Minutes of the

RENEWABLE ENERGY COUNCIL

Thursday, September 8, 2011 – 10:00 am (CST)
Posilock Manufacturing
805 Sunflower Avenue, Cooperstown, ND

CALL TO ORDER

Members Present: Al Anderson, Rod Holth, Al Christianson, Mark Nisbet, Randy Schneider, Terry Goerger, and Eric Mack.

Others Present:
Andrea Pfennig, Department of Commerce
Karlene Fine, Industrial Commission
Joleen Leier, Department of Commerce
Keith Monson, Posi-Lock
James Geisler, Posi-Lock
Cristofer Somerville, Posi-Lock
Peter Letvin, EERC
Chris Zygarlicke, EERC
Jodi Somerville, Posi-Lock
Deana Weise, Ethanol
Lloyd Anderson, Green Vision Group
Rick Whittaker, Heartland Renewable Energy
Blain Schatz, NDSU
Igatha Cannayen, NDSU
Thein Maung, NDSU
Maynard Helgas, GVG
David Ripplinger, NDSU
Juan Vargas, NDSU

Al Anderson, Chairman, called the Renewable Energy Council meeting to order at 10:03 am.

CONSIDERATION OF R-007-015 DAKOTA TURBINES REQUEST FOR ADDITIONAL TIME AND ADDITIONAL FUNDS

Request for Additional Funds: $106,873. Previously Granted $178,500; Total Award Would Be: $285,373 (40% of Total Costs); Total Project Costs: $713,895.

Pfennig gave an overview of the project. Commerce's recommendation is to fund the request for additional funds and grant the one-year extension.

Cris Somerville gave an overview of The Dakota Wind Turbine Company.

Goerger asked if they are spreading the sites throughout the state or are they wanting to keep them local? Response: Two sites in Cooperstown, one Jamestown, and one southeast of Cooperstown. Keeping them close enough so they can get to them, yet miles enough apart to get variations of weather.

Schneider asked who do you foresee being your targeted customer once this machine is up and running? Response: We're targeting farmers and ranchers as well as small businesses that have land to work with.

Goerger asked what they anticipate the selling price to be? Response: We haven't nailed that down yet, but it's going to be upwards of $200,000.

Goerger asked is it important to have the correct placement of the grid taking into consideration the electric companies' preference? Response: According to the current law, it has to be hooked in behind the meter.

Goerger asked how high does the wind tower stand? Response: 80 feet.

Schneider asked if he's a farmer/rancher and he's going to spend $200,000 to be able to produce his own tower, how is he going to get his payback when he is currently getting his electricity with no problem. Response: Right now the incentives that are available are 30% federal in cash rebate and dollar rate depreciation on the front end. With those two, our turbine will pay back in nine years.

Schneider asked, do you need more energy for irrigation than what the wind turbine can provide? Response: No, it puts electricity back into the grid.

Mack asked how long the lifespan is for a tower. Response: 20 years.

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Schneider asked what the wind speed is for a tower. Response: A couple miles an hour.

Toured Dakota Wind Turbine at 10:25 am.

Meeting resumed at 11:25 am.

APPROVAL OF MINUTES

July 14, 2011 meeting minutes were reviewed.

Randy Schneider moved to approve the minutes as presented. Mark Nisbet seconded the motion. Motion passed.

PRESENTATION OF FINANCIAL SUMMARIES

Fine gave a financial update. There are two sets of financials (2009-2011 biennium) and current. Started with $5 million. Cash balance of $3.3 million with over $2 million committed. We ended up with $1.2 million uncommitted dollars at the end of the biennium (6/30/11), with cash of $3.3 million.

We start this new biennium (2011-2013) with a cash balance of $3.3 million and will get revenues of $1.5 million, which has already been put into our bank account. We have a cash balance of $4.8 million as of July 31. We have outstanding administrative commitments that are tentative ($90,000). Project commitments and uncommitted dollars for this biennium is $2.7 million.

CONSIDERATION OF GRANT ROUND 13 APPLICATIONS

R013-A: "Comprehensive Statewide Higher Blend Ethanol Marketing Campaign"; Submitted by North Dakota Ethanol Council; Principal Investigator: Deana Wiese; Project Duration: 30 months; Total Project Costs: $424,000; Request for: $199,600.

