

Innovations in Algae Cultivation

Summary for Public Release

Global Algae Innovations (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, a series of 12 innovations in cultivation methods and 3 innovations in cultivation monitoring tools will be developed to increase the productivity, robustness, and yield of our advanced cultivation systems. Additionally, a chain of test systems from laboratory-scale microplates through outdoor raceways producing kilograms of algae biomass will be developed and tested to accelerate the indoor/outdoor cycle rate and improve the translation of laboratory results to mass culture. After verification, the first phase includes development and validation of the test systems as well as initial R&D on the 15 innovations to achieve the intermediate project go/no-go goals. The second phase will utilize the best combination of innovations from the initial budget period as the base and focus on 2-3 of the innovations for optimization to achieve the final project goals and commercial implementation. The goals are to overcome the challenge in translating results between laboratory and mass cultures; and to increase algal productivity by 50%, cultivation robustness by 50% and the conversion yield by 20% while achieving cost and LCA targets.

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