



Lee Enterprises
Consulting

Case Study

Client

Global Asset Management Firm

Project Number

21133

Team Members

Chuck Sorenson, Richard Giles,
Greg Potter, Lew Christopher,
Tad Dritz

Due Diligence of Biodegradable Bioplastics Investment

Summary of Client and Challenge They Faced

A global asset management firm sought help to assess the scalability and commercialization of their investment target's biochemical processes to produce PHA, a biodegradable bioplastic. The investment firm sought help to conduct an evaluation of the target's two – fermentation and catalytic – PHA production processes, R&D and compounding facilities, fermentation production facility, catalytic R&D facility, and their expansion plans. Lee Enterprises Consulting (LEC) was familiar with the investment target and their operations, having assessed them twice over the past two years.

Our Approach to the Solution

LEC assembled a team of experts with experience ranging from lab-scale synthetic biology to commercial scale production of bio-based materials. We visited key R&D and production sites, as well as reviewed production data, expansion plans and other relevant documentation about the fermentation and catalytic production platforms. Our rigorous analysis included building an independent capacity model to assess validity of production forecasts.



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Client Results and Benefits

LEC evaluated key claims made by the investment target and compiled these in a comprehensive presentation. Overall, there was a mix of strong positives and important concerns (see below). LEC findings were combined with input from other consultants and the investment firm's modeling.

Positives

- Application development and compounding experience creates market pull and clear targets
- Strong team with a willing to learn attitude
- Best in class fermentation platform with room for improvement
- Fermentation production volume targets appear achievable
- Potential for significant cost saving from catalytic platform acquisition

Concerns

- COGS reductions for (existing) facility are likely overly optimistic
- Fermentation process difficult to scale
- Due to high productivity, ability to replace canola oil is questionable
- Catalytic platform is unlikely ready to scale, which puts commercial plant timeline in doubt
- CAPEX and other platform claims are impossible to confirm prior to plant site selection
- Potentially hazardous PHA dust not seriously considered enough

As a result of the detailed analysis, the investment firm was able to make a highly informed go/no-go decision on the investment. Considering the list of concerns, they ultimately decided to pass on the investment in the short-term.