Pfennig gave an overview of the project. The overall reviewers' recommendations follow: Fund (200), (293), and (172). Average Weighted Score was 188 out of 250. Commerce's recommendation is to fund this project.

Deana Wiese presented.

Goerger asked is it the Council or the producers that fund? Response: Council.

Goerger asked what percentage of the $175,000 with the retailers may be a buy down of fuel costs? Response: We don't have all the details worked out yet. That will be determined by the Marketing and Steering Committee in the next year or two.

Nisbet asked if E30 is successful will you cannibalize E85? Response: We want to increase Ethanol consumption. We don't want to deter an E85 user.

Mack asked if they will start working with the retailers? Response: Could definitely be into the future. We are targeting two groups first.

Anderson asked if it is accurate to say that North Dakota has the most blender pumps? Response: Yes, we are, not in only pure numbers, but also on a per capita basis.

Mack asked if there was a list of ethanol pumps somewhere? Response: The Amercian Lung Association posts the map of where the pumps are located in North Dakota.

Holth asked with well over 50% budgeted for marketing, is there a North Dakota firm that can provide this service. Response: There are four qualified applicants from North Dakota.

Pfennig asked if they were successful, would they look to market this product out of state? Response: Yes, we could share best practices.

Goerger asked if the organizations are doing the same thing on a national level. Response: They are doing a real focused campaign on consumers. If this works, this will be a model for the rest of the country.

R013-C: "Improving the Profitability of ND Ethanol Plants with Algae"; Submitted by EERC; Principal Investigator: Peter Letvin; Project Duration: 12 months; Total Project Costs: $426,550; Request for: $200,000.

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Pfennig gave an overview of the project. The overall reviewers' recommendations follow: Funding May Be Considered (181), Do Not Fund (167), and Fund (195). Average Weighted Score was 181 out of 250. Commerce's recommendation is that funding may be considered for this project.

Peter Letvin presented.

Nisbet asked him to expand on pharmaceuticals. Response: Some of the products produced are antioxidants, Omega 3s, and a cancer-fighting antioxidant.

Schneider asked if they have talked to Greg Lardy at NDSU. Response: No.

Schneider asked if this would exacerbate any sulfur issues. Response: No, Algae likes sulfur.

Goerger asked him to explain the Finance and Administration Section ($132,550). Is that the EERC's portion? Response: That is our cost. DOE is mandated the 49%.

Schneider asked about the potential collapse of price. Is that reviewer correct? Response: We have the ability to control how much is produced. We don't have to produce the maximum capacity. We can direct the syrup to generation of other products.

Mack asked what does your $1/lb consist of. Response: A lot of it depends on how we grow it. That is what the lab portion is for. We target 30% for the fat or prolific content. 10-15% of the biomass can be used Omega 3 oil. Caltmeal is $1/lb.

Christianson asked how much C02 is there and would that affect any of these ethanol plants now that are trying to go to RFS standards, the play cycle, carbon and is there enough CO2 here to make a difference on that? Response: It all depends on how much algae we grow.

Schneider asked if there is an issue with shelf life? Response: If wet yes. When dry we have a few months.

Anderson asked about the responsibility to taxpayers, do you have any idea what the next phase of this project would be to implement this process and timeframe? Response: Probably $8-10 million. Timeframe is a year or two; Phase I will take about a year.

Anderson asked why North Dakota? Response: A lot to protect here (i.e., trade secrets).

Anderson asked who owns it? Response: After Phase I we would be looking for partners. Some money could come back to the State.

Terry Goerger moved that we need to add CO2 study as a contingency. Eric Mack seconded. Motion passed.

PROGRESS REPORT ON PHASE I – ENERGY BEET RESEARCH – GREEN VISION GROUP

Lloyd Anderson, Blaine Schatz, Rick Whittaker, Juan Manuel Vargas-Ramirez, Thein Maung, David Ripplinger gave progress report on Phase I.

