

## Stagnated global carbon credit market has potentials for rejuvenation

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The carbon credit market serves as a critical mechanism for businesses and governments to offset their greenhouse gas emissions by purchasing credits representing carbon dioxide reduced or removed from the atmosphere. According to Anjos et al. (2022), carbon credit market significantly reduces global emissions by helping governments to motivate producers to uphold renewable standards to voluntarily reduce emissions. The global carbon credit market, valued at approximately USD 1.4 billion in 2024, has experienced a period of stagnation with credit demand (i.e., “retirements”) remaining flat since 2023 while average spot prices fell by 20% (MSCI, 2025). From the World Bank’s State and Trends of Carbon Pricing Dashboard, the new annual carbon credit issuances picked in 2021 and has since witnessed a downward trend (figure 1). Despite current market stagnation, there are promising indications of potential growth in the coming years, which could have significant implications for global climate change mitigation efforts.

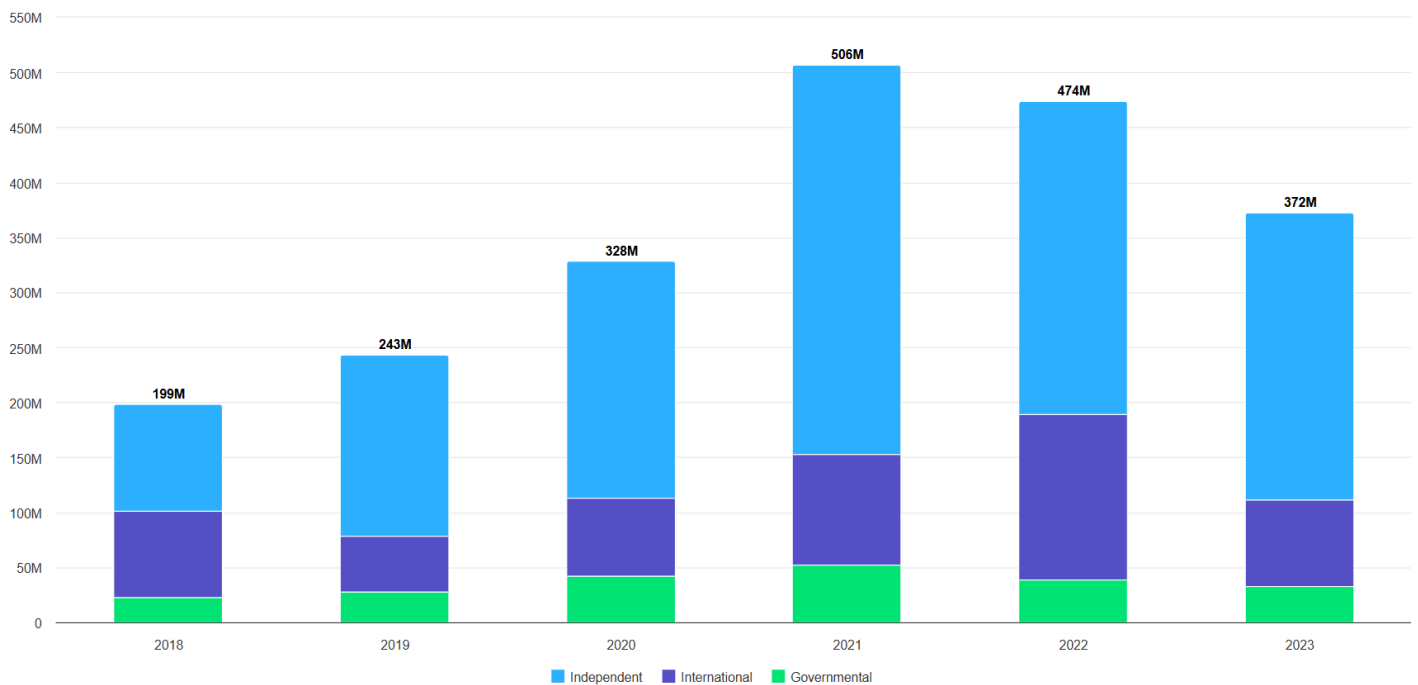


Figure 1: Trends in annual new carbon credit issuance, 2018 to 2023 (source: the World Bank)

