

Planning the Biofuel Logistics System in the Philippines

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Abstract

The recently passed Philippine Biofuels Act requires the mandatory blending of bioethanol and biodiesel into all gasoline and diesel products sold in the country. This paper uses a four-echelon supply chain that is optimized with respect to total costs incurred by the system. It discusses transportation policy decisions to minimize transport costs, while considering finite processing plant throughput capacities and expansion options, demand for biofuels across the various geographic provinces of the country and crop production capacity (and estimated crop availability) per province. The solution of this model determined the optimal flow of biofuels between the various demand and supply points in the supply chain and the appropriate levels of expansion for processing plants. Transportation costs were a function of data derived from a geographic information system.