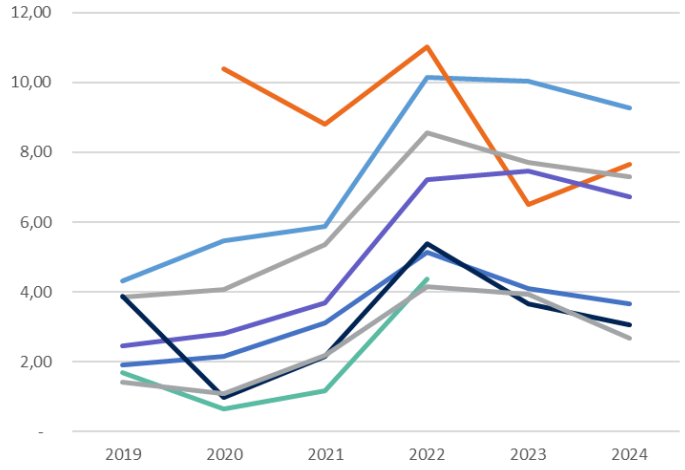
Project types

World carbon credit prices experienced significant growth between 2019 and 2022, with a compound annual growth rate (CAGR) of 30–40% across nearly all project categories (see Figure below).

Since 2022, prices have declined across all project categories. The most notable decreases were observed in renewable energy, with a negative CAGR of 20%, and in energy efficiency/fuel switching, with a negative CAGR of 25%.

In 2024, four project categories were sold above the average market price of USD 6.34: Forestry and land use, Agriculture, Household/community devices, and Waste disposal.

Figure 3.1. Historic price* by project categories (USD/tCO2e)[58]



	CAGR (2019-2022)	CAGR (2022-2024)
Forestry and Land Use	33%	-4%
Agriculture	3%	-17%
Household / Community Devices	31%	-8%
Waste Disposal	43%	-4%
Chemical Processes/ Industrial Manufacturing	39%	-16%
Transportation	37%	-14%
Energy Efficiency / Fuel Switching	12%	-25%
Renewable Energy	43%	-20%

**based on data from actual transaction data*

State of market in 2023-2024

As presented in the Table below, the largest share of the transaction volume in 2023-2024 corresponds to carbon credits from the Forestry and Land Use and Renewable Energy categories. The most expensive carbon credits in both 2023 and 2024 originated from the Forestry and Land Use category. The high average price of this category is primarily driven by the elevated prices of carbon credits from IFM

[58] Ecosystem Marketplace. State of the Voluntary Carbon Market, 2025

(Improved Forest Management) and ARR (Afforestation, Reforestation, and Revegetation) projects (more details below).

All project categories experienced a decline in transaction volume in 2024, except for Forestry and Land Use, which maintained its volume, and Waste Disposal, which saw significant growth of 226%. The increase in transaction volume within the Waste Disposal category was driven by the CCP approval of Landfill Gas methodologies, which increased buyers' interest[59].

Average transaction prices moderately decreased across all project categories in 2024, except for Agriculture, which recorded an 18% price increase.

Table 3.1. VCM Transaction volumes and prices by project category, 2023-2024[60]

	Volume, mln tCO2-eq.		**Price, USD**		**Percent Change** (2024 relative to 2023)	
	2023	**2024**	**2023**	**2024**	**Volume**	**Price**
Forestry and Land Use	37,1	37,0	10,04	9,27	0%	-8%
Renewable Energy	29,0	22,3	3,92	2,67	-23%	-32%
Chemical Processes/ Industrial Manufacturing	12,2	5,7	4,10	3,66	-53%	-11%
Household / Community Devices	10,2	5,1	7,71	7,30	-50%	-5%
Waste Disposal	1,5	4,8	7,46	6,72	226%	-10%
Agriculture	4,7	0,6	6,51	7,66	-87%	18%
Energy Efficiency / Fuel Switching	9,4	0,6	3,65	3,05	-93%	-16%
Transportation		0,2		3,24		

In 2024, approximately half of the VCM carbon credits were traded **below the average price** of USD 6.37 per tCO2-eq.[61]. These lower-priced credits primarily originated from Renewable Energy projects, which are considered less additional, and from older Forestry and Land Use projects.

