Sustainable microalgae to biodiesel stochastic multi-objective supply chain model

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Abstract

Today, with increasing the need for producing renewable, economical, and environmentally friendly fuels, the role of the supply chain system for biofuels has been studied more severe than before. One of the sources of biodiesel production is algae that nowadays has become one of the most important biomass conversion resources to biodiesel. In this study, the supply chain design issue is trying to implement the supply chain in areas where have the implementation capability and create algal production fields and the biodiesel production factory in Iran. The designed model has the location capability out of 20 candidate locations for production and sending biodiesel produced from microalgae in conditions of uncertainty and with three target functions. To deal with these conditions, the stochastic model has suggested with different scenarios. According to the results, the expense of production and sending each American barrel biodiesel unit is estimated at $ 8.56 and its environmental effects, about 16.95 Kg CO_2 / GGE, and also about 1742 jobs have been created in production centers and sending the materials.

(https://biofuels.conferenceseries.com/abstract/2020/sustainable-microalgae-to-biodiesel-stochastic-multi-objective-supply-chain-model)

Biography:

Amir Hosein Esmaielpour has received his master's from the University of Semnan in Iran for industrial engineering at the age of 25, and he is currently a student of a Ph.D. in Kharazmi university in Iran. His master thesis was about the supply chain system for biodiesel produced from algae.

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