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## C O N F I D E N T I A L

Saturday, December 26, 2009

Partners, Supporters, Investors and Friends of  
Idaho Sustainable Energy (ISE)  
United States and Abroad

**Re:** U.S. Department of Energy (DOE) Evaluation of ISE in its application by the Merit Review Committee referencing the subject “Biomass Funding Opportunity Announcement DE-FOA-0000096, Recovery Act - Demonstration of Integrated Biorefinery Operations” from the DOE, application title “Algae Growth and Harvest Complex for the Production of Algae-Based Biofuel.”

Dear Friends and Colleagues:

We, the ISE Project Team, carefully reviewed the U.S. Department of Energy (DOE) letter dated December 7, 2009, that was received in the mail late on December 18, 2009 (letter attached hereto).

This letter from the DOE clearly outlines the significant strengths of our program. However, the letter also outlines certain weak points that are really additional strengths of our project, we will address them last. As outlined in the letter we will first list the strengths of the ISE proposal:

### **Criterion 1: Technical Merit Strengths**

- ✓ **The engineer in charge is experienced in design, development, and construction processes.**
- ✓ **Drawing on significant resources, the project incorporates an existing biodiesel plant already 50% built. The company has a proven track record of producing quality biodiesel.**
- ✓ **The company appears to have a well qualified and experienced leadership team.**
- ✓ **The project is innovative and ambitious.**
- ✓ **The proposal included strong letters of support from project participants.**



## **Criterion 2: Commercialization Plan Strengths**

- ✓ The company has existing operations at the biodiesel facility that substantiate its abilities and experience.
- ✓ The team demonstrates that it has strong commercialization experience and engineering leaders.
- ✓ The biodiesel refinery already exists and will be expanded making good use of existing facilities and resources.
- ✓ The proposal indicates a significant degree of financial participation by the applicant, including an 86 million dollar cost share.

## **Criterion 3: Project Management Strengths**

- ✓ The Project Management Plan is fully integrated with financial and business systems.
- ✓ The applicant is experienced and demonstrates qualified leadership.
- ✓ The applicant has demonstrated an ability to build and operate pilot and commercial scale facilities.
- ✓ The proposal possesses a stage gate method that adequately described and is coordinated with a resource loaded schedule.

In reviewing the above merits and strengths of ISE's proposal, we feel strongly that professionals on Wall Street would consider these strengths in soliciting an Initial Public Offering (IPO).

To have DOE examiners list all these positive criteria above and then a rejection on some insignificant minor basis is a travesty and in direct conflict to what President Obama has laid out for the U.S. Energy Independence Planning. If you recall, President Obama stated in one of his recent speeches that he expects the next major breakthrough in technology (to rescue the U.S. from imported oil) would probably come from a single person or a small group working in their garage. Obviously that message has not been received at the Department of Energy.



Our investors and technological staff have devoted endless hours for many years to get to the point where we have proven to the DOE examiners that we have successfully reached the milestones that any Wall Street investor would cherish for an independent start-up company.

In reviewing the list of weaknesses outlined by DOE examiners it is our opinion that these are not weaknesses. It appears that the DOE examiners did not review our application properly and we herein comment specifically on each weakness issue:

1) The DOE examiners pointed out that ISE had a weak risk management plan wherein we submitted a Hoshin Planning (Hoshin kanri) management plan. Hoshin kanri is a method devised to capture and cement strategic goals as well as flashes of insight about the future and develop the means to bring these into reality. Also called Policy Deployment or Hoshin Planning, it is a Strategic planning/Strategic management methodology, developed by Dr. Yoji Akao, that uses a Shewhart cycle (Plan-Do-Check-Act) to create goals, choose control points (measurable milestones), and link daily control activities to company strategy. This management planning is used by major companies in Japan. It is evident that a risk management plan considers all of the categories listed above that are our strengths. Anyone who reviews a typical private placement memorandum (PPM) issued by a major company would see very quickly that many of the risks encountered by a start-up company have been addressed in our strengths as outlined by DOE examiners. To suggest that a minor paperwork risk management plan would be one of the reasons to turn down the enormous strengths of our project is beyond our comprehension.

