Center on Regulation and Markets at BROOKINGS

MAY 2026

INTEGRATING NORTH AMERICAN CARBON CREDIT MARKETS

PROSPECTS AND RECOMMENDATIONS

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Key takeaways

U.S. policymakers should support the development and integration of compliance and voluntary carbon credit markets (i.e., alignment around common infrastructure, standards, and governance mechanisms), because:

- Alignment around common governance, standards, and infrastructure could help to develop voluntary carbon markets to serve current and future policy objectives.
- Current markets are unnecessarily fragmented in ways that make them less efficient, less transparent, and less reliable than they could be if they were built on common foundations.

Supportive policies should focus on strengthening North American carbon credit markets, including through:

- Supporting the development of common market infrastructure
- Enhancing the supply of high-quality carbon credits
- Establishing government-administered voluntary carbon credit programs
- Supporting carbon credit buyers' coalitions and investment vehicles
- Expanding guidance and providing recognition for responsible carbon credit use

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DISCLOSURES

Broekhoff advises Calyx Global and the ICVCM under paid contracts with his employer, the Stockholm Environment Institute. These organizations did not review this work prior to publication. The analysis and conclusions presented here are solely those of the authors.

This paper is part of a workstream made possible by support from Bloomberg Philanthropies. The views expressed in this report are those of its authors and do not represent the views of Bloomberg Philanthropies, their officers, or employees.

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Introduction

Carbon credit markets are highly diverse. Globally, at least 24 government-administered programs, including nine in North America, allow carbon credits to be used as instruments for complying with greenhouse gas regulations (ICAP 2025). In addition, over a dozen independent programs issue carbon credits primarily for voluntary buyers, e.g., companies voluntarily pursuing "net zero" or carbon neutrality goals. Each program issues uniquely denominated credits, making for fragmented markets.

This diversity of carbon credit programs reflects diverse objectives. Government-administered carbon crediting programs are designed around specific policy priorities. Multiple U.S. states, for example, administer carbon crediting programs in conjunction with regulatory cap-and-trade systems. Within these systems, carbon credits help to contain costs—by enabling the use of low-cost mitigation options outside capped emissions sectors—while ensuring the achievement of emission reduction goals.[1] They also help to channel investment into specific sectors and activities. Most programs in North America, for example, target just a handful of domestic project types, including forestry, methane capture and destruction, and industrial gas destruction (CARB, n.d.-a; Department of Ecology, n.d.; MELCCFP 2026).

Independent programs, by contrast, serve distinct segments of the voluntary market. These programs are more geographically diverse, with several programs operating globally, not just in North America. They tend to be more experimental, incorporating a wider array of project types (e.g., engineered and nature-based removals, energy efficiency, renewable energy, and agriculture and land use projects) and orienting their activities towards the preferences of corporate voluntary buyers.

Despite these differences, government and independent programs overlap in notable ways. Regulators in California and Washington state, for example, base their carbon crediting standards on those developed by independent programs like the Climate Action Reserve (Box 1). Some voluntary carbon credit buyers have chosen to purchase and retire California compliance credits to offset their emissions (Lithgow 2023). And lawmakers in multiple states have sought to leverage voluntary markets to support in-state policy goals, such as funding forest management and regenerative agriculture activities (Oklahoma SB-1569 2024; Maryland SB-348 2022).

The potential for these markets to serve common purposes, both regulatory and voluntary, suggests the possibility for greater integration. While different programs serve various policy objectives and the demands of different buyers, current markets are unnecessarily fragmented in ways that make them less efficient, less transparent, and less reliable than they could be if they were built on common foundations. Registry systems underpinning carbon credit transactions, for example, are operated independently by each program and lack interoperability. Programs differ in their governance structures, legal definitions, auditing requirements, assurance mechanisms, and information security measures. Standardizing these program elements and creating a common infrastructure—including standard practices for information disclosure—could help reduce transaction costs, allow carbon credit markets to operate more efficiently, and provide a foundation for them to grow.

Further integration could be achieved through greater government support for the voluntary carbon market. Various federal and state initiatives have already sought to harness voluntary demand for carbon credits to serve specific policy objectives. These initiatives could be further expanded to create pathways for integration of independently issued credits into future regulatory frameworks. Should the U.S. government adopt a carbon fee on imported goods, for example—like the EU's carbon border adjustment mechanism (CBAM)—carbon credits issued by independent crediting programs could serve as an off-the-shelf compliance option. To move in this direction, however, U.S. policymakers should strengthen current voluntary markets to address persistent governance and quality shortcomings and to support sustained demand.

This brief recommends specific policy approaches that could be pursued—at federal and/or state levels—to create a common infrastructure for North American carbon credit markets and support the further development of voluntary markets with an eye towards future integration.

Overview of North American carbon markets

In the United States, carbon credit markets operate under multiple state-run compliance programs, most prominently the California-Quebec cap-and-trade program, but also under the Regional Greenhouse Gas Initiative (RGGI) and Washington state's recently enacted cap-and-invest program. Canada and Mexico operate various regulatory carbon crediting programs at both federal and state/provincial levels. Multiple independent programs also operate in North America, including ACR, the Climate Action Reserve, the Gold Standard, Isometric, Plan Vivo, Puro.earth, Verra, and others.

The largest compliance market in the U.S. is California's cap-and-trade system, which regulates roughly 76% of the state's emissions (ICAP 2025). Emitters can retire carbon credits to cover up to 6% of their regulated emissions. Since the program began in 2012, California companies have surrendered over 160 million carbon credits to meet their compliance obligations (CARB 2025; ICAP 2025).