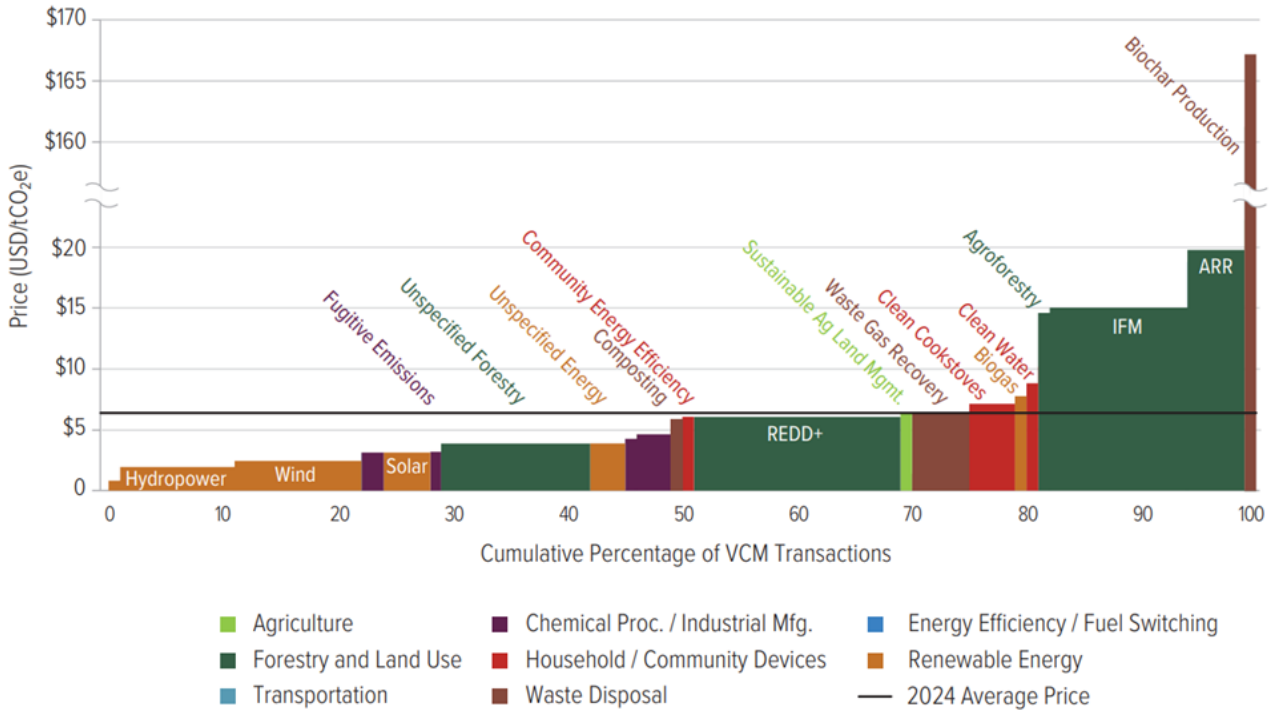
The next 25% of demand was met by credit trading **near the average market price.** This group included REDD+ projects, Sustainable Agricultural Land Management, and Waste Gas Recovery, particularly those involving Landfill Gas.

[59] Ecosystem Marketplace. State of the Voluntary Carbon Market, 2025
[60] Ecosystem Marketplace. State of the Voluntary Carbon Market, 2025
[61] Ecosystem Marketplace. State of the Voluntary Carbon Market, 2025

The remaining quarter of transaction volume came from project types that generally traded at the **above-average market price.** These included IFM, ARR, clean cooking and water purification projects under the Household/Community Devices category, and Renewable Energy projects focused on biogas.

The most expensive credit type was engineered carbon removal, such as Biochar Production, which averaged over USD 165 per tCO2-eq. However, these credits accounted for less than 1% of all transactions reported to Ecosystem Marketplace in 2024.

Figure 3.2. VCM Credit Cost Curve, 2024 Transactions[62]



Forestry and Land Use category

Within the Forestry and Land Use category, REDD+ credits remained the most traded type in 2024. However, their market share and value declined significantly, with transaction volume decreasing from 28.2 mln tCO2-eq in 2023 to 13.6 mln tCO2-eq in 2024[63]. The average price for REDD+ credits dropped by 23% to USD 6.03 in 2024. In contrast, IFM credits showed strong growth, with transaction volumes more than tripling year-over-year, largely driven by supply from North America. Despite their higher price range of USD 15-16 per tCO2-eq., IFM credits gained traction, signalling a shift in market preference toward more robust and premium credit types. In general, the trends in the Forestry and Land Use category show the growing demand for high-integrity carbon credits at premium prices.