Goerger asked what is the difference between a regular sugar beet agronomically and the energy beet sugar content? Response: Basically the same. Horticulturally the same. Culturally speaking they are the same, but we need to emphasize the point that right now in the trials we have about 50% are true energy beets in a sense that they are selected genetics so they are all susceptible to the same diseases.

R013-B: "Energy Beets, Phase II"; Submitted by Green Vision Group; Principal Investigator: Lloyd Anderson; Beet Juice Storage; Bottom Ash; Burn Test; Project Duration: 24 months; Total Project Costs: $1,000,000; Request for: $500,000.

Pfennig gave an overview of the project. The overall reviewers' recommendations follow: Funding May Be Considered (185 and 131), and Fund (209). Average Weighted Score was 175 out of 250. Commerce's recommendation is that funding may be considered for this project. Proposed Contingencies: (1) Appendix III of the proposal states, "…If accepted, RMA evaluates

performance of the pilot program and usually reimburses firms for development expenses…"

- It is unclear what firm would be reimbursed.
- If it is GVG, a portion of any reimbursement should be returned to the REP.

(2) A detailed communications plan is provided to Commerce's Marketing Team for review. They will offer any suggestions they might have.

Lloyd Anderson, Blaine Schatz, and Igatha Cannayen, and Juan Vargas-Ramirez presented.

Schneider asked if you don't get federal crop insurance, how will this project be delayed? Response: I can't give a definite answer at this time, however, if farmers couldn't get federal crop insurance, they won't want to grow beets.

Schneider asked how many months worth of beets are you going to have to store? Response: Typically 10 months of beets.

Schneider asked if they are going to need 190,000 acres per plant? Response: No, we will need 30,000 acres per year per plant and desire a four-year location.

Anderson asked about timeline to build pilot facility in 2012? Response: Yes.

Anderson asked about the energy beet currently using, what happens to them. Response: They are being tested, harvested, and discarded.

Schneider asked why American Crystal and MinDak are not participating in this project. Response: They have spoken with them several times. One reason is because of the current high market of sugar.

Helgas stated they are looking at a full 20 million gallon a year plant, not a demonstration plant. We will operate that for one year and then make decision on where to go from there. It will probably be ten years before all 12 plants are built. When those 12 plants are built, then we will have something for the sugar plants to look at.

Goerger asked why equipment companies aren't giving them the test equipment rather than them buying the equipment? Response: We can try that.

Nisbet asked, you get the continuous flow, or solve the problems with the juice, the turning it into ethanol isn't really that complicated, using same technology and same plant? Response: There are no concerns from investors about the project as it relates to making ethanol out of sugar. What we are trying to do is find ways to do it more efficiently and without doing it from frozen inventory.

Schneider asked, do you know where you should come out on the life cycle? Response: Plants toured produced 50% in excess. We're confident we will make that. Cole feels we can get cellulosic; that we are going to hit the 60% category.

Nisbet asked if the powder or cofiring proved not to be economical or add value? Response: The economic studies we've been doing were assuming we are going to take distillage, which comes out of the distillation column, which is essentially a waste product, and turn it into energy to supply 70-80% of the thermal requirements for the plant. If we co-locate with Great River at the Spiritwood Energy Plant, what is likely to happen is we would sell the powder to their cofired electrical generation plant and we will get secondary steam for our thermal requirements.

Al Christianson moved to add contingency regarding reimbursement to Renewable Energy Council. Mark Nisbet seconded. Motion passed.

Al Christianson moved to add contingency that requires a detailed communications plan is provided to Commerce's Marketing Team for review. Eric Mack seconded. Motion passed.

CONFLICT OF INTEREST

R-007-015 Dakota Turbines Request for Additional Time and Additional Funds

- None

R013-A: "Comprehensive Statewide Higher Blend Ethanol Marketing Campaign"

- Al Christianson
- Randy Schneider

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R013-B: "Energy Beets, Phase II"

- Rod Holth
- Al Christianson

R013-C: "Improving the Profitability of ND Ethanol Plants with Algae"

- Randy Schneider
- Al Christianson

COMPLETION OF BALLOTS

R-007-015 Dakota Turbines Request for Additional Time and Additional Funds; Submitted by Posi Lock.
Fund: 7 **Do Not Fund:** 0