To generate carbon credits for use in California's cap-and-trade system, projects must be located in the U.S. and follow one of six methodologies designed by California's air-quality regulator.[2] California has enlisted two independent crediting programs, the American Carbon Registry (ACR) and the Climate Action Reserve (CAR), to help screen eligible projects and review verification reports, with regulators making final decisions about registration and credit issuance. California's cap-and-trade system is linked with a similar system in Québec, allowing emitters in California to use emissions allowances and carbon credits issued in Québec and vice versa. In the past, more than 99% of the carbon credits used in the system have been issued by California's air quality regulator (CARB 2025).

In 2023, Washington state operationalized its cap-and-invest program, which similarly allows emitters to fulfill up to 8% of their compliance obligations with carbon credits (Department of Ecology, n.d.). Washington's system builds on the same crediting infrastructure as California's, allowing project developers to produce credits using four slightly modified versions of California's crediting methodologies (ICAP 2025). Washington's system also relies on ACR and CAR for administrative functions. Unlike in other systems, Washington employs the unique approach of placing carbon credits "under" its emissions cap. This means that for every carbon credit issued for compliance, the number of emissions allowances is reduced by one. This is intended to address environmental integrity concerns by ensuring that carbon credits can't increase the total volume of emissions allowed under the system.

On the East Coast, the Regional Greenhouse Gas Initiative (RGGI) was created in 2009 as a cap-and-trade system for power plant emissions in eight states (ICAP 2025). The system permits the use of carbon credits generated from landfill gas destruction, forestry, and agricultural projects. To date, only a single offset project has been approved (ICAP 2025).

Outside of the U.S., Canada and Mexico have federal emissions trading systems that allow regulated entities to surrender carbon credits generated from government-administered programs. Within Canada, the provinces of Alberta, British Columbia, and Québec have introduced their own emissions trading systems to substitute for the federal system, all of which allow the use of carbon credits.

In addition to these regulatory programs, at least 256 companies in the U.S. and 24 in Canada publicly disclosed purchasing carbon credits for use towards voluntary targets in 2023 (Wetterberg et al. 2025). On the supply side, mitigation projects in the U.S. supplied nearly 48 million credits to the voluntary market in 2025 (author's calculations based on Haya et al. 2025). ACR and CAR collectively certified 95% of the independent credits issued last year in the U.S. The third largest issuer was Verra, which is headquartered in Washington, D.C., but primarily certifies credits internationally (author's calculations based on Haya et al. 2025).

BOX 1. THE CALIFORNIA CLIMATE ACTION RESERVE

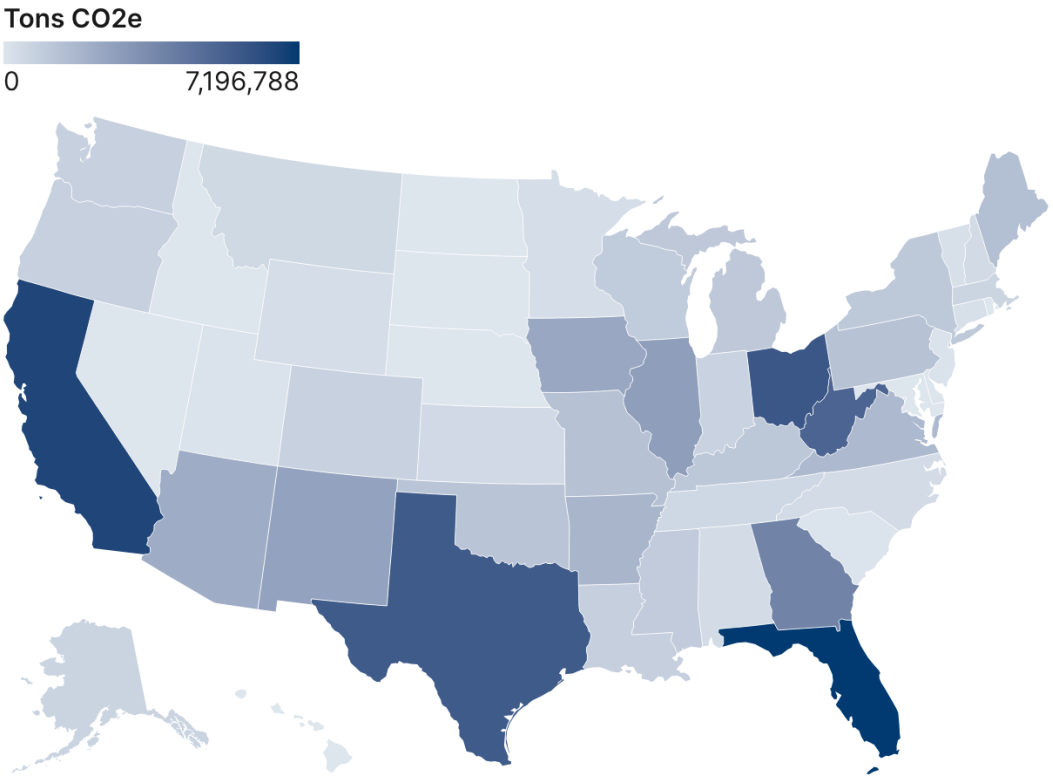
The Climate Action Reserve is one of the largest carbon crediting programs in North America serving the voluntary carbon market. CAR began as an offshoot of the California Climate Action Registry (CCAR), an independent program established in 2001 by the California State Legislature. CCAR served as a registry for companies to quantify and report on voluntary efforts to reduce their corporate greenhouse gas emissions. CAR took the lead in developing methodologies to quantify enhanced removals or avoided emissions from various types of mitigation projects (external to a company's operations). In 2008, the Climate Action Reserve split from the CCAR to focus on establishing a voluntary carbon crediting program. Standards developed under CAR's program ultimately served as the basis for regulatory offsetting protocols under California's cap-and-trade program (initiated in 2012), and multiple projects registered with CAR were able to generate "Early Action Offset Credits" and transition into the regulatory program. CAR continues to provide project registration and issuance services on behalf of the California regulatory program (Carbon Offset Guide, n.d.).

