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Ag operation is revolutionary

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contributed

In alchemy, the central dream is to turn lead into gold. Farmers, too, hold what was once believed an impossible dream, of creating a place where production and processing happen together, as well as protect the resources they steward. Now, in southwestern Wisconsin's lead region, a group of people believe they have created a golden idea, one that combines an ethanol plant, beef finishing lot, manure digester, power generation, and greenhouse production into one environmentally friendly campus.

To be formally announced Dec. 5 will be a project called Belmont BioAg (BBA) - the focus of creative minds for almost four years. This project, which involves millions of dollars of investment, thousands of hours of research, and dozens of new methods for agricultural product had much humbler beginnings, however.

"All this began as a feedlot," said Tim Baye, CEO of Lafayette BioAg, who began assisting the group since the project began in earnest in 2002 under contract as director of the Southwest Wisconsin Business Management Program. In those early days, the main task was to keep a large number of cattle from being finished out of state, enhancing Wisconsin economics. With the idea of creating a feedlot in rural Belmont, Baye said, those behind the idea, including Bob Brodbeck of Platteville, immediately began raising issues that might

cause people to be against the project. "How do we deal with the waste? The dust? The odor? With biosecurity?"

Under the auspices of UW-Extension, Baye logged extensive hours on the project and process. Early on, acceptable answers were not easily at hand. The group gathered and sifted through different technologies, trying to determine what would or could work, and what would not. "It has been a monumental task," Baye noted. Each new idea received thorough review and some added a new piece to the process. The issue of animal waste, for example, raised the issues of groundwater protection, animal health, and odor - all problems associated with a typical feedlot. The group addressed them, through designs that enclose the animals in a well-ventilated building to control dust and their environment.

To ensure the health of the animals and control odor, the group then developed a flume system which would remove waste in an expedient manner. But where would the waste go? If large amounts of money were to be spent moving that waste, they reasoned, there must be a way to utilize it better than storing and spreading, the typical approach.

Enter the manure digester and solid separator. The by-products of this system are methane gas, called biogas, and fertilizer which can be further used and/or sold, meaning almost nothing goes to waste.

"The project today is

amazingly larger than when it began," said Baye. It grew to include a 50-million gallon ethanol plant, CO₂ plant, a finishing feedlot for 20,000 cattle which will be fed some of the wet distillers grain product from the ethanol plant, anaerobic digesters that will process the manure from the feedlot, solids separator system, water filtration unit so water can be cleaned to a potable state and reused, combustion system to generate heat, combined heat and power system to generate electricity to fuel the campus, and a greenhouse complex that will incorporate "waste" heat and captured rainwater.

Believing strongly in the project and its "green" effects, and being a strong proponent of renewable energy, Baye recently took a leave of absence to promote the project further by working with Lafayette BioAg, LLC (LBA), the entity owning the intellectual property and the second company created by this venture.

Lafayette BioAg, based in Platteville, besides controlling the intellectual property, will handle the marketing of all products produced for sale, as well as contracts with farmers for corn and cattle and with contractors involved in managing the systems within the BelmontBioAg campus. It will also market the processes of the project, trademarked as Symbiosys, to assist other entities in dealing with "waste" that can become useful products and protecting the environment for future generations.

Belmont BioAg will be the first industrial agricultural campus that will implement these new ideas. It will be the first of its kind in the world. The group, mostly with roots in southwestern Wisconsin, envisioned the project's construction and ultimate employment as enhancing and supporting the future economy of this area first. Baye noted that was in light of Wisconsin's history of being a good steward for the environment. "If we can do this in Wisconsin, we can do this anywhere," Baye said. "We have set high standards for ourselves."

"We intend to attract well over \$100 million in capital for the project," Baye said. An additional \$25 million will be sought for startup inventory—corn, cattle, and other supplies needed for the ethanol plant, digesters, feedlot, generators, and greenhouse complex. As much as possible, BBA will use local construction firms and labor. BBA expects to employ 67-72 people full-time, many in technical positions with salaries above the average in the area, and additional jobs through contracted services to manage and operate the greenhouse. An average of 169 trucks a day will bring in corn, cattle, and other supplies and export finished cattle, wet distillers grain, food product CO₂, biogas, ethanol, and commercial-grade fertilizer, along with bedding and seasonal plants. Annual purchases of corn and cattle will provide millions of dollars of income in the area.

The Symbiosys process includes contractors from around the world. "We have an enviable team," Baye said. Earth Tech, Inc. is responsible for design engineering, procurement, and construction management. Delta-T will implement its latest technologies in the ethanol plant. The anaerobic digesters and wastewater treatment will be from Bioscan of Denmark, whose technologies convert organic waste into clean water, green energy, and fertilizer concentrates. Crane Engineering of Neenah, Wisconsin, will handle much of the materials handling and connection systems. Caterpillar will provide the engines for the industrial generators that process biogas into electricity for the campus. The integration of these systems Baye noted, will likely make BBA a net energy generator, meaning it should use less than it produces.

Family farms with cattle dotting the landscape are what people normally envision when considering agriculture in Wisconsin. However, when members of this group started looking around, they found many farms had begun to specialize on grain production, eliminating cattle. They also figured many people will be skeptical of the processes' stated environmental impact, as well as whether the project will help the family farm or begin to push them out. Baye said the group is ready to answer questions, and, in fact took the initiative by calling neighbors to meet with them and explain the

project.

In lieu of filing for state permits and applying for participation in the DNR's Green Tier program, the group recently convened a Citizens Advisory Group (CAG) charged with evaluating the process and raising further concerns and questions. "They were skeptical and asked good questions," Baye said. The CAG, made up of members associated with environmental, political, community, farming, and business, including former DNR secretary George Meyer and several environmental scientists, heard from many specialists. "The effort is sincere," Baye said, "as the process is intricate. We want to provide the transparency needed for understanding that this project is good for the community and for the environment."

When financing and state permits are acquired, the campus won't be operational for another 18 months. Currently, Belmont BioAg is working closely with the state on permits for the project, which will use 160 acres.

Through the Green Tier Program initiated by Governor Doyle, developers and state officers work together through the permit process to reduce the timeframe and to place accountability upfront. Belmont BioAg is hopeful that the DNR will accept its requests for participation in this program. For more information about Wisconsin's Green Tier program see: <http://www.dnr.state.wi.us/org/caer/cea/environmental/>