2) The second category states that our Green House Gas (GHG) reduction in our oral presentation given to the panel on October 6, 2009, was only 78%! Also, the petroleum displacement analysis needs greater substantiation. This is a total reflection of the DOE examiners not understanding the entire Alternative Fuel Industry. We must question the motives or the qualifications of the DOE examiners. It is well known in the industry that the petroleum offsets and GHG reductions on many forms of alternative fuels, including bio-ethanol and biodiesel, have been a controversy for the last 10 years. The offsets of both GHG and petroleum have been in discussion across many lines of political and scientific studies. To suggest that our 78% reduction of GHG is too low is unwarranted! In all the studies created in the industry thus far, which look at life cycle analysis or cradle-to-the-grave analysis for petroleum and GHG, have concluded a wide variety of final numbers (78% being at the high end) and many of them suggested further study. Therefore, for



DOE examiners to suggest that our GHG and petroleum reduction is too low for qualification for this program is unbelievable!

3) The third major category – budget allocation plan needs more detailed information. The DOE examiners stated this as a weakness when one of their Criterion 3 strengths states: “The Project Management Plan is fully integrated with financial and business systems.”

Can somebody please explain how you can have one without the other?

The total budget of \$30.1M for the project was comprised of 44 line budget items (each segregating labor, materials and other adjustments), for an average of only \$684,000 per line item. It should also be noted that the largest budget item of \$2.56M was for the plant biodiesel reactor, which had already been completed and was part of ISE's contribution, or cost sharing, to the the project, and that the other large budget items were made up of specific items such as land and buildings, each with details. In addition, each line budget item was integrated into the Project Management Plan.

The fact is that our project allocation plans were comprehensive and prepared by Tom Gruenwald who has over 25 years of CFO experience in banking and the development of large construction related projects, with a focus on budgets and the funding process (including 5 years working for the FDIC).

4) The DOE examiners stated, “The production of the minor product - cellulosic ethanol - is not well defined”. It should be noted that cellulosic ethanol from algae was part of ISE's original Commercial Project, since cellulosic ethanol can be made from many types of agricultural waste streams including municipal waste. ISE added cellulosic ethanol as a small R&D project that connected to the major Algae Biodiesel Commercial Plant. This addition by ISE was a logical step because DOE and ISE wanted to investigate the algae-to-ethanol possibility. Since DOE required a 1-ton per day feedstock algae for an ethanol pilot plant test facility, ISE believed that only ISE's Commercial Facility (at 25 tons/day capacity) could supply the daily feedstock for this R&D cellulosic ethanol test project.

Furthermore, ISE already possessed the technology to build the test algae-to-ethanol facility and has patents pending in this area. Our project team was asked to explain, in more detail, the technology involved in cellulosic ethanol process as one of the 5 questions that were asked in the final 30 minutes of the oral presentation. ISE's engineers answered this question in great detail. However, before answering



them, Joseph LaStella, P.E. Ret., indirectly register a protest because according to the strict formality observed in this final oral presentation, ISE was limited to only 4 phone lines, therefore, all of ISE project members could not participate during this session. Several of the parties that were missing were: 1) Dr. Irshad Ahmed, a leader in the cellulosic ethanol industry; 2) Wes Berry, an internationally known chemical engineer and probably one of the finest and most respected scientists involved in biodiesel and ethanol processes in the world; and 3) Venture Engineering, which brings a vast knowledge of ethanol production facilities which they have built in the United States.

Therefore, the expertise to answer this question was not on the phone line. However, Mr. LaStella answered this question in great detail as follows:

During the years 1978 through 1995 the United States spent approximately \$100 million to investigate cellulosic ethanol as a future fuel alternative to the U.S. corn ethanol industry. Extensive research was completed at the Tennessee Valley Authority (TVA) laboratory at Mussel Shoals, Alabama. In 1995, the TVA facility was changed from a National Laboratory and reclassified as a Federal Laboratory, which means that they would no longer receive any direct government funding. At this point, the facility was ready to be closed down permanently. Dr. Ahmed then contracted with TVA to keep this facility operational for the next 3 years and invested approximately \$10 million dollars into cellulosic ethanol. During this period, cellulosic ethanol was produced from a variety of raw materials including corn cobs, corn stover, wheat straw, wood chips, municipal waste, etc. The TVA research facility rivals anything that is available in the world today as a research facility. The valuable research accomplished prior to 1995 formed the basis for continued research in 1996 through 1998. This valuable research is not available to anyone else in the world and was never published in a white paper. In addition, other members of the ISE team have utilized some of the previous work at TVA and now have patents pending on the use of ISE's proven biodiesel reactor with modifications to produce cellulosic ethanol. Therefore, the ISE team have a complete background in cellulosic ethanol research and the understanding to build the reactor to produce cellulosic ethanol.