Since its founding, CAR has issued over 160 million carbon credits for both compliance and voluntary use (CAR 2021). It has also expanded internationally to certify projects in Mexico, Canada, and other countries.

FIGURE 1

Carbon credit issuance by state, 2025

Number of credits issued to projects located in each state



Source: Berkeley Carbon Trading Project

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TABLE 1

Biden administration action on voluntary carbon markets

Action	Summary	Current Status
CFTC carbon credit derivatives guidance	Issued guidance on trading carbon credit derivative contracts in September 2024. Would require derivatives exchanges to consider the additionality, permanence, and accurate quantification of carbon credits when designing derivative contracts.	Withdrawn
SEC Climate Disclosure Rule	Adopted a rule in March 2024 requiring public companies to disclose any use of carbon offsets as a component of their plan to achieve climate targets. Companies would be required to disclose: the quantity of offsets used; the source of the offsets; a description and location of the projects and their registry listings; and the cost of the offsets.	Suspended
USDA Greenhouse Gas Technical Assistance Provider and Third-Party Verifier Program	Authorized in 2023 to develop a program to enable farmers, ranchers, and forest landowners to participate in voluntary carbon markets (VCMs).	Implementation progress unclear
Treasury Principles for Net Zero Financing and Investing	Provided voluntary guidance for financial institutions to disclose the role of carbon credits in climate commitments.	Published, not legally binding
Joint Statement of Policy Principles for Responsible Participation in Voluntary Carbon Markets	Established seven principles for responsible participation: (1) credits should meet credible quality standards; (2) credits should avoid harm; (3) companies should prioritize reducing value-chain emissions; (4) buyers should disclose the nature of retired credits; (5) public claims should be accurate; (6) market participants should enhance integrity; (7) barriers to entry should be lowered.	Published, not legally binding
Department of Energy (DOE) Carbon Dioxide Removal Purchase Pilot Prize	Developed a program in 2023 for institutions to compete for the opportunity to sell carbon removal credits to the DOE.	Unclear
Department of State (DOS) Energy Transition Accelerator (ETA) and LEAF Coalition	Together with private philanthropies, the DOS supported two initiatives designed to scale up carbon credit purchases in pursuit of sectoral transformations. The ETA was designed as a vehicle for investing in “energy transition credits” in developing countries (primarily supporting retirement of coal-fired power plants). The LEAF Coalition supports large-volume purchases of carbon credits from jurisdiction-scale programs that slow and halt tropical deforestation.	ETA: inactive LEAF Coalition: active

SOURCE: U.S. Government Accountability Office [GAO] 2025

Under the Biden administration, the federal government expanded its role in guiding the voluntary carbon market with a variety of guidance, rules, and initiatives promulgated by various agencies (see Table 1, above). These actions include Commodity Futures Trading Commission (CFTC) guidance on carbon credit derivatives contracts and the development of a Greenhouse Gas Technical Assistance Program by the U.S. Department of Agriculture (USDA). Some measures, such as the Securities and Exchange Commission's (SEC's) Climate Disclosure Rule have been abandoned under the second Trump administration, while others remain in an unclear state of implementation.

The Trump administration has positioned itself as largely opposed to climate action and has undertaken a widespread rollback of federal climate policy, including ending the Environmental Protection Agency's (EPA's) Greenhouse Gas Reporting Program, removing emissions limits for power plants and vehicles, and withdrawing the U.S. from the Paris Agreement and United Nations Framework Convention on Climate Change (Center on Regulation and Markets 2026; Trump 2026).

Given these actions, it is unlikely that the federal government will play an active role in supporting or regulating the voluntary carbon market under the current Administration. The withdrawal from the Paris Agreement will also prevent the U.S. from fully participating in the international carbon markets established under Article 6 of the treaty.[3]

Alongside federal efforts, an increasing number of states, including California, Utah, and Alaska, have proposed or enacted legislation aimed at regulating voluntary markets or promoting the development of voluntary supply. However, not all states favor carbon project development. States with prominent timber industries, like West Virginia and New Hampshire, have introduced legislation to prevent the development of forest carbon projects with the goal of protecting employment and tax revenue. Meanwhile, in Utah, revenue generated from the violation of carbon credit reporting requirements has been earmarked specifically to fund litigation opposing federal climate regulation. Table 2 contains a list of proposed or enacted state legislation.