Several interconnected factors have contributed to current stagnation in the carbon credit market including quality concerns regarding the reliability and impact of carbon credit projects, lack of urgency due to long-term climate targets set by companies, and negative publicity from fraud reports and overestimated project impact. These are coupled with price volatility, with the average price of carbon credits falling by 20% in 2024, regulatory uncertainty across different jurisdictions, limited awareness of carbon credits and their potential role in achieving climate targets, and technological barriers in the development and implementation of new carbon removal technologies. These challenges have created a complex landscape for market participants, thereby hindering the growth and effectiveness of the carbon credit system. In particular, quality concerns have eroded trust in the market as some projects have been found to overstate their carbon reduction or removal capabilities. This has led to increased scrutiny from regulators and buyers, thereby slowing down market activity.

Despite these challenges, several factors indicate potential growth in the carbon credit market. First, the increasing number of corporate climate commitments is a significant driver of potential market growth. As more companies set ambitious targets and have them validated by reputable organizations like the Science Based Targets initiative, the demand for high-quality carbon credits is likely to increase. These commitments often include short-term goals that require immediate action, potentially spurring greater engagement with the carbon credit market. Second, the approaching deadlines for 2030 climate targets set by various countries and organizations are also creating a sense of urgency. As these deadlines draw nearer, there is likely to be increased pressure on businesses and governments to accelerate their emissions reduction efforts. This could lead to a surge in demand for carbon credits as a means of bridging the gap between current emissions levels and target reductions. Third, the shift towards higher-quality credits among corporate buyers is another positive trend for the market. As awareness of the importance of credible and impactful offsetting grows, buyers are becoming more discerning in their credit selection. This trend is driving improvements in project quality and verification standards, which could help restore confidence in the market and attract new participants. Other positive signs include emerging policy developments include the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), market integrity initiatives, including Core Carbon Principles and the emergence of carbon-project-rating agencies, technological advancements in carbon capture and storage, increased investor interest in environmental, social, and governance (ESG) considerations, integration of blockchain technology for enhanced transparency and verification, and growing awareness of climate urgency.

The carbon credit markets projections by MSCI suggest significant growth potential beginning from 2025. According to MSCI’s 2025 report, the carbon credit market could reach between USD 7 billion and USD 35 billion by 2030 and by 2050, the market value could range from USD 45 billion to USD 250 billion (Figure 2). These projections highlight the enormous potential for growth in the carbon credit market over the coming decades. The wide range in the projections reflects the uncertainty surrounding factors such as technological advancements, policy developments, and the pace of corporate climate action.

