R013-C: Improving the Profitability of ND Ethanol Plants with Algae
Submitted by EERC
Principal Investigator: Peter Letvin
Request for $200,000; Total Project Costs $426,550

Technical Advisor Comments

- 1 reviewer recommended fund, 1 recommended funding be considered, and 1 recommended do not fund.
- Applicant will provide a 53% match. 47% of the match is cash from DOE, and the remaining 6% is in-kind (Blue Flint, Red Trail, & Chem E).
- 1 reviewer felt the objectives were clear. The other 2 reviewers felt the overall objectives were clear, but that supporting detail was required.
    - 1 reviewer stated, "…Production of 19,000 lbs of algae per day…is not a trivial matter – that is about 3K dry tons per year and would require a typical system of 100 acres of ponds, possibly costing $2-3 million annually to operate…It is still unclear in my mind how much sugar & effluent volumes are available to sustain the heterotrophic growth…"
- In regards to the approach, 2 reviewers felt the proposal would have been strengthened with some preliminary data.
    - 1 reviewer stated, "…for a small fraction of the time & money invested in preparing this proposal a simple series of bench scale tests could have been performed to support the proposal…"
- All 3 reviewers felt more detail was needed in the methodology.
- 2 reviewers felt that if successful, the proposal could have significant impact.
- All 3 reviewers wanted more references cited.
    - 1 reviewer stated, "The key question, whether or not high-value algae can be grown heterotrophically in a cost effective manner, using ethanol plant waste streams, is given no support in the references cited…"

Technical Advisor Recommendations

Funding may be considered. The applicant did not provide Commerce with any clarification to the reviewers' comments, instead choosing to put this information in the presentation for the Council. It is possible that several of the questions raised by the reviewers will be answered to the Council's satisfaction.

The fact that all 3 reviewers had concerns about the methodology is disappointing considering that the applicant had access to the reviewers' comments from the first review. When requesting public funds, especially a large amount, the following questions should be answered:

- What are you doing with the money?
- How are you going to do it?
- Why are you going to do it?

Unfortunately, because of the lack of details regarding the approach, methodology, and literature review the "How" aspect has not been answered to the reviewers' satisfaction.

The proposal is strengthened by industry involvement. Overall, the proposal is a very interesting idea and could provide an added revenue stream to ND's ethanol plants if successful. However, the results of the review raise concerns about the probability of success.

Suggested Contingencies If Funded

- None