[62] Ecosystem Marketplace. State of the Voluntary Carbon Market, 2025
[63] Ecosystem Marketplace. State of the Voluntary Carbon Market, 2025

Overall, there is a noticeable increase in the value of removal carbon credits, which are generated by projects that physically extract carbon from the atmosphere. The growing demand for removal credits is driven by their alignment with long-term net-zero goals, as they offer a more permanent solution to offsetting emissions compared to avoidance or reduction credits[64].

Regions

If we examine the transaction volume (in mln tCO2-eq.) and prices by region (based on the origin of the credits), we observe that the largest volumes of transactions occur for credits originating from Latin America and the Caribbean, as well as North America. It is worth noting that transaction volumes decreased across all regions—except Europe. However, Europe accounts for the smallest share of global carbon credit transactions, so the increase between 2023 and 2024 is negligible from a global perspective.

Table 3.2. VCM Transaction volumes and prices by regions, 2023-2024[65]

Region (where credits originated from)	**Volume,** mln tCO2-eq.		**Average price*,** USD		**Percent Change** (in 2024 relative to 2023)		**Driver of average price change**
	2023	**2024**	**2023**	**2024**	**Volume**	**Price**	
Latin America and Caribbean	23,2	14,6	5,56	6,52	-37%	17%	increasing prices for Household/ Community Devices credits
North America	20,8	13,6	7,24	11,52	-34%	59%	increase in the transaction volume of relatively expensive Forestry and Land Use and Waste Disposal credits
Asia	17,1	9,2	7,19	5,74	-46%	-20%	declining prices for Asian carbon credits from almost all categories, especially Renewable Energy
Africa	13,8	7,2	5,98	7,53	-48%	26%	increasing prices for Forestry and Land Use credits
Europe	0,5	0,7	27,17	29,19	33%	7%	growing volume of reported transactions with expensive Forestry and Land Use credits and several extremely expensive transactions of Biochar Production projects in the Waste Disposal category
Oceania	0,06		32,17				

**based on data from actual transaction data provided by Ecosystem Marketplace respondents.*

[64] Carbon Credits. https://carboncredits.com/vcm-voluntary-carbon-market-makeover-in-2024-carbon-credit-trading-drops-25-removals-soar-381/
[65] Ecosystem Marketplace. State of the Voluntary Carbon Market, 2025

The highest average prices are observed for carbon credits originating from Europe and North America. The price increase in these regions between 2023 and 2024 is linked to rising demand for CCP-approved credits and high-cost IFM credits. Transaction volumes for relatively expensive credits from Forestry and Land Use, as well as Waste Disposal projects, increased in both North America and Europe.

Asia is the only region that experienced a decline in average price between 2023 and 2024. This is primarily due to falling prices in the Renewable Energy category, which is affected by concerns over limited additionality. Moreover, low-priced carbon credits from CDM projects contributed to the decline in average prices across both the Renewable Energy category and the Asia region. CDM credits continue to account for approximately 26% of transaction volume within the Renewable Energy sector[66]. Additionally, the strong competitiveness of carbon credits from Latin America and Africa may be contributing to downward pressure on prices in Asia. Transaction volume for carbon credits from Asia declined by 46% in 2024, which may reflect decreasing demand for older credits based on outdated methodologies, alongside a global shift toward high-integrity carbon credits.

Moreover, China launched China's domestic voluntary carbon mechanism called the China Certified Emission Reduction programme (CCER) in 2024. Higher prices for CCER credits are expected, which incentivises project developers to implement projects locally[67]. This could potentially influence VCM carbon credit prices in the Asian region.

In Latin America and the Caribbean, as well as in Africa, similar trends are observed: a decrease in transaction volume accompanied by an increase in average prices. In Latin America and the Caribbean, the price increase is mainly driven by rising prices in the Household/Community Devices category. In Africa, the increase is attributed to higher prices for Forestry and Land Use credits.

