Summary

Commercial algae production has been viewed as an ideal method for capturing carbon dioxide from industrial sources like power plants, manufacturing facilities, or even directly from the atmosphere. However, policies that support new infrastructure and technical refinements for carbon capture and utilization (CCU) have been lacking in the United States.

That began to change in 2018. The Algae Biomass Organization joined a wide coalition that worked to build bipartisan support for crucial changes to a carbon capture tax credit (known as 45Q) that previously could only be claimed by enhanced oil recovery (EOR) projects. Thanks to that effort, this credit now applies to projects that use algae, bacteria or chemical processes to capture carbon for conversion into valuable products.

The Challenge: Commercializing Carbon Utilization Technologies

Currently there are few regulations in the United States that incentivize power producers, manufacturers and other carbon dioxide sources to invest in projects that could capture CO2 for use as a feedstock.

CCU technologies that use algae or other methods could play a meaningful role in reducing emissions, but commercial success will only occur when tax policy, investment and R&D support are aligned.

The Path Forward: A Need for Proven Policy Support

Production tax credits have been successful for the growth of the wind and solar industries, but the only carbon capture credit available, known as 45Q, could only be claimed by projects engaged in enhanced oil recovery operations.

Expanding this tax credit to technologies that can transform CO2 into valuable products would boost a wide range of new CCU approaches, like algae cultivation, that can provide emitters with both economic and environmental benefits.

Taking Action: Bipartisan Support for Carbon Policy

Throughout 2017 a coalition that included the Algae Biomass Organization, the Carbon Capture Coalition, the Global CCS Institute and others came together to ask Congress for changes to the 45Q tax credit that would provide a new incentive to carbon utilization infrastructure and technology development.

Sponsors of the legislation included Democratic and Republican Senators, as well as the entire Congressional Algae Caucus in the House of Representatives.

The Outcome: A First Step Toward Carbon Utilization Infrastructure

The new legislation updating 45Q to include new carbon utilization technologies was included in a 2018 spending bill signed by President Trump. It establishes a $35 per ton tax incentive for carbon captured and recycled from power plants, industrial facilities or direct air capture using algae, bacteria or chemical processes. These changes are widely seen the first step toward building a CCU infrastructure in the US that can improve economic competitiveness, reduce carbon dioxide emissions and usher in a new source of sustainable products and services.
Algae cultivation gets a big boost with adjustments to the 45Q tax code that will allow projects using biological processes to claim a credit for every ton of CO2 they capture. The legislation specifically inserts algae into the IRS code:

Section 45Q(f)(5)(A) provides that for purposes of § 45Q, utilization of qualified carbon oxide means (i) the fixation of such qualified carbon oxide through photosynthesis or chemosynthesis, such as through the growing of algae or bacteria, (ii) the chemical conversion of such qualified carbon oxide to a material or chemical compound in which such qualified carbon oxide is securely stored, or (iii) the use of such qualified carbon oxide for any other purpose for which a commercial market exists (with the exception of use as a tertiary injectant in a qualified enhanced oil or natural gas recovery project), as determined by the Secretary.

"The first tax credit for carbon utilization is on the books. With strong bipartisan support we expect the momentum to continue."

--Mark Allen, Board Chair, Algae Biomass Organization

Join the Algae In Agriculture Coalition
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Carbon Utilization With Algae
Algae production can absorb large amounts of carbon from industrial sources to create biomass that can be processed into countless valuable products. Drop-in fuels, animal feeds, bio-plastics, and proteins for human consumption or other applications are all being made possible by a new generation of algae technologies.

$320 billion
Expected size of market for algae-based products by 2030

3.2 billion tons
CO2 mitigation potential for algae CCU by 2030

Algae in Carbon Utilization Tax Code