TABLE 2

State-level legislation on voluntary carbon markets

Legislation	Summary	Current Status
California—AB-1305—Voluntary Carbon Market Disclosures Act	Requires sellers of carbon credits in CA to disclose project details including methodology, location, and start date. Entities making net-zero/carbon neutrality claims must also disclose documentation of how the claim was determined accurate (AB-1305 2023).	Enacted into law
Alaska—SB-48—Carbon Offset Program	Allows the state to use its lands for carbon management projects and to lease state land for carbon management (SB-48 2023).	Enacted into law
Maryland—SB-348—Conservation Finance Act	Authorizes the Department of Agriculture and Department of Natural Resources to partner with private-sector organizations to increase access to private and public land enrollment in carbon crediting programs and assist landowners with aggregating projects to make them more saleable (SB-348 2022).	Enacted into law

TABLE 2 CONT.

Legislation	Summary	Current Status
Utah—HB-185—Carbon Credit Amendments	Requires state entities to report carbon credit transaction details to the state auditor. Funds generated from judgments or settlements related to violations of carbon credit sale or marketing laws are set aside in a Carbon Credit Litigation Fund. The fund is for use by the attorney general to oppose a federal cap-and-trade system or federal emissions reporting requirement, fight greenhouse gas emissions claims against the state, resist climate remediation programs, and recover carbon credits or profits lost through fraudulent credit sales (HB-185 2026).	Enacted into law
Oklahoma–SB-1569–Carbon Sequestration Enhancement Act	Establishes a "carbon sequestration certification program" to develop standards and issue credits to projects in OK (SB-1569 2024).	Enacted into law
New Hampshire—HB-123—Establishing a Moratorium on Carbon Sequestration	Establishes a temporary moratorium on enrollment of timber parcels over 500 acres into carbon crediting programs. Commissions a study to assess the impact of carbon crediting projects on the logging industry, state and local timber tax revenue, and the prospect of taxing purchasers of carbon credits produced in NH. Provisions expire November 1, 2027 (HB-123 2025).	Enacted into law
West Virginia—SB-118—Establishment of a Forest Carbon Registry	SB-118 would establish a Forest Carbon Registry to track all forest carbon crediting agreements and projects on WV forestland (SB-118 2026).	Introduced, in committee
West Virginia—SB-281—Relating to Real Property, Tax, and Registration Requirements Associated With Carbon Offset Agreements	SB-281 (now dead) would have levied an excise tax equal to 50% of the carbon credit revenue for any project that "prevents economic development" or restricts the harvest of minerals or timber. Would also have voided any agreement to prevent timber or mineral harvesting for a term of more than 20 years (SB-281 2025).	Dead

Options for promoting greater market integration

The diversity of current U.S. carbon market-related programs and regulations suggests the carbon credit market is potentially robust but, at least as it stands today, segmented and inefficient. U.S. policymakers could pursue multiple strategies to promote greater integration, focusing on different segments of the existing market and involving greater or lesser degrees of government administration and oversight. Strategies could include:

- Promoting a common infrastructure for regulatory and voluntary markets
- Supporting the development of voluntary carbon credit markets through:
  - Measures that enhance the supply of high-quality carbon credits
  - Measures that enhance voluntary demand for carbon credits

PROMOTING A COMMON MARKET INFRASTRUCTURE

A significant challenge for participants in carbon credit markets is the fragmentation of the governance and information systems. Crediting programs use different governance models with inconsistent approaches to managing potential conflicts of interest, and they apply different methods and standards for accrediting auditors. Programs also rely on registry systems that differ in their information security arrangements and the types and formats of information they make available (Carbon Markets Infrastructure Working Group [CMI WG] 2025a). U.S. policymakers could help support carbon credit markets by strengthening and promoting the harmonization of their underlying infrastructure.

In addition, policymakers could bolster both regulatory and independent carbon crediting programs by establishing uniform, market-wide mechanisms for guaranteeing the permanence of the mitigation outcomes (i.e., avoided emissions or enhanced removals) that underlie carbon credits.

Standardize terminologies, roles, and responsibilities for carbon market actors

Carbon crediting markets rely on a common set of processes and functions for their operation, including methodology development, monitoring and reporting, validation and verification, and registry operations. Crediting programs, however—including both regulatory and independent programs—allocate and manage these functions in different ways. In addition, they frequently use different terms to refer to the same, or similar, functions (e.g., what it means to either "cancel" or "retire" a credit). This can pose a barrier to market-wide harmonization. More seriously, improper (or imprudent) allocation of roles and oversight functions can pose integrity risks from conflicts of interest. To reduce conflicts of interest, the World Bank's Carbon Markets Infrastructure Working Group (CMI WG) endorses governance models where crediting programs:

- Structurally separate registry operations and certification decisions
- Adopt neutral revenue models that are decoupled from credit issuance volumes or market prices
- Ensure independence for accreditation and auditing functions
- Perform regular oversight of auditors and rotate review teams
- Impose strict conflict disclosure requirements and clear mitigation protocols (CMI WG 2025b)

Most regulatory crediting programs in North America already operate in accordance with these recommendations. U.S. policymakers could require or encourage independent crediting programs to adopt the same measures and establish clear legal definitions of core market functions and terms, in line with existing regulatory programs.

Accredit auditors

An important governance function for carbon crediting programs is to ensure that projects are subject to robust validation and verification by independent auditors. Existing carbon crediting programs typically have standards for reviewing the competency of auditors, approving or accrediting them, and reviewing their performance (Partnership for Market Readiness 2021). Government regulators could help to standardize the process of auditor accreditation, ensuring that these bodies meet common standards for capacities and competency across North American compliance and voluntary markets.