Credit Vintage

There is a growing buyer's preference for credits from recent vintages, reflecting a shift toward higher integrity and relevance in climate action. If in 2023 buyers were willing to pay 53% premium for 'fresh' credits (not older than five years), in 2024, the price premium reached an unprecedented 217% level[68].

One of the factors influencing the price premium is the continuous improvement of project methodologies and the evolution of standards, which enhance the credibility, transparency, and environmental integrity of newer projects. Buyers are also motivated by the desire to align credit issuance with the period of their emissions, ensuring more accurate and timely climate reporting.

[66] Ecosystem Marketplace. State of the Voluntary Carbon Market, 2025
[67] S&P. https://www.spglobal.com/commodity-insights/en/news-research/latest-news/energy-transition/050823-chinas-domestic-voluntary-carbon-market-reboot-to-shake-up-global-offsets-trade
[68] Ecosystem Marketplace. State of the Voluntary Carbon Market, 2025

Key takeaways

(based on the analysis of project type and regions)

- Despite a moderate decline in average prices by project categories (mainly due to old vintage carbon credits), the average prices are increasing from the regional perspective. All regions experience a rise in average prices, except the Asian region.
- Renewable energy credits are priced lower due to legacy oversupply. The ongoing decline in the value of Asian renewable energy credits—particularly those from CDM projects—has significantly contributed to the overall drop in both the Renewable Energy category and the Asia region's market performance[69].
- North America and Europe are seeing a shift toward removal-based credits (e.g., soil carbon sequestration, direct air capture) and nature-based solutions. Buyers are increasingly prioritising credits that meet Core CCPs and align with ESG goals.
- Nature-based solutions, especially IFM and ARR, continue to command premium prices.
- Waste Disposal projects experience growth driven by the CCP approval of Landfill Gas methodologies.
- Buyers globally are becoming more selective, favouring credits with co-benefits such as biodiversity protection, gender equity, and alignment with the UN SDGs. This trend is especially strong in Europe and North America, where corporate ESG scrutiny is highest.

[69] Ecosystem Marketplace. State of the Voluntary Carbon Market, 2025

The role of labels in compliance and voluntary carbon markets.

In the Voluntary Carbon Market, labels serve as critical markers of quality, integrity, and eligibility for specific uses or claims. The labels are applied to carbon credits to indicate that they meet certain standards or criteria—whether environmental, social, or regulatory. Labels may increase the price of a carbon credit by highlighting the additional benefits it delivers.

The most prominent and widely referenced labels in the VCM today are the CCP label by ICVCM, the CCB and SD VISta labels by Verra, and CORSIA, which is used in aviation.

The CCP label is issued by the ICVCM and is designed to ensure high integrity of carbon credits. It sets a global benchmark for what constitutes a credible carbon credit by evaluating both the carbon-crediting programme and the methodology used. (More about CCPs, eligible programmes, and approved methodologies can be read in Section 1).

The CCB label is a certification label that demonstrates co-benefits beyond carbon, particularly in biodiversity conservation and community development. It is often paired with VCS, applied to projects in agriculture, forestry, and land-use (AFOLU), to enhance the social and environmental value of credits. Example: REDD+ projects that protect forests while supporting indigenous communities.

SD VISta is another certification label under Verra that focuses on verifying a project's contributions to the UN SDGs. Projects that meet rigorous criteria for positive social and environmental impacts can receive the SD VISta label, enhancing their credibility and market value.

CORSIA is a market label developed by the International Civil Aviation Organization (ICAO) to help airlines offset emissions from international flights. It is designed to complement other aviation-sector mitigation strategies—such as advancements in technology, operational efficiencies, and the adoption of sustainable aviation fuels—in support of the ICAO's aspirational goal of achieving carbon-neutral growth.

Table 3.3. Summary on VCM labels

Label	Purpose	Eligibility	Labelling Fees
CCP (ICVCM)	Ensure high-integrity carbon credits across programmes and methodologies	Only credits from eligible programmes and methodologies approved by ICVCM can carry the CCP label	No direct fees, but programmes and methodologies must undergo a rigorous assessment process, which may involve administrative and compliance costs
CCB (Verra)	Certify social and biodiversity co-benefits of carbon projects	Projects must deliver net positive benefits for local communities and ecosystems	USD 0.07 per credit
SD VISta (Verra)	Verify contributions to UN SDGs	• Projects must demonstrate measurable SDG contributions • Applies to a wide range of project types, including health, education, and gender equality	USD 0.07 per credit[70]
CORSIA	Offset international aviation emissions under the ICAO framework	• Only credits from approved programmes and vintages are eligible • Credits labelled for CORSIA must meet stringent environmental integrity criteria	No fixed fee, but costs may arise from insurance or administrative processes required to meet eligibility and double-claiming safeguards

