

The proposed methodology by the Climate Action Reserve (CAR), known as the Low-Carbon Cement Methodology, currently focuses on displacing Ordinary Portland Cement (OPC). It would be of significant benefit for CAR to consider CO₂ capture and utilization as an alternative avenue for generating carbon credits.

Carbon Resolve developed a patented process for capturing CO₂ emissions from cement kilns during clinker production and transforming the captured CO₂ into Supplementary Cementitious Materials (SCMs) through mineralization. This process can be easily scaled and requires extremely low energy consumption. Notably, the mineralization of CO₂ ensures a permanent reduction in carbon dioxide levels, leading to the creation of more valuable credits.

With the use of our process, cement plants can reduce greater than 90% of the CO₂ emissions generated during clinker production. With the successful scaling of our process, beginning in late 2023 with a 50,000 tons per year (TPY) modular process, we plan to expand to modules with capacities of 100-300,000 TPY to be rapidly deployed by 2027 to multiple locations. With industry awareness of the efficacy of our process in cement kiln CO₂ capture and mineralization into SCMs, we anticipate further expansion of our process capacity to reach 1 million metric tons per year (1MMTPY) by 2030. Our overall goal is to reduce 10% of total CO₂ emissions generated by the U.S. cement industry by 2050.

Crucially, our technology and project development and expansion are currently severely challenged due to methodology limitations involving CO₂ capture and utilization as SCMs. An opportunity to register our projects on CAR would be advantageous in reducing those challenges.

Presently, the options for methodology coverage involving CO₂ capture and utilization as (SCMs) remain extremely limited. The current coverage, as outlined in VM0043, only applies to ready-mix concrete, however, extending the coverage to other possibilities would be favorable. Due to the scarcity of methodology coverage options, certain companies are exploring the establishment of alternative registries within the carbon dioxide removal (CDR) domain, which could potentially become competitive.

Moreover, the integration of CO₂ capture and utilization holds significant appeal for major corporations like Microsoft, Stripe, and Shopify. These companies are actively seeking ways to secure credits within this realm, with the goal of being able to incorporate them into well-established registries, which currently offer only limited methodology options (e.g., VM0043).

These challenges could be effectively addressed by CAR without the need for extensive revisions. This could involve incorporating specific equations and treating CO₂ as an additional Supplementary Cementitious Material (SCMs). Furthermore, established precedents like VM0043 could be used as guidance for measuring the levels of CO₂ mineralization.

The consideration of CO₂ capture and utilization as another viable method for generating credits would be of substantial benefit for the CAR initiative. In certain cases, these credits can also generate much higher value in the market.

The opportunity to register Carbon Resolve's projects on CAR will provide an immense potential for generating up to 300,000 credits by 2027, and future opportunities for up to 1M credits by 2030.

Excluding CO₂ capture and utilization from the CAR protocol would represent a missed opportunity to support technology innovations like ours and stimulate the growth of this emerging industry.