Statement of Bill Brady

CEO of Mascoma Corporation

For

The United States Senate Committee on Energy and Natural Resources

Hearing to Review Department of Energy Biofuel Programs and Biofuel Infrastructure Issues

April 7, 2011

Good morning, Mr. Chairman and members of the committee. My name is Bill Brady, CEO of Mascoma Corporation and Chairman of the Advanced Ethanol Council, a group of companies leading the development and commercialization of advanced ethanol technologies.

Mascoma is an innovative biofuels company committed to developing environmentally sustainable, low cost, low carbon biofuels from cellulosic biomass. The company's corporate office and R&D laboratories are based in Lebanon, New Hampshire. Mascoma is producing cellulosic ethanol at a 300,000 gallon demonstration scale at its facility in Rome, New York. We are also developing a 40 million gallon per year commercial scale project in Kinross, Michigan. Our hope is to begin construction on this facility this fall pending achievement of several milestones, some of which I will discuss today.

Background on Mascoma's Technology and Research and Demonstration Facilities

Mascoma's Consolidated BioProcessing method converts non-food biomass feedstocks into cellulosic ethanol through a patented process that eliminates the need for costly enzymes and additives. This transformative technology enables ethanol competitively priced with gasoline to be derived from cellulose in a manner not previously possible. The processing steps involve:

1. Selective harvesting of pulpwood.
2. Chipping of excess pulpwood (the feedstock we are using in our first plant).
3. Pretreating the feedstock by cooking and processing the wood chips into a softened material similar to peat moss.
4. Combining the pretreated material with proprietary microorganisms in a fermenter, and fermenting the cellulose into ethanol.
5. Recovering ethanol and lignin from the process. Cellulosic ethanol is blended with gasoline as a low carbon motor fuel. The unconverted fiber, called lignin, is used as a low carbon boiler fuel or converted into other non-ethanol fuels.

Mascoma's aim is to develop the lowest cost technology to convert cellulose materials into ethanol that we will, in turn, use in commercial scale ethanol facilities in rural America that will create new economic opportunities for local feedstock providers, create jobs, and lessen our dependence on foreign oil.

At our labs in Lebanon, New Hampshire our team of 60 scientists are continuing to make significant advances in our CBP process by improving upon our advanced biocatalysts for the cost effective conversion of cellulosic biomass into ethanol.

Our demonstration facility in Rome, New York has been in operation since the fall of 2008. It is here that our integrated team of scientists, engineers, and experience plant operators validate the organisms we have developed in Lebanon at large scale. It is also where new process technologies are implemented before being included in our designs for our commercial facility.

Mascoma has been fortunate to have received grant funding from the Department of Energy to augment private equity in our research and demonstration activities in Lebanon and Rome. I thank the Committee for its leadership in providing DOE with this important authority.

Efforts Underway to Develop First Commercial Facility

Mascoma, in conjunction with J.M, Longyear, a Michigan-based natural resource management company that is certified under the Forest Stewardship Council, is actively developing the first commercial scale production facility through its affiliate Frontier Renewable Resources in Kinross, Michigan. The facility will use sustainable, lower-value wood products such as pulpwood to produce 40 million gallons of cellulosic ethanol per year.

The $350 million Kinross biorefinery will be located in a rural area in the Upper Peninsula of Michigan. The plant will be constructed on a site near a decommissioned U.S. Air Force base. The facility is strategically located in close proximity to approximately 8.3 million acres of timberlands. Annual growth in these forests exceeds harvest by 1.8 million tons annually and the Kinross facility could double its expected production levels and the area would still have an annual surplus of growth. Beyond this, a recent analysis by Michigan Technological University found that the Kinross facility will reduce greenhouse gas emissions by 108% compared to gasoline.

The construction and operation of a cellulosic ethanol plant in this area will create jobs and develop demand for underutilized regional hardwood timber resources, providing support for the local economy. It will employ 150 people during construction. Once operational, the plant will employ 70 highly skilled people, and create 700 spin off jobs in the region according to estimates by the state of Michigan.

In the past year, we have made substantial strides in developing the Kinross site in regards to technology development, supply chain development and securing additional financing.

On the technology front, cellulosic ethanol produced at our Kinross facility will be competitive with oil at $75 per barrel. In addition, we will be competitive with corn ethanol today when compared on a cash cost basis. On the financing and supply chain front, we announced, in January, that Valero Energy Corporation invested in Mascoma and will be partnering with us in the Frontier project. Additionally, we have a pending loan guarantee application under consideration at the Department of Energy.

We have made considerable progress. However, we know we need to continue to drive down our costs to make cellulosic ethanol even more competitive in the marketplace. This is our job and our commitment. We will also need strong continued and consistent federal policies to help us reach our goal of breaking ground in 2011 and beginning operations in 2013.

Need for Continuing Role of the Federal Government

Advanced and cellulosic ethanol companies like Mascoma have made significant progress in recent years in large part because of backing of venture and strategic investors. Our technologies are well developed and proven at demonstration scale. What is needed is a significant capital infusion to scale up to full commercial operation. Venture capital firms do not provide this type of financing. Most private equity firms want to see that the technology works before they will commit large scale funding. Debt providers either won't engage because of risk or set the cost of debt too high in comparison to relevant risk. While companies like mine have been able to secure investments from strategic investors, a delta still exists. This is the so-called "valley of death."

It is during this critical time that clear signals must be sent to the marketplace about the Federal government's commitment to advanced biofuels. As we move forward in our discussions with investors, there are three critical areas where the Federal government needs to provide consistency.

First, Congress must maintain DOE's authority and funding to provide renewable energy loan guarantees. To cross the valley and start construction of projects in 2011, this loan guarantee authority represents the best available tool for many projects. Last week, 34 CEOs with loan guarantees pending at DOE sent a letter highlighting that their projects represent an additional $24 billion in near-term investment in America's energy infrastructure and would put another 35,000 Americans to work. Additionally, seven leading trade associations representing, biofuels, biomass, wind, solar, and geothermal interests also sent a letter highlighting support for the program last week. With high crude oil and gasoline prices and a RFS2 mandate calling for significantly more gallons of cellulosic biofuels, now is not the time to eliminate this program. It will delay projects and undermine confidence in the investment community.

Second, the market signals for cellulosic ethanol provided by the RFS2 and the cellulosic biofuels production tax credit must be maintained. The RFS2's call for 36 billion gallons of renewable fuels including 16 billion gallons of cellulosic biofuels including the cellulosic waiver

credit pricing mechanism are extremely important. Efforts to weaken this commitment must be avoided. In addition, the existing cellulosic biofuels production tax credit (PTC) is important to our financials in the near term as our capital and production costs continue to decline. The existing PTC is set to expire at the end of 2012. