

# **Unlocking Carbon Credit Opportunities for Hemp Producers (Op-Ed)**

## **Hemp Producers Eye Carbon Credit Markets as an Innovative Revenue Stream Amid Evolving Cannabis and Hemp Regulations**

As the cannabis and hemp industries continue to evolve, including recent changes through an amendment to the 2018 Farm Bill redefining “hemp,” producers are exploring innovative ways to diversify income while aligning their operations with sustainability goals. One such opportunity gaining attention is integrating carbon credit generation into hemp cultivation practices, taking advantage of the plant’s remarkable carbon sequestration capabilities.

## **Why Carbon Credits Matter for Hemp Cultivators Facing Regulatory and Market Challenges**

Hemp producers cultivating for cannabinoids such as Delta-8 THC, CBD, or other therapeutic compounds often contend with complex regulations and volatile market pricing. The revised federal definition of hemp adds another layer of complexity, prompting growers to explore alternative avenues to monetize crops. By demonstrating a qualifying end-use, producers may unlock a new revenue stream while simultaneously reducing their environmental footprint.

Hemp’s rapid growth rate and high biomass density make it especially effective at capturing carbon dioxide, forming the foundation for generating carbon offsets that can be sold in voluntary or compliance markets.

## **Hemp’s Exceptional Carbon Sequestration Capacity Positions It as a Climate-Smart Crop**

According to the Lincoln University Hemp Institute, hemp is “an ideal annual crop for carbon negative supply chains for food, feed, fiber and fuel.” The British Hemp Company estimates that each metric ton of hemp cultivated can absorb approximately 1.63 metric tons of CO<sub>2</sub>. Dr. Darshil Shah of the University of Cambridge notes that industrial hemp can sequester more carbon per hectare than forests or crops like cotton and wheat.

Unlike tree-planting offset schemes, hemp matures in four to six months, enabling multiple crop cycles per year for continuous carbon drawdown. Its deep root system locks carbon into the soil and improves soil structure, increasing long-term cultivation efficiency. For growers already employing regenerative farming methods to enhance cannabinoid yields and terpene profiles, these environmental benefits can translate into tangible financial returns through carbon credits.

# Navigating Voluntary and Compliance Carbon Credit Markets for Hemp

Hemp growers have two primary options for monetizing carbon sequestration:

- **Voluntary Markets:** Hemp cultivators can generate and sell carbon credits to companies or individuals seeking to offset emissions. Registries such as Verra and Gold Standard are developing agricultural methodologies suitable for hemp. For instance, U.S.-based Hempitecture is pursuing Verra-approved methodologies for its hemp-based construction materials.
- **Compliance Markets:** Government-regulated programs like California's Cap-and-Trade or the EU Emissions Trading System offer higher and more stable credit prices. Hemp is not yet widely included in these programs, though advocacy is growing for agricultural integration.

Each metric ton of carbon sequestered equates to one credit that companies can purchase to reduce their carbon footprint. Voluntary market credits generally command lower prices than compliance market credits, making voluntary programs an accessible entry point for hemp cultivators.

## IRS Section 45Q Tax Credits May Incentivize Hemp-Based Carbon Sequestration

IRS Section 45Q provides tax credits for CO<sub>2</sub> captured and either permanently stored or used in qualifying applications. Although initially designed for industrial operations, interpretations now suggest biological carbon sequestration, including hemp cultivation, may qualify. To comply:

- CO<sub>2</sub> captured must be measured and verified using approved protocols.
- Storage or end-use must be permanent or meet 45Q qualifications (e.g., biochar, construction materials).
- Entities must implement Monitoring, Reporting, and Verification (MRV) systems.

While intoxicating hemp used for cannabinoids may face challenges meeting 45Q requirements, voluntary carbon markets offer a near-term solution. As the new federal hemp definition takes effect, 45Q applicability may become more attractive for a broader range of hemp producers.

## Steps to Create Hemp Based Carbon Credits While Ensuring Compliance

Hemp growers seeking to turn carbon capture into tradable credits should:

1. Measure carbon sequestration using recognized methodologies such as COMET-Farm or Cool Farm Tool.
2. Partner with a carbon project developer or aggregator.
3. Register the project with a verified carbon registry.
4. Undergo third-party validation and periodic verification.
5. Maintain comprehensive documentation for ongoing compliance.

Blockchain-based systems are emerging to tokenize carbon offsets, enhancing transparency and market efficiency. Even intoxicating hemp qualifies if cultivation methods meet verifiable carbon sequestration criteria. Aligning with these strategies also strengthens marketing efforts by demonstrating environmental

stewardship to eco-conscious consumers and investors.

## **Challenges Hemp Growers Should Consider Before Entering the Carbon Market**

Despite opportunities, hemp-based carbon credits carry challenges:

- Verification and registration costs can be substantial; collaborating with other growers may reduce expenses.
- Hemp-specific methodologies remain limited, particularly for intoxicating crops.
- Federal policy ambiguities may complicate access to USDA support or tax credits for cannabis-related operations.

Nevertheless, the carbon credit landscape is rapidly maturing, positioning early-adopting hemp growers to capture both environmental and financial benefits.

## **Hemp as a Dual-Purpose Crop for Profit and Sustainability**

For hemp producers, carbon credit integration provides a pathway for long-term sustainability, market resilience, and positive brand differentiation. As carbon registries expand agriculture-friendly protocols and public awareness of climate-smart farming grows, early movers can reap both financial and reputational rewards. Aligning cultivation with carbon sequestration initiatives allows hemp growers to contribute to climate change mitigation while strengthening their bottom line.

Amy M. Rubenstein, partner in the Health Care practice at Dentons US LLP, emphasizes that combining innovation with compliance and sustainability positions hemp producers to capitalize on evolving carbon markets, benefiting both the planet and their businesses.

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