

Direct air capture algae cultivation

Global Algae Innovations

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Global Algae Innovations has developed low cost algae production technologies aimed at achieving commercially viable production of biofuel and protein meal. Radical advances have been designed and implemented throughout the entire process, resulting in many industry breakthroughs for large-scale algae cultivation, harvesting and processing. As a result of these innovations, the projected cost for mature for commercial scale production of algal jet and diesel fuel is \$2.50/gallon of gasoline equivalent (GGE) facilities, so the technologies are ready to be scaled. In fact, scale-up of this process is now the major impediment to development of an algal biofuels industry.

In this project, the recently developed technology for algae cultivation solely on carbon dioxide supplied through direct-air-capture will be scaled to a 12,500 gallons per year biofuel intermediate production rate. With this approach, carbon dioxide is directly absorbed from the atmosphere into the open raceways so that no separate carbon dioxide concentrating or distribution system. Direct air capture of carbon dioxide is a key technology that not only reduces the cost of algae biofuel production, but greatly increases the volume of algae biofuel that can be produced by enabling algae farms to be located anywhere.

This technology will be scaled a validated through the integrated cultivation and harvesting with full media recycle in a new cultivation facility located in Shandon, CA. The advanced cultivation and harvesting system will be installed in 2021 and then operated for 12 months to demonstrate the efficacy of the process and generate key performance parameters to validate the projected minimum fuel selling price of \$2.50/gallon with over 90% reduction in greenhouse gas emissions.

The overall project goal is to reduce the risk sufficiently to enable moving the process to pilot-scale by validating the integrated cultivation and harvesting with full media recycle at the scale of 12,500 gallons of algal oil per year. Successful completion of this project will greatly reduce the risk in moving our economical, sustainable algal biofuel process to pilot-scale and accelerate the development of a commercial algae biofuels industry by scaling this important technology.