

**Production of algae biofuel with CO<sub>2</sub> direct air capture**

## Summary for Public Release

Global Algae Innovations Inc. (Global Algae) has developed low cost algae production technologies aimed at achieving commercially viable production of biofuel and high-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. In this project, algae will be cultivated solely on CO<sub>2</sub> captured using novel Global Algae cultivation technology for direct-air-capture (DAC). With this approach, CO<sub>2</sub> is directly absorbed from the atmosphere into the open raceways so that no separate CO<sub>2</sub> concentrating, or distribution system is needed. This project will focus on increasing the productivity with DAC through improvements in operating conditions; increasing the quality of the algae through strain improvements and cultivation conditions; and increasing the value of the algae fuel and co-products through improved separations and product development. The products are algae oil for fuel, polyurethanes, and omega-3 oil; silica for diatomaceous earth applications; and protein meal for food, feed, and polymers. The objectives are to:

- (i) increase the value of algae biomass produced by 50% or more;
- (ii) obtain biomass quality with less than 10% out of specification;
- (iii) decrease the cost of DAC CO<sub>2</sub> by at 10% or more relative to conventionally supplied CO<sub>2</sub>
- (iv) demonstrate quality of biofuel and other bioproducts from algae cultivated with DAC CO<sub>2</sub>
- (v) increase the delivery of CO<sub>2</sub> through DAC and productivity by 20% or more;

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