Promote transaction integrity and information security measures

A robust carbon credit market requires safeguards against fraud, misconduct, and unethical behavior. Currently, however, carbon crediting programs differ in their standards and implementation capacity related to Know Your Customer (KYC), Anti-Money Laundering (AML), and Anti-Bribery and Anti-Corruption (ABAC) measures. The CMI WG has identified multiple ways to bolster these capacities, including through government regulation and oversight (CMI WG 2025d). U.S. policymakers could contribute to such efforts by setting legal and regulatory requirements, issuing licenses, overseeing examinations and enforcement, imposing penalties, coordinating data sharing, and convening crediting programs and other market actors to implement common policies (CMI WG 2025d).

Related to transaction integrity is the need for strong information security. Market confidence depends on registries having secure IT systems and governance systems to ensure proper handling and protection of data. U.S. policymakers could encourage secure information infrastructure through regulation and/or through the development and operation of integrated registry systems serving multiple market segments (CMI WG 2025c).

U.S. policymakers could also bolster market integrity through financial regulations, including by defining the legal status of carbon credits and reinstating guidance on carbon credit derivative contracts (see Table 1, above).

Promote registry interoperability and integration

In today's carbon credit market, a variety of third-party exchanges—including the Intercontinental Exchange (ICE), Xpansiv, AirCarbon Exchange (ACX), and Climate Impact X—provide platforms on which carbon credits from different registries can be listed for sale and where transactions can be initiated (which are then executed within underlying registries). However, most registries are not strictly interoperable, and the lack of uniform data infrastructure impedes liquidity and could be an obstacle to future market growth and integration (e.g., incorporating credits issued by independent programs into regulatory compliance programs).

U.S. policymakers could strengthen existing market infrastructure by promoting the development of a common data platform, where information on carbon credits from different registries—including price, transaction, and project attribute data—can be made available in a standardized format. The World Bank is supporting the development of such a platform internationally, called the Climate Action Data Trust (CAD) (Box 2). U.S. policymakers could enable the development of a parallel platform for North America with the capacity to integrate with international systems like CAD.

BOX 2. THE CLIMATE ACTION DATA TRUST

The Climate Action Data Trust is an initiative to create a unified, decentralized, blockchain-based metadata platform to aggregate and harmonize data from different carbon credit registries. The platform contains data on project locations, methodologies, developers, validation bodies, and credit issuances. The CAD has thus far connected with nine independent registries, the UN's Clean Development Mechanism, and the national registries of Switzerland and Bhutan (CAD, n.d.).

Establish market-wide mechanisms for ensuring permanence

If carbon credits are used to offset emissions, they must be backed by permanent mitigation. If the carbon stored by a project is later released (back) to the atmosphere—e.g., if a wildfire destroys trees that are part of a forest management or reforestation project—this "reversal" of carbon removal must be compensated. To ensure permanence, most crediting programs implement ongoing monitoring and compensation procedures, including through insurance mechanisms such as buffer reserves. However, different programs have adopted different requirements with respect to length of time over which reversals must be compensated and the volume of credits that must be set aside in buffer reserves. Even compliance programs have been critiqued for maintaining insufficient reserves (Badgley, Chay, et al. 2022). Furthermore, each program manages reversal risk and compensation separately, leading to potential inefficiencies.

Government policymakers could help bolster existing market infrastructure for maintaining permanence in several ways. First, they could prescribe minimum durations for required monitoring and compensation of reversals, ensuring that North American carbon credit markets align on common standards for "compliance grade" permanence obligations. Second, policymakers could make available data, guidance, and/or requirements related to ensuring the sufficient capitalization of buffer reserves. Third, they could provide a government-backed guarantee to compensate for reversals in scenarios where crediting program mechanisms, including buffer reserves, prove insufficient. Fourth, they could explicitly assume ongoing monitoring and compensation for reversals after minimum time commitments are met under crediting programs—ensuring permanence commitments are maintained indefinitely or until they are no longer needed.

SUPPORTING THE DEVELOPMENT OF VOLUNTARY CARBON CREDIT MARKETS

There are multiple ways that U.S. policymakers could support voluntary carbon credit markets with an eye towards developing these markets to serve current and future policy objectives. Measures should be adopted to enhance both supply and demand in these markets.

ENHANCE SUPPLY OF HIGH-QUALITY CARBON CREDITS

Carbon credits have faced persistent concerns about their quality. A high-quality credit is one that represents mitigation that is truly additional (i.e., avoided emissions or enhanced removals that would not have occurred in the absence of a carbon credit incentive), whose magnitude (e.g., tons of CO_2 avoided) has not been over-estimated and whose effects are permanent (Broekhoff et al. 2024). High-quality credits must also be associated with activities that do not result in social or environmental harm. Unfortunately, studies have identified widespread shortcomings related to these criteria across both voluntary and compliance markets (Probst et al. 2024; Macintosh et al. 2025; Romm et al. 2025). High-profile revelations of low-quality credits have periodically dampened voluntary market demand (Greenfield and Chingono 2024; Greenfield 2023; Oliver 2022).