The labels are not mutually exclusive—a single carbon credit can carry multiple labels, such as VCS + CCB + CCP, enhancing its marketability and trustworthiness, as well as value. Labels like CCP and CORSIA are especially important for compliance or quasi-compliance markets, while CCB and SD VISta emphasise co-benefits and sustainable development.

[70] Verra Program Fee Schedule. https://verra.org/wp-content/uploads/2024/10/Verra-Program-Fee-Schedule-v1.0.pdf

CORSIA

In 2016, ICAO introduced CORSIA—the Carbon Offsetting and Reduction Scheme for International Aviation—as a global initiative to mitigate CO2 emissions from international flights.

CORSIA applies exclusively to international flights, whereas emissions from domestic flights are included in national inventories and are therefore covered under the Paris Agreement, within the framework of the UNFCCC.

Since 2019 airlines were required to monitor, report, and verify CO2 emissions from international flights. The implementation of CORSIA has been divided into three phases[71]:

- Pilot phase (voluntary): from 2021 to 2023;
- Phase 1 (voluntary): from 2024 to 2026;
- Phase 2 (mandatory): from 2027 to 2035.

CORSIA is aimed at offsetting any growth in CO2 emissions above the baseline, which is set at 85% of 2019 CO2 emissions from international aviation[72]. The baseline is applied from 2024 until the end of the scheme in 2035. Airlines are required to offset emissions only if their annual emissions exceed this baseline.

In the voluntary phases, offsetting requirements apply only to international flights between countries that volunteer to participate. Starting from 2027, these requirements will extend to all international flights, with exceptions for[73]:

- Least developed countries, small island developing states and landlocked developing countries, as defined by the UN. These states may choose to participate voluntarily.
- States with a very small share of international traffic.

By 2025, the number of states volunteering to participate in CORSIA reached 129[74]. Kazakhstan has been participating in the scheme since 2019, declaring its voluntary participation in the Pilot and First implementation phases[75].

ICAO has published a set of requirements that carbon credits must fulfil to qualify for each phase related to carbon crediting programmes, approved methodologies, and acceptable vintage years. Credits with a vintage year of 2021 or later are currently eligible.

[71] Aviation Benefits Beyond Borders. https://aviationbenefits.org/media/wqphktun/fact-sheet_6_understanding-corsia.pdf
[72] Aviation Benefits Beyond Borders. https://aviationbenefits.org/environmental-efficiency/climate-action/market-based-measures/corsia/corsia-explained/
[73] Aviation Benefits Beyond Borders. https://aviationbenefits.org/environmental-efficiency/climate-action/market-based-measures/corsia/corsia-explained/
[74] IATA, 2025. https://www.iata.org/en/iata-repository/pressroom/fact-sheets/fact-sheet-corsia
[75] «KAZAERONAVIGATSIA» RSE. https://www.ans.kz/ru/news/article/16369

Standards

ICAO has approved eight standards as fully eligible for use in Phase 1: American Carbon Registry, Architecture for REDD+ Transactions, Climate Action Reserve, Global Carbon Council, Gold Standard, Isometric, Premium Thailand Voluntary Emission Reduction Program, and Verified Carbon Standard[76].

For Phase 2, ICAO has now approved four standards: American Carbon Registry, Architecture for REDD+ Transactions, Gold Standard, and Verified Carbon Standard.

Supply-demand balance

Demand side: During the Phase 1 (2024-2026), airlines may be required to offset between 106 and 137 mln tCO2-eq. emissions through the use of carbon credits[77].

Supply side: As of June 2025, 15.84 mln carbon credits are eligible under CORSIA[78]. These carbon credits originate from REDD+ project located in Guyana and certified by the Architecture for REDD+ Transactions (ART).

The limited availability of CORSIA-eligible credits is primarily due to challenges in obtaining Letters of Authorisation (LoAs) from the respective host-country governments. In the short term, supply is likely to stay limited due to the lack of LoAs, which are necessary for enabling corresponding adjustments[79]. Only a small number of governments currently have the legal frameworks and systems in place to support this process.

