



CARBON REMOVAL AND AVOIDANCE CHECKLIST

This checklist provides a comprehensive approach to ensure holistic carbon management, keeping in mind the nuances and key aspects of both carbon removal and carbon avoidance.



Carbon removal encompasses techniques that actively sequester atmospheric CO₂, whereas **carbon avoidance** aims to mitigate potential emissions at their source. Delineating these two approaches is essential for a nuanced climate strategy. A holistic response to the climate crisis necessitates parallel investments in both mitigation and sequestration mechanisms. Together, they form the dual pillars upon which sustainable climate solutions are built.

1 UNDERSTANDING CARBON MARKETS

◆ Purpose

- To help individuals and corporations offset emissions.
- Encourage investments in projects that reduce or remove carbon.
- Facilitate carbon credit exchanges among entities.

◆ Carbon Credits

- Equate to the reduction of one tonne of carbon.
- Assign value to carbon reduction initiatives.

◆ Verified Emission Reductions (VERs)

- Independent emission reduction audits.
- Confirmation that offset projects achieve genuine impacts.
- Other terms include carbon offsets, carbon credits, and carbon offset credits.
- Common project types: reforestation, methane gas capture, forest management, fuel switching.

2 VERIFICATION

- ◆ It's crucial to authenticate that carbon reductions and removals are genuine. Review the criteria set for carbon reduction validation and ensure chosen projects align.
- ◆ Specific methodologies have been approved to measure the impact of a wide range of project types, ensuring consistency and reliability. Understand and list down the approved methodologies relevant to your projects.

Verification stands as the bedrock of trust in carbon markets. Ensuring the genuine impact of carbon offset projects, verification is a meticulous process overseen by independent third-party audits against robust standards. It's not merely about confirming the reduction or removal of emissions; it's about maintaining the integrity of a system that promises real-world environmental change. Without rigorous verification, the credibility and effectiveness of voluntary carbon markets would be undermined, risking the broader goals of global climate action.

3

MAJOR CARBON STANDARDS

- ◆ **Verified Carbon Standard (VCS):** A globally recognized standard that outlines the requirements for voluntary GHG emission reductions.
- ◆ **Climate Action Reserve (CAR):** With a focus on North America, CAR is instrumental in enhancing transparency within the voluntary carbon market.
- ◆ **Gold Standard:** Beyond verifying carbon credits, this standard ensures that the projects also contribute positively to sustainable development.
- ◆ **American Carbon Registry (ACR):** Playing a pivotal role, ACR oversees the registration and verification of various carbon offset projects.

4

THE VERIFICATION PROCESS

- ◆ Arrange third-party verification for in-depth assessment of your offset projects.
- ◆ Regularly schedule an ongoing monitoring to ensure projects consistently deliver on their promises.
- ◆ Register your emission reductions on a recognized carbon offset registry. They are deployed to prevent the double counting of emission reductions, maintaining the integrity of the system.

5

DIFFERENTIATE GHG REGISTRIES

- ◆ **Emissions Tracking Registries:** These are specialized in pinpointing emission reductions right at the source.
- ◆ **Carbon Credit Accounting Registries:** Their focus is on the ownership and subsequent transactions involving VERs, ensuring transparency at every step.

6

MODERN CARBON REMOVAL METHODS

Carbon removal methods are crucial to addressing the surplus of CO₂ in the atmosphere. While natural solutions like afforestation offer multiple ecosystem benefits, technological solutions provide options for larger-scale and quicker sequestration. An integrated approach, leveraging both natural and technological methods, can lead to more effective and sustainable results. As research advances, it's essential to prioritize methods that have positive net benefits without significant ecological or social drawbacks.

6.1

NATURAL CARBON REMOVAL METHODS

- ◆ **Afforestation and Reforestation:** Plant trees strategically in deforested regions or areas that historically didn't have forests.
- ◆ **Agroforestry:** Integrate trees into agricultural landscapes to enhance carbon storage, reduce soil erosion, and provide economic benefits from timber and non-timber products.
- ◆ **Blue Carbon Ecosystems:** Conserve and restore mangroves, salt marshes, and seagrasses. These ecosystems are effective carbon sinks and offer added advantages such as biodiversity conservation and coastal protection.
- ◆ **Afforestation and Reforestation:** Plant trees strategically in deforested regions or areas that historically didn't have forests.
- ◆ **Agroforestry:** Integrate trees into agricultural landscapes to enhance carbon storage, reduce soil erosion, and provide economic benefits from timber and non-timber products.
- ◆ **Blue Carbon Ecosystems:** Conserve and restore mangroves, salt marshes, and seagrasses. These ecosystems are effective carbon sinks and offer added advantages such as biodiversity conservation and coastal protection.
- ◆ **Biochar:** Convert organic materials into biochar by pyrolysis and incorporate it into the soil to enhance soil fertility and store carbon for centuries.
- ◆ **Peatland Restoration:** Restore drained and degraded peatlands by re-wetting them to prevent massive carbon release and preserve biodiversity.