We also stated that we would probably not sell the ethanol to the market because ethanol can be used, instead of methanol, in the biodiesel conversion process. It was clearly stated by Mr. LaStella to the DOE examiners that biodiesel manufactured in the U.S. today is dependent upon methanol which is primarily produced outside the United States boundaries. Furthermore, methanol is derived from natural gas which



means that presently U.S. made biodiesel is not 100% renewable. By using cellulosic ethanol derived from local waste products, the biodiesel produced from ISE's facilities will be the only biodiesel produced in the United States that is 100% renewable and 100% independent from foreign imported methanol.

Our answers to this simple question possibly were much more complete and complex than perhaps necessary. We are relating our answers so that the reader can understand the in-depth information that was given to the 4 examiners of the DOE panel.

5) The DOE examiners stated, we did not identify the algae strain that would be used in the project. One of our four technical representatives on the phone at the oral presentation was Dr. John Lednicky, a senior chief scientists from Midwest Research Institute (MRI), in Kansas City, Missouri. He is probably one of the finest algae researchers in the United States. It is the opinion of our team, including Dr. Lednicky, that there is some evidence that the examiners had not read or were not familiar with our project. For example, one of the five questions asked after the oral presentation was something like: "How do you keep foreign organisms from invading your open ponds?" When this question was asked a clear chill ran through everyone on our project team because it clearly indicated that the examiners either did not read or were not familiar with the extensive 50-page technical report (as part of our approximately 140-page proposal submitted). Our project response clearly indicates that we are not involved in open pond production! There is a huge amount of technology that was discussed in the 50-page technical report and our (closed) ponds are covered and not open as they suggested. Although the ISE team did answer the question more than adequately, the fact that they were not familiar with this simple and most important aspect of our technology clearly indicates that they may understand very little about this and any other feature of our technology.

Another example: the fact that MRI had tested our micronutrient booster formula on at least 4 different types of algae, one of them bearing as much as 30% oil, is not recognized by the examiners as one of the strengths. Furthermore, the DOE examiners failed to recognize the strength of our nutrient booster formula which has clearly shown an increase of biomass in excess of 200%. On the last slide of the algae presentation, dramatic recent photographs taken by Dr. Lednicky only a week before clearly showed under microscope magnification that the cell count was enormously increased and the cells were larger than the controls using the algae micronutrient booster formula. These photographs were attached for reviewing by the examiners prior to the oral presentation with permission from the moderator.





This breakthrough proprietary micronutrient booster formula is an algae technology that only we possess; has been proven by Dr. Lednicky at MRI and other labs; and can eventually be used across the entire algae production industry.

Our financial presentation stated that oil production income from our algae program was about equal to the high-protein biomass by-product that can be sold to the cattle and animal feed industry. To make a quick comparison, it's clearly indicated in our report that over the past 50 years other researchers increased algae oil content by switching from a benign growth environment to a stressful no-growth condition. During these stress conditions the production of algae, through normal exponential growth, slows down significantly. Therefore, the overall production of oil by algae is diminished because of the reduced biomass production.

Why try to stress out millions of algae cells to make them fatter when you can produce billions of not-so-fat algae and end up with a larger total oil production? Also, you would end up with a higher total biomass and therefore many times more by-product high-protein algae meal.

Our algae nutrient booster formula has been shown to increase the entire biomass production by up to 200% or more. This means that not only the biomass has increased but the oil in the biomass is increased, therefore, even a low producing oil algae strain candidate, say at 20% oil content, would produce three times more biomass (and three times more oil) and would be equal to a 60% oil producing algae strain. These two strategies – not to use stress environments to make fatter cells versus the use of our micronutrient booster formula to increase production – will produce a bottom line of having the highest production yields of oil and high-protein meal using any type of algae strain. Incidentally, we know of no algae that can produce 60% oil that would grow prolifically under any conditions. We clearly stated the algae strains to use and our algae growth strategies in our oral presentation, we clearly stated them in our cross examination. Evidently the DOE examiners did not understand this and possibly they did not read our report and/or did not understand it.