If we compare supply and demand, currently available CORSIA-eligible credits fulfil only 12-15% of the demand in the first phase.

Based on projections, the price of CORSIA credits is expected to range as follows[80]:

- USD 18–51 per tCO2-eq. during Phase 1 (2024-2026);
- USD 27–91 per tCO2-eq. in 2033–2035.

[76] ICAO. https://www.icao.int/news/icao-expands-approved-emissions-unit-programmes-effective-corsia-implementation
[77] MSCI. https://www.msci.com/documents/10199/1a941171-8829-145f-db45-99afc3f9d444
[78] Sylvera, 2025 https://www.sylvera.com/blog/corsia-carbon-credit-supply-demand-airlines-compliance
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PRACTICAL APPLICATION FOR KAZAKHSTAN

4. Practical application for Kazakhstan

There is a growing interest from international organisations in implementing carbon projects in Kazakhstan. At the same time, there is still a lack of awareness about VCM procedures and processes among potential project developers and other market participants. Currently, applications to VCM registries are submitted only with the involvement of international proponents.

However, we believe that VCM market in Kazakhstan will experience significant development in the nearest future. In February 2025, the AIFC launched trading on the AIFC Carbon Platform to facilitate the development of an environmental instruments market, including support of the voluntary carbon market in Kazakhstan. AIFC also plays an active role in raising awareness about the VCM among local stakeholders.

This section provides an overview of the key actors within the VCM ecosystem and outlines the main steps involved in the process of carbon credits issuance.

Main aspects to know for carbon projects developers and other market participants:

Key actors of the VCM market

Table 4.1

Participant	Role	Actions
Project Developers	Design, implement and manage carbon projects	- select methodologies - conduct baseline assessments - monitor emissions reductions - prepare documentation for validation and verification
Project Proponents	Legal representation of the project. Often the same as or closely related to project developers. May also include entities that own or sponsor the project	- legally represent the project - submit documentation to the Standard body - ensure compliance with requirements of carbon credits issuance process
Investors	Provide capital for project development and implementation	- assess risk and return - may receive a share of credits
Validation and Verification Bodies (VVBs)	Independent third-party auditors accredited by Standard body	- validate project design - verify actual emission reductions - ensure compliance with methodologies and standards
Standard Bodies (e.g., Verra, Gold Standard)	Standards, rules, methodologies, and	- develop standards and methodologies

	procedures holder, VVBs accreditation body	- review validation and verification reports - approve carbon credits issuance
Registries	Digital platforms that track the issuance, transfer, and retirement of carbon credits	- create, hold, transfer and retire credits - register projects and track their status - hold accounts for users - keep records and historical information for all transactions - block registering credits already listed in another registry, to avoid double counting. - provide public access to project and credit data
Trading platform	Connects buyers and sellers	- enables transactions - facilitates settlement - enables price discovery and transaction confidentiality - supports automation
Brokerage firms	Act as agent between buyers and sellers	- facilitate buying and selling on stock exchanges - manage transactions on behalf of sellers and buyers
Credit Buyers	Purchase credits to offset emissions or meet sustainability goals	- use credits for voluntary or compliance goals

What steps need to be taken?

Main steps of the carbon credits issuance process
(based on procedures of major carbon crediting programmes)

1. Project Concept & Methodology Selection

- Identification of the type of project (e.g., renewable energy, forestry, waste management).
- Selection of an applicable methodology.
- Preliminary assessment of eligibility and potential impacts.

2. Stakeholder Engagement

- Stakeholder consultations (optional, except for Gold Standard).
- Addressing environmental and social safeguards.
- Documenting feedback from stakeholders and mitigation measures.

3. Project Design Documentation preparation

- Preparation of a **Project Design Document (PDD)** including:
  - Baseline scenario
  - Emission reduction calculations
  - Monitoring plan
  - Sustainable development contributions (required by Gold Standard)

4. Preliminary Review & Listing

- Project is submitted to the Standard body for initial review.
- Upon successful review, the project is listed
  - For VCS: 30-day public comment period is mandatory.

5. Validation by accredited VVB

- VVB assesses the project design against the selected standard.
- Validation report is submitted to the Standard body for approval.