Achieving perfect quality in carbon credit markets is not possible, nor is it always necessarily desirable (as aiming for perfection likely requires setting aside other desirable benefits of these markets) (Trexler et al. 2006; Salzman and Weisbach 2024; Broekhoff et al. 2026). Nevertheless, these markets may not be sustainable if quality deficits persist at levels that have been observed to date. U.S. federal and state governments could take multiple steps to bolster the quality of credits issued by independent crediting programs, complement efforts to ensure quality in compliance programs, and provide greater market confidence. By establishing "quality floors" and enhancing transparency in the voluntary market, policymakers can also provide a supportive pathway to future integration of voluntary and compliance markets, providing clarity for buyers looking to prepare for future regulation while simultaneously seeking to meet voluntary emissions targets (GAO 2025).

Ensuring that carbon credits meet minimum quality standards requires specifying and enforcing detailed methodological requirements (e.g., additionality and

quantification rules) tailored to specific types of mitigation activities. While regulators must define these requirements for compliance markets, it may be infeasible for them to comprehensively prescribe them for the voluntary market. Nevertheless, there are multiple ways in which government regulators can provide more robust oversight for voluntary markets (Gillenwater et al. 2007).

Accredit carbon crediting programs

U.S. policymakers could help set a bar for voluntary market credits by establishing a formal accreditation program for independent crediting programs. An accreditation program would work best at the federal level and would likely require (or at least benefit from) legislation designating regulatory authority over the voluntary carbon market (Shortell et al. 2026). Such a program, for example, could focus on ensuring that crediting programs have effective governance mechanisms, have rules for ensuring quality criteria are met, and meet minimum standards for transparency and oversight (Broekhoff and Spalding-Fecher 2021).

An accreditation framework could be independently established, or it could incorporate standards from existing accreditation initiatives. Examples include:

- The Integrity Council for the Voluntary Carbon Market (ICVCM) approves independent crediting programs using a comprehensive assessment framework covering governance functions and implementation capacity (ICVCM 2026).
- The International Civil Aviation Organization (ICAO) administers an accreditation framework for independent crediting programs seeking to provide compliance-eligible credits under the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) (ICAO 2024).
- The California Air Resources Board accredits independent crediting programs to help administer its compliance carbon offset program (although the focus is more on auditing and implementation capacity than on these programs' methodological requirements) (CARB, n.d.-b).

Accredit carbon crediting methodologies

A deeper level of oversight could be provided by reviewing and accrediting individual carbon crediting methodologies developed by programs for specific project types. Methodologies are where the "rubber hits the road" in ensuring that key criteria like additionality, robust quantification, and permanence are upheld. Most critiques of carbon credit quality have focused on shortcomings in individual methodologies.

Reviewing and accrediting methodologies would in essence provide a regulatory "stamp of approval" for them, indicating they meet minimum standards for ensuring quality. This could also signal their prospective suitability for use in existing or future compliance markets.

Note that the ICVCM reviews and approves methodologies developed under independent crediting programs. Government regulators could develop a parallel accreditation framework or incorporate the ICVCM's framework by reference.

Accredit carbon credit rating services

While methodologies define how quality criteria must be met for specific types of projects, there can still be considerable variability in the quality of individual projects that adhere to a methodology. Additionality tests, for example, may not be effective at screening out every non-additional project. And some methodologies allow considerable leeway in defining emissions baselines against which greenhouse gas reductions are quantified (Sanders-DeMott et al. 2025; Probst et al. 2024; Badgley, Freeman, et al. 2022).

In recent years, a variety of independent carbon credit rating services have been launched to address this challenge. These services provide paying clients with detailed assessments and quality ratings for individual projects (Wawrzynowicz et al. 2023).[4] Evidence suggests these services are already steering voluntary buyers towards higher quality credits (Berends et al. 2025; Loffler and Joshi 2025). Not all their ratings are aligned, however, and some assessment frameworks may be more robust and transparent than others (Wawrzyno-

wicz et al. 2023). As new service providers enter the market, it could be important to ensure that the rating services themselves are subject to minimum standards for credibility and transparency. Government regulators could provide an important assurance function by accrediting these rating services and ensuring they meet minimum standards. The SEC already provides similar oversight for credit rating agencies in debt markets.[5]

Establish common guidelines for ensuring environmental and social safeguards and benefits

Some projects that benefit the climate may nevertheless have negative social or (non-climate related) environmental consequences. For projects involving interventions in the land use, agriculture, and forestry sectors, it is especially important to engage with local communities, obtain free prior and informed consent, and ensure that project benefits are shared equitably. In a number of U.S. states, concerns about employment and revenue impacts have led to proposed legislation pausing or banning the development of land-based carbon crediting projects (see Table 2, above).

Nearly every carbon crediting program has requirements related to avoiding environmental and social harms, including stipulations that projects must adhere to relevant legal requirements. In addition, many types of crediting projects can generate positive environmental and social benefits (beyond mitigating climate change). Voluntary buyers often see value in these co-benefits, and many independent crediting programs provide frameworks for recognizing them.

That said, rules and requirements relating to avoiding harms and valuing co-benefits vary considerably among crediting programs. This variance is partly related to differences in geographic scope. Independent programs like Verra or the Gold Standard, for example, operate in multiple countries throughout the world with different governance and legal regimes. Other programs, like CAR, operate primarily in North America.

Independent oversight programs, like the ICVCM, have established frameworks for consistently and transparently assessing crediting programs' environmental and social safeguard provisions. U.S. regulators, however, could bolster such frameworks by elaborating key provisions related to safe and responsible project implementation in a U.S. domestic context, as well as providing government-backed recognition frameworks for positive environmental and social co-benefits.

