



BioND

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FINAL REPORT ON RENEWAL ENERGY GRANT
CONTRACT NO. R-024-033

Pursuant to Contract No. R-024-033, Contractor (the Bioscience Association of North Dakota (BioND)) hereby files the following report pursuant to such contract:

- 1). Identify, recruit and hire an Executive Director
 - a). As reported in the Consolidated Grant Report #3, this has been accomplished.
- 2). As located in the Contract and the Attached Application, we were to expand membership among ag growers, groups, and association interested in biomaterial, biofuels, and bioscience opportunities. As shown by our Membership list, a copy of which is attached and marked "ATTACHMENT 1", we now have 117 members in our association split between industries, ag groups, associations, educational groups and student groups interested or involved in biomaterial, biofuels, and bioscience opportunities. Every business, every association or individual listed herein is a **dues paying** member of the Bioscience Association of North Dakota.
- 3). As reported in earlier reports, the Bioscience Association has participated in and co-hosted with NDSU Bioindustry Action Summits in the years 2015 and 2016 and is co-hosting the BioIndustry Action Summit in May of 2017 at NDSU.
- 4). Currently, the Bioscience Association is supporting two biodevelopment opportunities.
 - a). We have recently engaged with BioMass Solution to support the construction of the "Red River Biorefinery", an ethanol plant in Grand Forks, ND, which will be one of the largest advanced ethanol and lowest cost cellulosic ethanol production facilities in the United States. To date there has been put in place a "Contingent Land Agreement"; the initial Engineering Package is Completed; Validation Testing has been Completed; a Site Survey has been performed; Site Platting is in Process; Draft Term Sheet for Export Financing in Place (65% of the Project Cost). The Plant will employ 25 people directly but will have a major impact on transportation and other services in the Grand Forks area. See Attachment 2 for Proposed Site Plan. ~~We have recently engaged with BioMass Solution to support the construction of an ethanol plant in Grand Forks, ND, which will be one of the largest advanced ethanol and lowest cost cellulosic ethanol production facilities in the United States.~~
 - b). We are further studying a project entitled "Increasing Soy Hull Value through Developing a Range of Industrial Applications", since soy hulls are more suitable for value-added industrial uses than for livestock feed. In prior and ongoing soybean council projects, researchers have been developing cellulose nanofibers from soy hulls via microfluidization and using the nanofibers to

replace carbon black to reinforce vulcanized rubber. Built on the knowledge obtained from two projects, the proposal is to develop: (1) surface-carbonized soy hull cellulose nanofibers to reinforce rubber and other thermoset/thermoplastic polymers; (2) carbonized soy hull for liquid or gas filtration and absorption; (3) carbonized soy hull for electrodes of supercapacitors. The three objectives are closely related but different in degree of carbonization and surface treatment due to their different applications. The carbonization will be conducted using facile hydrothermal treatment combined with high efficient microwave irradiation. The multiple new uses of soy hulls to be developed in this project are expected to increase their market values.

5). The Bioscience Association was to:

- (a). Furnish verification of the \$33,000 in matching funds in order to receive the first \$10,000 (contract Section 3, Consideration): This was done. See BIOND bank statement June 1, 2015, when the document was signed, shows a balance of \$34,239.11 (Attachment 2).
- (b). \$12,000 of in kind office services which has been furnished by the Center of Innovation Since July of 2015 to February 1, 2017, in the amount of \$14,250.
- (c). \$15,000 donated staff time: in the application this donated staff time was to be by the 11 member board of Bio to be calculated at \$50 an hour per Board Member. This was agreed to by the State. Now the State says if a Board Member is a State Employee, then we can't use the hours donated by that person. I disagree with that; but the calculation of time by the other Board members is as follows:
There are monthly meetings of the Board. These meetings are approximately 3 hours in length, if not longer. We have assigned a pay rate of \$50 per hour per member for the value of the time they are donating to the Association. Therefore there are 7 Board members (who are not employed by the State) who have committed a minimum of 3 hours a month to the business of the Association or \$1,050 per month from May of 2015 till February of 2017, or 19 months. Total time donated \$19,950.

6. The Bioscience Association has spent \$64,547.49 and incurred indebtedness of over \$15,000. Currently it has \$17,066.80 in its checking account to pay the \$15,000 in payables which it will pay here shortly. So the Association will have met its \$33,000 cash match.

It is the Bioscience Association's belief that they have met all of the requirements for the Grant as set forth in Contract NO. R-024-033 and requests final payment in the amount of \$23,000.

Thank you for your kind consideration in this matter.

Richard Glynn
Executive Director
Bioscience Association of North Dakota