6. Design review / Registration

- Upon successful validation:
  - Gold Standard: Project receives “Certified Design” status.
  - VCS: Project is officially registered.

7. Implementation & Monitoring

- Implementation of the project as per the approved design.
- Performance monitoring and collecting data on GHG reductions and co-benefits. Project developer prepares a **Monitoring Report** detailing actual outcomes.

8. Verification of results

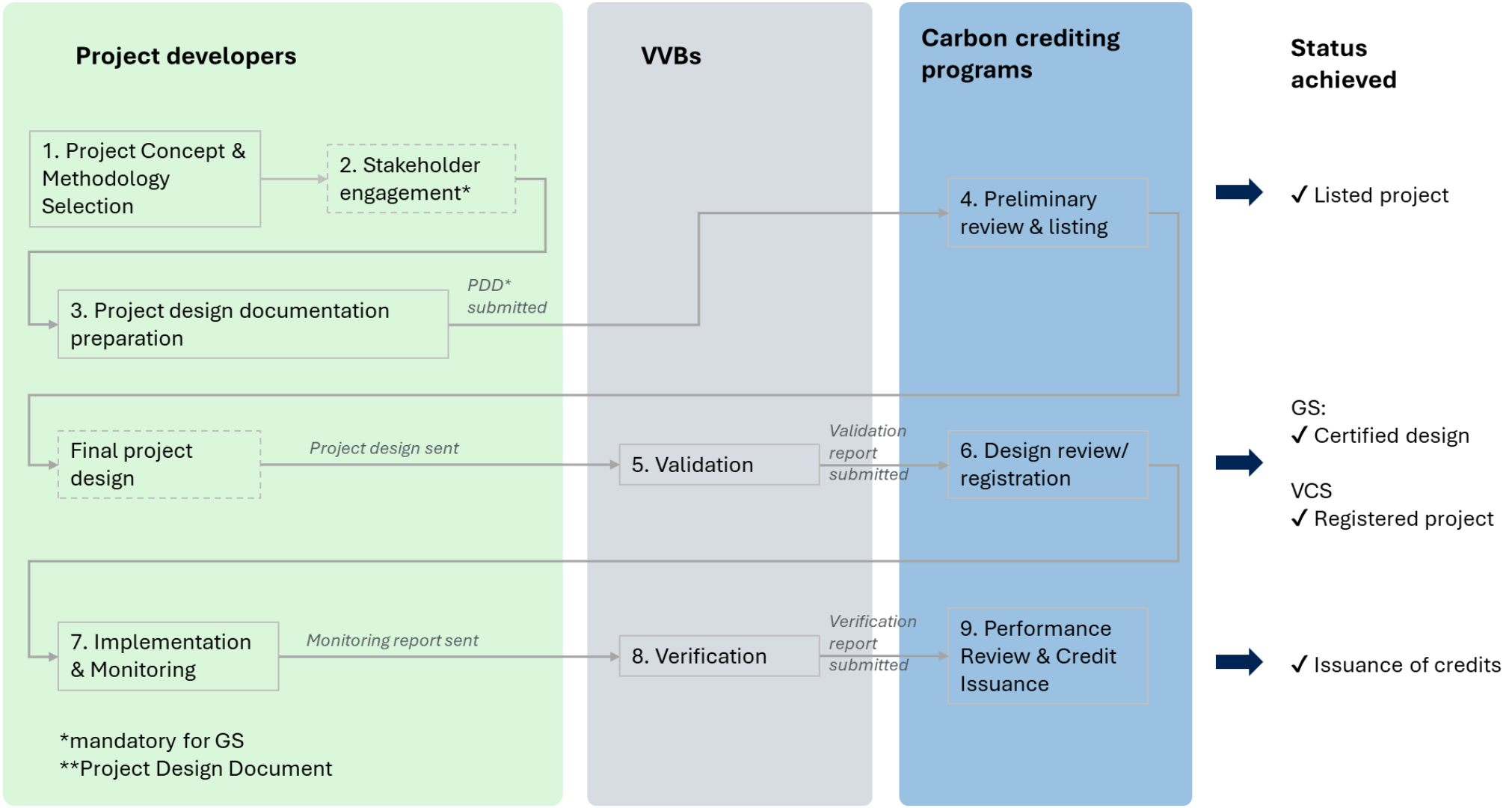
- VVB conducts verification of reported data and impacts.
  - GS: Verification must be conducted at least once within the five-year period, with the initial verification completed within two years of the project implementation date or design approval date.

