LEC PARTNERS

Case Study

Evaluation of Sustainable Aviation Fuel Production

Client

Alternative Investment Fund

Project Number

22038

Team Members

Dr. Tony Cartolano
Bryan Kinderman
Glenn Farris

Summary of Client and Challenge They Faced

An alternative investment fund in the Middle East sought help evaluating an investment in sustainable aviation fuel (SAF) production. The capital would be used to modify an existing refinery for the hydrotreatment of fats and oils to produce SAF. The firm requested a preliminary techno-economic analysis to determine if a more detailed engineering study of the retrofit was warranted.

Our Approach to the Solution

A team of LEC Partners (LEC) experts was formed to evaluate the technical requirements of the SAF production, the retrofitting that would be necessary at the refinery, and the projected return on investment.

Our process engineer began by collecting information on the existing conditions in the refinery. A capital modification plan was developed to determine the retrofitting needed to enable SAF production. Following this technical analysis, LEC experts reviewed available data on similar retrofit

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With an estimate of the total cost of production including retrofitting the refinery, the projected return on investment was calculated based on commodity prices and a 20-year production span. Finally, sensitivity analyses were conducted to evaluate the impact of various project options on profitability, including feedstock selection, product mix, and various levels of government subsidies.

Client Results and Benefits

The models created by the LEC expert team showed the potential for return on investment. Based on the techno-economic analysis, the alternative investment fund decided to move forward to the next phase and conduct a more detailed engineering analysis of the retrofitting needed for sustainable aviation fuel production at the refinery.