

Contact at HamiltonClark:

John J. McKenna  
(703) 288-5277  
john.mckenna@hamiltonclark.com

Contact at NREL:

Mr. George Douglas  
(303) 275-4096  
George\_Douglas@nrel.gov

## **HamiltonClark and the National Renewable Energy Laboratory Sign a Cooperative Research and Development Agreement for Research Leading Toward the Potential Commercialization of Cellulosic Ethanol from Switchgrass**

**McLean, Virginia – September 26, 2006 – Hamilton Clark & Co.**, an investment banking firm focused on energy technologies, is organizing a new integrated biofuels company to produce fuel ethanol from energy crops. Renewable energy crops such as switchgrass can reduce the U.S. dependence on expensive imported oil, reduce global warming by cycling vast amounts of carbon, and produce fuel ethanol for automobiles at competitive prices, without impacting food production. HamiltonClark's strategy is to utilize innovative as well as traditional upstream, midstream and downstream ethanol production methodologies to produce liquid fuels from dedicated energy crop projects located in the Southeast United States.

Today HamiltonClark and the **U.S. Department of Energy's (DOE) National Renewable Energy Laboratory** (NREL) announced that they have finalized a Cooperative Research and Development Agreement (CRADA) between HamiltonClark and NREL, with DOE's **Oak Ridge National Laboratory** (ORNL) also contributing as a subcontractor to NREL. Once funded, the CRADA will be organized and staffed by NREL and ORNL experts. Upstream and midstream analysis focused on the technical feasibility and cost of commercial cultivation and logistics of switchgrass production, sequestration of carbon, and delivery to biorefineries in the Southeast will be conducted by ORNL at their Oak Ridge, TN campus. Downstream analysis focused on the best commercial biorefining technology and biorefinery optimization at scale will be conducted by NREL at their Golden, CO campus. This analysis will be similar that the DOE has sponsored at NREL and ORNL which models the commercial production of cellulosic ethanol from corn stover. The CRADA will examine the technical and economic feasibility of potential pilot plant feedstock consumption of 200 tons per day of switchgrass, pre-commercial plant feedstock using 2,000 tons per day and commercial plants requiring 20,000 tons of switchgrass per day. At anticipated yields, a 20,000 ton per day switchgrass-to-ethanol plant could produce 33,000 - 50,000 barrels per day – or 500 to 700 million gallons per year – of denatured fuel grade ethanol.

HamiltonClark is coordinating the CRADA and is also seeking industry and financial partners to join a new company which will commercialize the CRADA's anticipated breakthrough results. The report findings and results will be subsequently made available to DOE policymakers and scientists to help speed the national program for commercialization of cellulosic ethanol production.

Commenting on the value of this CRADA, **John McKenna**, CEO of HamiltonClark stated, "We believe that the future of transportation fuels in the U.S. includes renewable energy crops like switchgrass-produced ethanol in addition to fossil fuels like petroleum-produced gasoline. Cellulosic ethanol produced from switchgrass is a triple bottom line opportunity: it can be very profitable, it mitigates global warming by cycling a huge amount of carbon, and it offsets expensive imported oil from unstable countries". In addition, he stated that "We want to solve the challenging issues of integrating this business from the farm to the gas pump by working closely with international integrated oil companies and major auto manufacturers. We want to make this happen, and make it happen soon."

**Dr. Michael Pacheco**, Director, National Bioenergy Center at NREL stated, "We are happy to be working with HamiltonClark on this CRADA. We also believe that these are challenging issues but our team of professionals at NREL and ORNL are dedicated to solving them. Cellulosic ethanol is clearly part of our energy future and this CRADA for the analysis of the switchgrass option will provide valuable information for another pathway to cost-competitive domestic fuels".

**About HamiltonClark:** Hamilton Clark & Co. is an investment bank that focuses on energy and energy technologies. With offices in Washington, DC and Houston, TX, it works with energy and technology companies in traditional, alternative and renewable energy. Information regarding HamiltonClark is available at [www.hamiltonclark.com](http://www.hamiltonclark.com).

**About NREL:** NREL is the U.S. Department of Energy's primary national laboratory for renewable energy and energy efficiency research and development. NREL is operated for DOE by Midwest Research Institute and Battelle.

Information regarding NREL is available at [www.nrel.gov](http://www.nrel.gov).

**About ORNL:** Oak Ridge National Laboratory of the U.S. Department of Energy, is managed by UT-Battelle, LLC. ORNL creates scientific knowledge and technological solutions that strengthen the nation's leadership in key areas of science; increase the availability of clean, abundant energy; restore and protect the environment; and contribute to national security. Information regarding ORNL is available at [www.ornl.gov](http://www.ornl.gov).

Contact at HamiltonClark:           John J. McKenna, CEO  
  (703) 288-5277  
  [john.mckenna@hamiltonclark.com](mailto:john.mckenna@hamiltonclark.com)

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