6.2

TECHNOLOGICAL CARBON REMOVAL METHODS

- ◆ **Direct Air Capture (DAC):** Design facilities that capture CO₂ directly from the ambient air to reduce of CO₂ without the need for source emissions.
- ◆ **Enhanced Weathering:** Accelerate natural weathering processes using minerals that capture and store CO₂. to stabilize atmospheric CO₂ and enrich soils.
- ◆ **Carbon Mineralization:** Convert CO₂ into solid minerals, such as calcium or magnesium carbonates for long-term storage and potential for commercial applications.
- ◆ **Ocean Fertilization:** Introduce nutrients into the upper ocean to stimulate phytoplankton blooms. Phytoplankton absorb CO₂, but this method has controversies due to its ecological implications.

7

CARBON AVOIDANCE TACTICS

- ◆ **Transition to Renewable Energy:** Invest in and utilize solar, wind, hydro, and geothermal energy sources to reduce dependency on fossil fuels, which are primary contributors to GHG emissions.
- ◆ **Enhance Energy Efficiency:** Retrofit buildings with energy-efficient materials and upgrade to energy-efficient appliances to decrease energy consumption, leading to cost savings and reduced carbon emissions.
- ◆ **Decentralized Energy Production:** Promote the use of microgrids and home-based renewable energy systems to reduce transmission losses and empower local communities.
- ◆ **Transition to Electric Vehicles (EVs):** Support the research, production, and infrastructure for EVs to reduce exhaust emissions and dependence on oil.
- ◆ **Urban Planning for Walkability:** Design cities and communities where amenities are within walking distance to reduce the need for short vehicle trips and promote healthier lifestyles.
- ◆ **Sustainable Agriculture:** Promote farming practices like crop rotation, organic farming, and agroforestry to reduce methane and nitrous oxide emissions, enrich soil, and reduce the need for synthetic fertilizers.
- ◆ **Reduce Food Waste:** Improve storage, transportation, and consumption practices to minimize wastage to reduce methane emissions from decomposing food waste and decrease resource wastage.
- ◆ **Circular Economy:** Promote the design of products for longevity, reuse, and recycling and Reduce the carbon footprint of manufacturing and decrease waste.
- ◆ **Carbon Capture in Industries:** Incorporate carbon capture technologies in industries with high emissions and capture emissions at the source before they enter the atmosphere.
- ◆ **Eco-friendly Purchasing:** Opt for products with lower carbon footprints, sustainable materials, or eco-friendly certifications to drive market demand for sustainable products and practices.
- ◆ **Reduce, Reuse, Recycle:** Prioritize waste reduction, repurpose items, and support recycling programs to lower the environmental impact of consumption and waste.
- ◆ **Carbon Footprint Awareness:** Educate and promote understanding of personal or organizational carbon footprints to empower informed decisions and actions to reduce emissions.

Carbon removal and carbon avoidance represent two sides of the climate action coin. While carbon removal seeks to rectify past actions by actively extracting existing carbon dioxide from the atmosphere, carbon avoidance focuses on the present and future, employing strategies to prevent or minimize new emissions. Together, they embody a holistic approach: rectifying historical missteps while ensuring a sustainable trajectory for the future.

- ◆ Carbon management technologies are the linchpins in the battle against climate change, seamlessly bridging the gap between carbon removal and carbon avoidance efforts. Serving as sophisticated tools, they streamline, amplify, and refine our endeavors to curtail carbon emissions. These technologies act as the foundation for many of the previously mentioned strategies.

By leveraging platforms like the Net0 carbon management climate platform, enterprises are empowered to quantify, curtail, and communicate their carbon footprints. Recognizing that each business has unique needs and challenges, the platform customizes its approach, aligning strategies with specific corporate and industry goals. This combination of automation, AI, and bespoke solutions ensures that sustainability becomes not just an aspiration but an attainable reality for businesses.

