Middlebury

January 6, 2011

**To whom it may concern:**

**Willow Project brief description:**

Middlebury College is working with State University of New York's College of Environmental Science and Forestry to test the feasibility of growing willow shrubs on Middlebury College land for use in the College's combined heat and power biomass gasification plant. The 10-acre test plot was started in 2007 and will be cut for a test burn in January 2011. Five varieties of willows were field planted by machine to represent a mass planting. Thirty other varieties were hand planted in a grid to allow for more controlled study. Researchers are doing soil and water tests in the hand-planted plots and are applying measured amounts of compost, cow manure, and fertilizers to test the results against a control plot. Middlebury faculty and students conducted a summer long study of bird and small mammal diversity in the willows compared to other surrounding habitat types. All of this research will help Middlebury decide which varieties of willow could be planted in the future. This project is aimed at reducing overall carbon emissions by the College, growing a renewable fuel source close to the campus, and finding ways to do so ecologically and that cause more carbon sequestration in the soil.

The Middlebury College willow shrub pilot project is worthy of a STARS innovation credit for the following reasons:

- It is a unique innovative project that builds off of another unique innovative project – the college's $12 million biomass gasification system which has displaced the consumption of 1,000,000 gallons of fuel oil replaced by local, renewable woodchips from within 75 miles of the campus.

- The willow project is also aimed at providing a new economic opportunity in the local agricultural economy. The College hopes to learn how to scale up once the research results are in and produce half of its chip supply through willow shrub production on lands within 5 to 10 miles of the campus.

- Not only would this bring new $ into the local agricultural economy, it would provide a biomass fuel source that would not rely on harvesting "waste" wood from local forests and creating more capacity for other uses.

- The project is also designed such that willow chip harvesting would take place in the winter for use in the biomass plant. There are 41 public schools in Vermont that have small biomass heating systems and they come into the chip market in late Fall through Winter. The College hopes that it could grow and harvest enough willows during the winter that it won't compete with these public schools for chips and ease up on the price pressure.

- The project ties in wonderfully with the educational mission of the College by providing research and study opportunities of a project that integrates with the College's goal of carbon neutrality by 2016 and provide students and faculty with a way to better understand a whole systems approach that includes land management, ecology, energy, economics, and the pragmatic realities heating and powering a community of 4,000 people.

The project also has significant value beyond the College as there are four small cities in Vermont that are developing plans to build biomass district heating systems and the issue of supply is a crucial one. This project will provide significant insight and information to those efforts as they work through their planning and design.

Finally, there is no other such project in the region although there is considerable interest in using biomass as a fuel source. This project will also provide real world, on the ground experience and expertise in terms of learning how to grow biomass for the best balance of ecological and energy needs.

Sincerely,

Thomas J. Corbin
Assistant Treasurer and Director of Business Service