

# Climate Friendly Farming™ Research and Demonstration Project

Center for Sustaining Agriculture & Natural Resources  
Washington State University

Quarterly Update for Vulcan, Inc.

February – April 2005

## Milestones:

- *National Exhibition:* The Climate Friendly Farming Project was Washington State University's featured display at the National Association of State Universities and Land Grant Colleges' (NASULGC) annual Food and Agricultural Science Exhibition on Capital Hill on March 1. An estimated 700 people attended the event. WSU's Administrative Delegation highlighted the project in special visits to each of Washington's Congressional Delegates.
- *Dairy System (Whatcom County):* The Vander Haak Dairy held an open house and tour of their now operational commercial digester on March 10. More than 150 people attended, including project partners from public (federal, state, county and local jurisdictions) and private organizations, political officials and Congressional Staff, farmers, and members of the community. The digester has reached the target of 300 kw of electricity from only 1100 cows (digester is sized for 1500 cows). The Vander Haak's are being honored with an "Environmental Hero" Award by *ReSources* on May 21<sup>st</sup>.
- *Dairy System (Tech R&D):* Designs for the first 25-cow prototype of the Chen group's novel anaerobic digester have been provided for build out to the Andgar Corporation of Ferndale, WA. The digester is scheduled for construction and installation at the WSU Knott Dairy by July 1, 2005. Dr. Chen will also be hosting Governor Gregoire in a tour of the anaerobic digestion and bioproduct research laboratory on May 7 when the Governor is in Pullman to give the 2005 Commencement Address.
- *Dryland Cropping System:* Based on first year results and discussion, priority emphasis in the dryland cropping system component to Precision Nitrogen Management (GIS / GPS enabled technologies such as combine-mounted yield and protein monitors, variable rate Nitrogen applicators, etc.) as potentially the most effective short-term impact greenhouse gas management technology. Additional resources have been secured for work on the WSU Cunningham Agronomy Farm and a large grant for demonstration of this suite of technologies on 4 partnering commercial farms was submitted to USDA Natural Resources Conservation Service this spring.
- *Irrigated Cropping System:* Along with continued monitoring of GHG emissions from irrigated cropping systems, the biofuel variety trial at the Paterson Research farm has continued to gain interest. Dr. Collins has expanded the trial both in

acreage and in types of crops being tested for both biodiesel and cellulosic ethanol feedstocks.

- *Modeling*: The Carbon and Nitrogen prototype model has been finished and is ready for incorporation into the cropping systems simulation model CropSyst. Evaluation of the potato model component of CropSyst is near completion.
- *Socio-economic*: A web-based version of the prototype “conservation technology” adoption study completed in year 1 is now ready for implementation. Additional development of Climate Friendly Farming budgets (integrated enterprise, social benefit/cost, “green” indices, etc.) is continuing.
- *Outreach*: A workshop on Dairy Anaerobic Digestion was held in Sunnyside, Washington on February 25<sup>th</sup>. More than 90 people (35 dairy producers) attended the workshop. Three of the top AD experts in the US (Phil Lusk – Resource Development Assoc., Mark Moser – RCM Digesters, and Steve Dvorak – GHD Inc.) presented. Participants and partnering organizations were extremely pleased with the event and requested that we begin plans for a follow-up workshop near the end of the year.
- *Institutional Change*: Dwayne Buxton, Pacific West Area Director of the USDA Agricultural Research Service gave personal commendation to the Climate Friendly Farming Project as “an example of good cooperation between ARS and WSU and the synergy that follows”. This is of particular note considering recent budgetary concerns for ARS.

### **Grants:**

*Additional funding related to the project totals \$1,437,920.*

### *Received:*

- Whatcom County for fiber research (\$110,000)
- Washington Department of Ecology for straw management/crop rotations to reduce burning (\$63,000)
- Washington Department of Ecology for a mobile anaerobic digester (\$100,000) plus a match from other WSU departments (\$66,000)
- Columbia Plateau Wind Erosion/Air Quality Project for flex cropping and chem fallow potentials (\$90,000) and assessing adoption of Best Management Practices (\$15,000)
- Farming and the Environment (Kellogg Foundation) for a policy forum (\$25,000)
- NRCS Conservation Innovation Grant for co-product demonstration from anaerobic digestion (\$683,920).

- USDA SBIR (with Andgar Corporation) animal waste management (\$80,000) for research leading to the commercialization of Dr. Chen's novel approach to anaerobic digestion
- Washington Technology Center for research leading to the commercialization of Dr. Chen's novel approach to anaerobic digestion (\$105,000)
- Pacific Northwest Solutions to Environmental and Economic Problems - STEEP (\$100,000) for precision agriculture and organic cropping systems.

*Recently submitted proposals for which we have not received notification include:*

- Lauzier Foundation (\$500,000) for facilitating the emergence of a bioenergy industry in the Columbia Basin.
- USDA Natural Resource Conservation Service Conservation Innovation Grants (\$683,000) for Precision Agriculture / Nitrogen Conservation strategies in dryland cropping systems.
- USDA / DOE Biomass Research & Development Initiative (\$1,839,000) for advancement of a Biodiesel Industry in the Pacific Northwest via Development of Co-Products and an Integrated Economic, Business Model.

### **Developing Issues:**

- Field days for the dryland and irrigated research farms are scheduled for June 23<sup>rd</sup> and early July respectively. These are key opportunities for producers to learn about ongoing research and technology development activities. Key topics will be Precision Nitrogen Management for the dryland farms and Gaseous Nitrogen losses and the biofuel variety trials for the irrigated farms.
- A new level of synergy has recently developed between the Climate Friendly Farming Project and the Small Farms Program (both housed at the Center for Sustaining Ag & Natural Resources) around small-scale applications of on-farm bioenergy resources, such as small-scale production / processing of oilseeds for on-farm biodiesel use. Plans are underway for an on-farm energy symposium at the annual meeting of the Washington Tilth Producers (organic farmer organization) in November of 2005. In addition, discussions have begun on developing a small-scale anaerobic digester demonstration project for small, diversified farms in Washington. While large-scale impacts on greenhouse gas emissions from bioenergy development will necessitate continued movement in the commercial ag sector, activity from small producers may move much more quickly due to the close connection between these producers and their consumers, their more entrepreneurial character, and less capital intensive technologies.

- Thanks to the NASULGC Exhibition, the success of the Vander Haak digester, and the leveraging of other research grants, the Climate Friendly Farming Project has gained considerable public consideration in recent days – particularly with Washington State’s Congressional Delegation. Members of the team have recently been invited to participate in meetings with Senator Cantwell, Representative Inslee (Seattle / Bainbridge), Governor Gregoire and staffs from several others. Senators’ Cantwell and Murray, Governor Gregoire and Representative McMorris (Eastern Washington) have all provided letters of support for recent grants submitted by the Project Team. Senator’s Cantwell and Murray and Representative Larsen (NW Washington) all sent staff members to the Vander Haak Open House in March. Senator Cantwell is planning a personal visit later this year.