R013-A: "Comprehensive Statewide Higher Blend Ethanol Marketing Campaign"; Submitted by North Dakota Ethanol Council.
Fund: 7 **Do Not Fund:** 0

R013-B: "Energy Beets, Phase II"; Submitted by Green Vision Group.
Fund: 4 **Do Not Fund:** 3

R013-C: "Improving the Profitability of ND Ethanol Plants with Algae"; Submitted by EERC.
Fund: 6 **Do Not Fund:** 1

ADMINISTRATIVE BUSINESS

Status of Funded Projects To Date

Lake Region Project – Award Amount: $500,000 (Total Project Costs: $ 6.3 million). Curriculum has been developed and approved (20 students were accepted for Fall 2010 with 30+ students on a waiting list). Construction on turbine has been delayed by several factors including : Projected costs have increased, requiring more funds and having a difficult time accessing appropriated funds.

ComPAKer – Award amount $72,275 (Total Project Cost: $144,550). Only received one status report on 12/31/08.

Small Wind Turbine Training Center – Award amount - $50,000 (Total Project Cost: $100,000). Construction of the turbine has been delayed by difficulties obtaining permits. Two workshops have been completed, one more is required to fulfill the terms of the contract. As of 7/11 they anticipated turbine would be constructed by 9/30/11.

Promoting Ethanol in ND – Award Amount: $30,000 (Total Project Costs: $72,300). Exhibited at seven conferences, did promotions at six retail locations with blender pumps, established media presence. Due to changes in staffing, a no-cost extension was granted extending the final report to 12/31/11.

Renewable Oil Refinery Development for Commercialization – Award Amount $500,000 (Total Project Cost: $1M). Final report has been submitted.

Resources Trust Switchgrass Project – Award Amount: $280,000 (Total Project Costs: $420,000). Looking at harvesting every other year and every year. Been doing a good job with communication and outreach.

Renewable Electrolytic Ammonia Production from Water and Nitrogen – Award Amount: $250,000 (Total Project Costs: $600,000). Work was delayed due to on-going negotiations with an entity providing matching funds. The contract is now executed (as of 6/29/11) and work has begun on the project.

Bulk Energy Storage – Award Amount: $225,000 (Total Project Costs: $570,000). Cost Benefit Analysis has been performed. Detailed report has not yet been provided. Geo-mechanical analysis is being conducted in five phases. The first four have been completed. They should have the final report submitted within 5 weeks. They are looking at a Phase II.

Biomass Testing Lab – Award Amount: $225,000 (Total Project Costs: $450,000). First report was received 3/11. Detailed information was provided regarding the purchasing process and actual purchasing of the four pieces of equipment. A number of outreach activities have taken place.

Dakota Spirit Biorefinery – Award Amount: $500,000 (Total Project Costs: $1,250,000).

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In the process now of building a 60-million gallon conventional ethanol plant as Phase I. Then moving to Phase II, would be an 8-12 million cellulosic ethanol plant. Timeline follows: finance between 4th quarter and financial close on 4/1/12, construction starting 4/2/12, and online for the fall harvest of 2013.

Standardization for Biofuels – Award Amount: $50,000 (Total Project Costs: $110,000). Several methods for biomass characterization have been obtained and reviewed. (The methods were obtained from ASTM International, the European Committee for Standardization, and the International Organization for Standardization.) The biomass fuel candidates have been selected.

Developing a Biomass Industry in ND – Award Amount: $406,120 (Total Project Costs: $812,240). First task partially complete. (Design and build a three reactor continuous PB-AFEX laboratory stystem). 10kg per day AFEX 3 test skid has been designed (includes design calculations and safety review).

Biobased Hybrid Resins – Award Amount: $200,000 (Total Project Costs: $400,000). Contract executed, work has begun. First report due 12/31/11.

Other Business

No new business at this time.

Anderson thanked everyone for their cooperation and attendance. Also thanked everyone for the great feedback.

ADJOURNMENT

It was moved by Al Christianson to adjourn the meeting. The motion was seconded by Randy Schneider. Motion passed. The meeting was adjourned at 4:36 pm.

Alan R. Anderson Date
Chairman

Joleen Leier Date
Acting Recorder

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