

CLARIFYING COMMENTS & RESPONSE TO TECHNICAL REVIEWERS' RATING SUMMARY

R009-A

Dakota Spirit AgEnergy Cellulosic Biorefinery

General Response: The application page limitation necessitated a very concise descriptive approach to our project. Time is of the essence and we are expediting project development by leveraging internal resources, state and federal assistance to make this project a reality. Application deadlines will not wait for perfect information, so we decided to apply earlier with less complete data than desired rather than to risk deferring another deadline cycle for better financial feasibility data. Already several months have passed since we submitted the NDIC Renewable Energy Council application and we continue to refine our financial feasibility model and key data components. We remain confident that this project can be economically viable given the state and federal support to help overcome the first cost premium for breaking new ground in a new industry for North Dakota.

1. Objectives:

(Reviewer 1B) The education of the general public, while not a key deliverable of the proposed scope, will be achieved through the publicity derived from regional speaking opportunities, and participation of key partners in farm shows and community meetings which are on-going.

(Reviewer 1C) The logistics of straw collection, delivery and costs and the marketing of ethanol and feed grade molasses are currently on going and not a direct part of the proposed scope of work under this application. The results, expected in October 2010, will be incorporated in the overall financial model and subsequent development work.

2. Achievability with proposed time & budget:

(Reviewer 1A) Much, but not all of the work is being conducted by Great River Energy and Inbicon staff. We will need to hire an engineering firm to design and price the "balance of plant" components including: biomass logistics, conventional fermentation & distillation and material handling for feedstock and product delivery.

3. Methodology:

(Reviewer 1A) The prior "Feasibility Study of Biomass Supply" determined there was adequate supply of wheat straw and corn stover within a 50 mile economic delivery radius at a delivered price around \$45/bone dry ton (BDT). Based on this foundation work, we now need to take a closer look to determine the specific transportation distances to provide 1,2,3 and 4 times our annual requirements, which affects cost of goods. The page limit precluded a more thorough recap of the initial feasibility study.

(Reviewer 1C) A financial feasibility model is currently under development and refinement. Consultants have been retained to provide independent verification of feedstock costs and market value of product streams.

4. Scientific and technical contribution:

(Reviewer 1) While the core conversion technology and biomass collection, harvest, storage and transportation (CHST) exist in Denmark today, additional work and demonstration is required to adapt these systems to North Dakota. The first installation is high risk and expensive as we ascertain what works, what doesn't and what changes will be required for our operating environment.

5. (Reviewer 1A and 1C) Current research and published literature doesn't directly relate to the specific engineering proposed to advance the Inbicon biomass refinery for the Upper Midwest. We have evaluated other technologies, and believe that Inbicon's technology (especially feedstock flexibility with purified lignin as a product stream and overall thermal requirements) is the furthest along and best suited for the Spiritwood site. Iogen, Lignol, Abengoa, POET, Mascoma, Coskata, Range Fuels and Blue Fire Ethanol were each approached for this opportunity but did not have significant steam requirements or were not in a position to consider the specific location.
6. (All) We are committed to bringing on additional experienced project partners with to expand our project related expertise. We are extremely pleased that Jeff Zueger of Blue Flint Ethanol has joined the development team bringing significant ethanol operating experience and product marketing expertise.
7. Milestone Chart (see attachment)
10. Our financial model is being developed in-house by GRE staff with \$25,000 budgeted for third party review of the model and the underlying assumptions.

Section C

(Reviewer 1A) The value of the molasses to feed and higher value industrial uses is currently being investigated by independent consultants under a separate scope of work. We believe that having multiple markets for each of the byproduct streams is a strength of our business model. Industrial uses for molasses and lignin are not well established and will take time and effort to identify and value.

The results of the prior feedstock study ("Feasibility Study of a Biomass Supply for the Spiritwood Industrial Park) are publicly available on GRE's website (http://www.greatriverenergy.com/makeelectricity/biomass_feasibility_rpt.pdf) and were not repeated or summarized due to application space limitations.

Inbicon's demonstration plant financial model is being used at a high level to identify operating efficiencies and costs. The total installed capital cost is of limited value because it is a demonstration scale and a showcase for their technology. The feedstock and energy costs are not relevant due to specific mandates and the higher cost of energy in Europe.

We need to leverage federal and state funding support to help us overcome the first cost premiums for introducing new technology. We appreciate the work of the North Dakota Industrial Commission and the Renewable Energy Council to bring new industries to North Dakota. Dakota Spirit AgEnergy is good for North Dakota, the community and for Great River Energy's Spiritwood Station.