**NOTE ON THE ORAL PRESENTATION:** In the oral presentation, during the question and answer period, there were only 5 questions asked by the examiners. These questions were submitted in writing. We never had a chance to talk directly to any of the DOE examiners as they were identified only by numbers 1 through 4. The DOE examiners could only listen to the ISE project team and were moderated through a DOE engineer mediator



who acted in this capacity throughout the oral presentation. There was no direct dialog allowed between ISE engineers and scientists and the DOE examiners, therefore, no secondary questions were allowed between the parties.

In addition, the DOE examiners overlooked one of ISE's main strengths – and one of the reasons we chose to pursue this project at the Glenns Ferry site – is the fact that ISE is taking advantage of tens of millions of dollars of existing infrastructure. This infrastructure does not have to be built and would take very little capital to modify it for our purposes. The Glenns Ferry site already has a 10 MW Natural Gas Power Plant to furnish the project with essentially all the necessary clean CO<sub>2</sub> for algae growth. The other infrastructure advantages include the existing buildings, the pre-qualified zoned aquaculture site for the algae ponds, the biodiesel plant and other structures that are already in place at Glenns Ferry.

By taking advantage of the existing power plant and infrastructure, the ISE proposal would have been the least expensive funding project for the DOE compared to the other 19 projects that were approved for funding this year.

Of course, the fact that the ISE project is situated in Glenns Ferry, Idaho, which is experiencing over 20% unemployment, should have played some role in the evaluation process.

After careful review of the DOE letter we are of the strong opinion that the DOE examining merit board has not fully understood nor recognized the total strength of the ISE application.

We have great respect for President Barrack Obama and we have great respect for Dr. Steven Chu, Head of the Department of Energy. However, they are certainly not aware of the intricacies that are going on beneath them in the review of qualified applicant projects being rejected.

Some of the possible reasons for the DOE rejection of our ISE project could be:

- 1) DOE examiners are overworked and did not read the ISE report nor paid attention during our oral presentation.
- 2) DOE examiners may not be qualified to evaluate a complex algae production system especially one as unique and innovative as ISE's. The fact that they called it ambitious would indicate that possibly they could not evaluate the scope of the project.
- 3) We would not like to think of ulterior motives governing DOE examiners





# Idaho Sustainable Energy, LLC

decisions with possible alignments with other applicant companies in the same business. ISE, except from support from local and state government representatives, have not sought out any assistance from lobbyists in Washington DC for alignment in projects of this type.

In conclusion, ISE is going to register a formal protest about the methods used by the DOE in these formal oral presentations. There is no exchange of information allowed by the DOE panel of examiners and the participating members of the project. There is no dialogue and there is no way for any further clarification of questions from the participating organization. If a further clarification of a question was necessary the examiner was not given the opportunity nor allowed to further question ISE personnel for clarity. Also, there is no method for DOE panel members to ask for clarification or further information on any questions.

This is not a method for clarification of questions that are critical for the United States to be Energy Independent. Furthermore, we were not given the educational qualifications, expertise, experience or background of the examiners. We have no way of knowing who these panel members are; none of the names of the panel members were revealed; they were only numbered 1 through 4. We resent this secrecy. We don't know who they are; what are their backgrounds; what are their expertise; or their affiliations. Why is it a great secret? Under the Freedom of Information Act we should be entitled to know who these people are – especially when they have exhibited such a shallow understanding of our technologies.

Furthermore, we intend to share this analysis of the DOE evaluation with all of our supporters. We are requesting a private audience with Dr. Steven Chu, Head of the DOE. Also, we intend to seek a professional opinion from one of the major financial firms on Wall Street regarding this DOE evaluation letter and our proposal. We may ask everyone to further share the content of this letter with local radio stations and the press to highlight our qualifications in deserving a grant to continue developing a true algae biodiesel refinery program.

Thank all of you for your consideration in this matter.

Sincerely,

William L. “Stretch” Fowler  
Managing Member  
Idaho Sustainable Energy, LLC