

**ENHANCED PRODUCTION AND TREATMENT:
CREATING ALGAL BIOFUELS USING WASTEWATER EFFLUENT**

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Biofuels are an appealing renewable fuel substitute for petroleum-based hydrocarbons as they can readily be blended with petroleum-based fuels or used exclusively with minimal or no changes to existing engines and infrastructure. However, there are many challenges to large-scale implementation of biofuels including availability of the land, nutrients, and water resources necessary to cultivate sources for biofuel production. One potential solution is the use of nonpotable water resources such as secondary effluent from wastewater treatment plants. The resulting synergism of such a solution provides the necessary nutrients for algal growth and enhances the treatment of the effluent. Framework for development of a comparative life cycle assessment, as means to analyze economic and environmental outlook compared to other biofuels, will be presented with preliminary results.

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