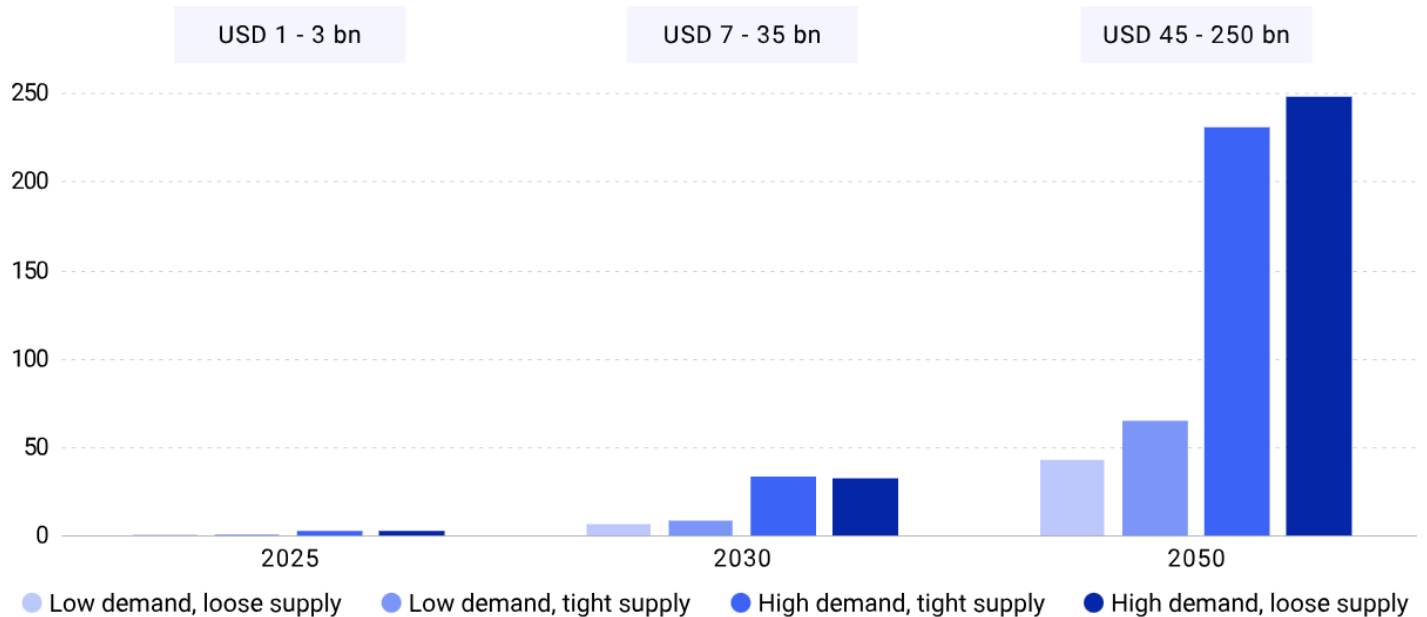


Figure 2: Potential value of carbon credit market under different scenarios (USD billion, 2024 prices)

The potential for removal credits to account for around two-thirds of the market value by 2050 underscores the expected shift towards more permanent forms of carbon dioxide removal. This trend could drive significant investment in both nature-based solutions and engineered removal technologies. The projected growth of engineered removal credits to a market value of up to USD 42 billion by 2050 highlights the potential for technological innovation to transform the carbon credit landscape. This could include advancements in direct air capture, enhanced weathering, and other emerging carbon removal technologies.

To capitalize on the potential growth of the carbon credit market and address its current challenges, several steps should be considered. Improving market integrity is crucial for restoring confidence in carbon credits. This could involve strengthening verification processes, implementing more rigorous project selection criteria, and establishing clear guidelines for measuring and reporting carbon reductions or removals. Increasing transparency through robust monitoring and verification systems is essential for building trust among market participants. This could include the use of advanced technologies such as satellite imagery, IoT sensors, and blockchain to provide real-time data on project performance and impact to ensure accurate measurement, reporting, and verification (MRV) system in the carbon credit markets (Woo et al., 2021). According to Swinkels (2024), trading of voluntary carbon credits on a new blockchain-based exchange reduces the amount of intermediation in this market. Developing clear regulations and guidelines for credit use and market participation would help create a more stable and predictable environment for buyers and sellers. This could involve harmonizing standards across jurisdictions and establishing clear rules for how carbon credits can be used to meet regulatory requirements or voluntary commitments. Enhancing risk management tools and strategies for market participants is a practical approach to achieving efficient, productive, and sustainable carbon credit markets (Xu et al., 2023).

In conclusion, while the global carbon credit market is currently experiencing stagnation, there are numerous factors indicating potential for significant growth in the coming years. By addressing current challenges and capitalizing on emerging opportunities, the carbon credit market could play a crucial role in global efforts to mitigate climate change. However, realizing this potential will require concerted effort from market participants, policymakers, and other stakeholders to improve market integrity, increase transparency, and align carbon credit activities with broader climate goals. As the urgency of climate action intensifies, the carbon credit market is poised to become an increasingly important tool in the global response to climate change, potentially growing to a multi-billion-dollar industry by mid-century.

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