- Verification report is submitted for the Standard body review.

9. Performance Review & Credit Issuance

Once performance review is successful, credits are issued into a respective Registry account.

Figure 4.1. Main steps of certification process



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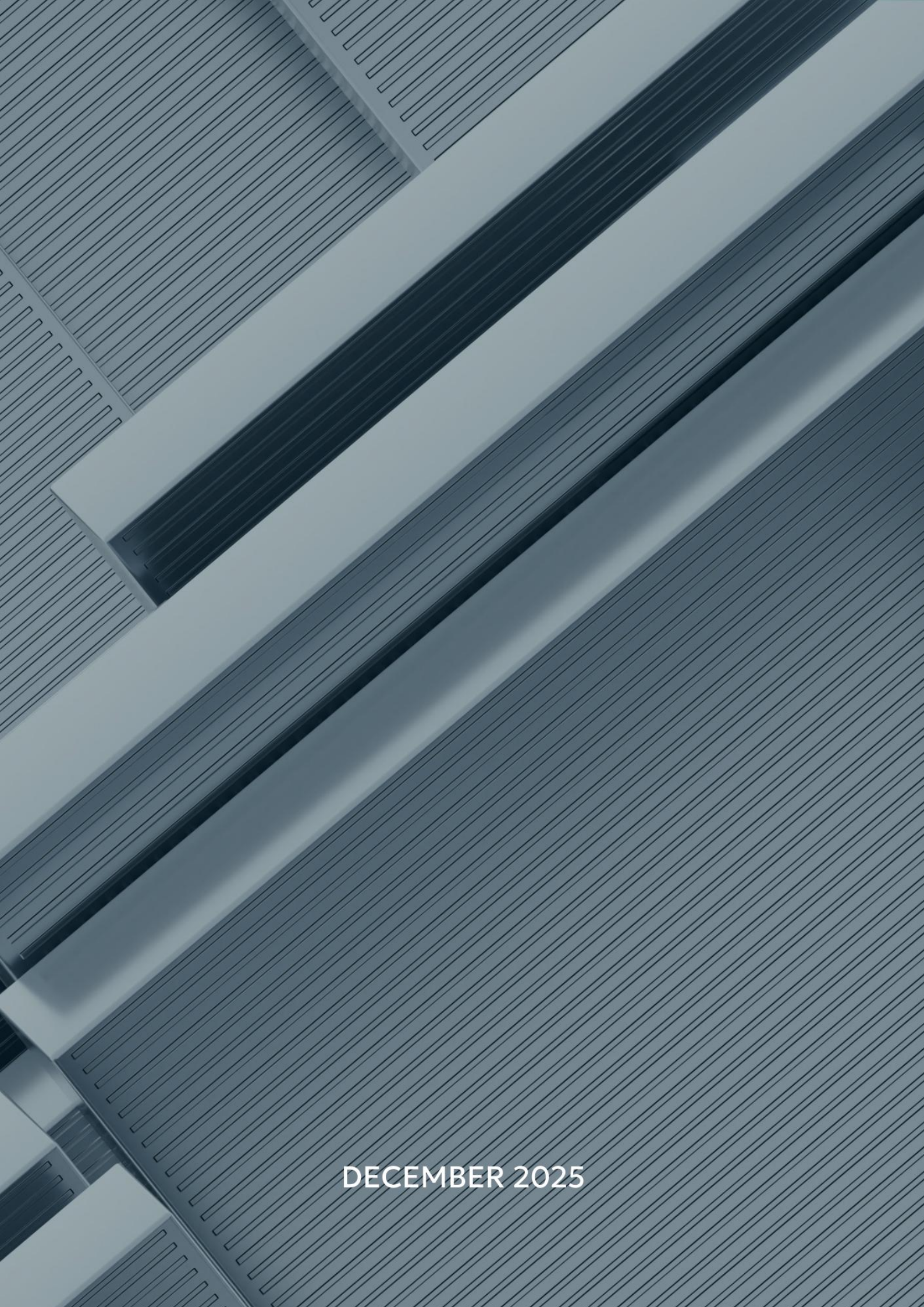

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