Establishing government-administered voluntary carbon credit programs

The recommendations above all relate to bolstering confidence in the supply of carbon credits from existing independent programs serving the voluntary carbon market. Enhancing standards, guardrails, and governance mechanisms around these programs could provide a welcome level of assurance for market participants and help build a market infrastructure capable of serving future policy objectives, including regulatory carbon pricing or foreign pollution fee mechanisms.

Another option, however, would be for U.S. policymakers to establish one or more government-administered carbon crediting programs explicitly designed to serve voluntary demand. In this scenario, regulators could establish and operate standards, governance mechanisms, and registry systems needed to fully implement a carbon crediting program—similar to programs already administered by California and Washington regulators—but designed to serve voluntary credit buyers.

Potential advantages of such programs would be twofold. First, a government-backed crediting program could provide a high level of assurance for market participants, who could engage in the program confident that the credits generated and retired are officially recognized. Second, these programs could be designed to target specific kinds of policy objectives, such as channeling investment to mitigation projects in priority sectors (e.g., domestic agriculture and forestry or the power sector in developing countries). This in turn could lay the groundwork for incorporating such programs into future policy mechanisms (including existing North American emissions trading systems).

Examples of these types of programs in other jurisdictions include the EU's Carbon Removals and Carbon Farming (CRCF) program and the Australian Carbon Credit Unit (ACCU) scheme (see Box 3).

BOX 3. CRCF AND ACCU SCHEMES

The EU's CRCF scheme is an EU-wide certification program for carbon removal projects. The scheme entered into force in 2024 and is designed to certify credits for use in the voluntary market (Regulation EU 2024/3012 2024). The program currently allows direct air capture, biogenic emissions capture, and biochar removal projects, with methodologies for agriculture, agroforestry, peatland rewetting, afforestation, and bio-based construction products still under development (European Commission, n.d.).

Australia's ACCU scheme certifies credits for both the voluntary market and use in the Australian Safeguard Mechanism ETS. Project developers in the system also have the option to sell credits directly to the Australian government through carbon abatement contracts. Projects can be developed using 10 methodologies spanning agriculture, energy efficiency, landfill and waste, mining, oil and gas, and vegetation restoration and protection (Clean Energy Regulator 2026). Since it was developed in 2011, the program has certified over 2,800 projects and issued more than 177 million credits (World Bank 2025).

ENHANCE DEMAND FOR CARBON CREDITS

The policy options described above are focused on aligning voluntary carbon credit markets around high-quality supply, possibly targeting specific sectors, and laying a foundation for future integration with compliance markets. Equally important for the health of these markets, however, will be efforts to encourage demand. Shoring up supply could induce greater demand by bolstering the confidence of voluntary buyers and providing government-backed recognition of high-quality credits. Policymakers could further support demand through the establishment of government-approved investment vehicles and by providing guidance on responsible carbon credit use.

Support carbon credit buyers' coalitions and investment vehicles

As noted above (Table 1), the U.S. government has in the past supported large-scale "buyers' coalitions" for voluntary carbon credits, including through the Energy Transition Accelerator (ETA) and LEAF Coalition initiatives. Other prominent investment vehicles include the Frontier coalition, which targets engineered, high-durability removal activities, and Symbiosis, a coalition focused on advance market commitments for nature-based removals.[6]

A key objective of these initiatives is to pool funds to enable large-scale forward purchasing commitments for carbon credits. This helps to overcome a major financing barrier for many projects, which—without forward commitments—frequently struggle to prove to lenders and equity investors that they have a "bankable" revenue stream. Pooling funds also helps drive systemic, transformative, and/or high-value mitigation impacts that individual buyers would have trouble achieving (Axelsson et al. 2024; Coalition to Grow Carbon Markets 2025). The Frontier coalition, for example, allows smaller companies to buy into expensive, but highly durable, carbon dioxide removal projects they might not otherwise be able to afford. Similarly, the LEAF Coalition supports jurisdiction-scale efforts to preserve forests through transformative policies and programs whose benefits would be difficult to realize through individual projects.[7]

These existing initiatives support climate change mitigation activities throughout the world. Similar initiatives, however, could be developed for domestic (or North American) project activities, targeting priority sectors or activity types—for example, agriculture and forestry or engineered carbon dioxide removal projects. Different structures for these initiatives are possible, ranging from government recognition of specific investment vehicles (similar to the ETA) to incentive or reward programs. In principle, policymakers could also signal that credits procured through specific coalitions or investment vehicles may be eligible for future compliance uses.

Expanding guidance and providing recognition for responsible carbon credit use

Another strategy for enhancing voluntary demand is to provide guidance for buyers around responsible use of carbon credits and the claims they should make in conjunction with their use. Governments around the world have started to regulate voluntary use of carbon credits in different ways, including through transparency and disclosure requirements. Additional measures and guidance are needed to boost buyer confidence by making clear how they can avoid problematic claims or accusations of greenwashing.

An important first step in promoting responsible use is to require (or incentivize) transparent disclosure by companies about their use of carbon credits. California's Voluntary Carbon Market Disclosures Act, for example, requires companies using voluntary carbon credits to make net-zero, carbon neutrality, or similar claims to disclose information about the credits and the projects from which they were sourced. The SEC's (now suspended) Climate Disclosure Rule would similarly have required companies to disclose any use of carbon credits towards achieving climate targets. Around the world, similar requirements can be found in guidance from the U.K.'s Committee of Advertising Practice and the EU's Directive on Empowering Consumers for the Green Transition (CAP 2023; Directive EU 2024/825 2024).

Disclosure can incentivize responsible use of carbon credits by promoting transparency and making it easier for regulators or outside observers to hold companies accountable. By itself, however, it may discourage carbon credit use precisely because it invites increased scrutiny. To encourage growth in carbon credit markets, buyers need greater confidence about what constitutes acceptable use. U.S. policymakers could help to instill confidence by providing guidance and standards on responsible use and claims.

Globally, there is an evolving landscape of initiatives offering guidance on responsible use of carbon credits (Broekhoff et al. 2026). In the near term, U.S. policymakers may not wish to preempt any consensus emerging from these initiatives. However, they could take steps to complement and clarify guidance in ways that could bolster market confidence. Options here, both near- and long-term, include:

- Offering guidance on following a "mitigation hierarchy" with respect to using carbon credits. Following a mitigation hierarchy means, in essence, that companies should prioritize reducing greenhouse gas emissions within their own value chains before using carbon credits. Initiatives like the Science Based Targets initiative and Voluntary Carbon Markets Integrity Initiative have proposed differing interpretations of how a hierarchy should be realized in practice. U.S. policymakers could provide guidance to companies specific to the U.S. context—for example, by clarifying how and whether carbon credits could be used in conjunction with meeting sectoral decarbonization targets.
- Clearly delineating when and whether buyers are justified in making "offsetting" or "mitigation contribution" claims associated with the use of carbon credits. A related issue is what claims companies should make when using carbon credits. The key question here is whether, when seeking to achieve value chain mitigation targets, carbon credits may be used to compensate for underperformance ("offsetting"), or whether they should be portrayed as additional "contributions" to greenhouse gas mitigation, separate from value chain targets. Ambiguity over appropriate claims has dampened corporate participation in carbon credit markets to date. U.S. policymakers could help to clarify what types of claims are acceptable for domestic policy purposes.
- Providing legal definitions for terms such as "offsetting" and "net-zero." Related to clarifying appropriate claims, U.S. regulators could provide legal definitions of key terms to ensure greater accountability for corporate actors, while also ensuring appropriate claims are legally defensible, insulating them from reputational risks (GAO 2025).
- Indicating policy priorities for project activities that voluntary credit buyers could or should support. In the longer term, U.S. policymakers could help to incentivize demand by explicitly identifying priorities for carbon credit purchases, including specific types of mitigation activities or sectors for which investment is welcomed or encouraged, in line with domestic policy objectives.

Conclusion

As the variety of current laws, programs, initiatives, and market activity attests, carbon credit markets are already well-established in North America. Greater policy support for these markets, including measures to enhance their alignment and integration, could be desirable for two reasons. First, these markets are already an important vehicle for driving private sector investment in domestic and international climate change mitigation. Greater alignment and integration could improve their functioning, promote liquidity, and provide a foundation for more rapid growth. This in turn could help to realize state and federal policy goals related to carbon credit markets (see tables above).

Second, greater integration could help ensure that existing carbon credit markets are well-aligned with possible future U.S. policies and programs. Should the U.S. adopt a "foreign pollution fee" on imported goods, for example (like the EU's "carbon border adjustment mechanism," or CBAM, policy), a robust and well-functioning carbon credit market could facilitate future compliance and help advance U.S. policy goals.

Supportive policies are needed to strengthen North American carbon credit markets, align them more closely, and foster their growth. A high priority should be the development of common market infrastructure, including standardized roles for different market actors, regulations to promote greater transaction integrity and information security, and the development of common data platforms.

Federal and state governments could also take steps to support and strengthen voluntary carbon markets. These include measures to enhance the supply of high-quality carbon credits, including providing government recognition or accreditation of carbon crediting programs, standards, and rating services.

To lay the groundwork for future regulatory programs, U.S. state and federal policymakers could consider establishing government-administered voluntary carbon credit programs. The EU and Australia have already established models that could be adapted to U.S. needs. Especially when combined with the measures described above, such programs could provide a trusted foundation on which to build the voluntary markets in North America and integrate them over time with regulatory programs.

Finally, U.S. policymakers could consider measures to support sustained demand in voluntary carbon markets, including measures to enhance demand through the development of buyers' coalitions (or similar investment vehicles) and providing guidance on responsible use of carbon credits.

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Endnotes

1 Allowing the use of carbon credits for compliance in a cap-and-trade program means that total emissions from capped sources could in some cases exceed the regulatory emissions cap (since total emissions will be equal to the total number of allowances plus any carbon credits used for compliance). In principle, however, this exceedance is offset by the mitigation achieved by carbon credit projects, such that global emissions are no higher than they would have been without the use of carbon credits. This is often referred to as maintaining the "environmental integrity" of the cap-and-trade program.

2 These consist of mine methane capture, livestock biogas control, ozone depleting substance destruction, rice cultivation improvements, U.S. forestry projects, and urban forestry projects.

3 Private companies in the U.S. can still purchase Article 6 credits, but the U.S. will not be able to issue or supply credits under Article 6.

4 See https://bezerocarbon.com/; https://www.msci.com/data-and-analytics/carbon-markets/carbon-project-ratings; and https://www.sylvera.com/.

5 For carbon markets, this oversight authority might be best undertaken by a different agency, such as the EPA or DOE (Shortell et al. 2026).

6 See https://frontierclimate.com/progress and https://www.symbiosiscoalition.org/.

7 See https://www.leafcoalition.org/home.

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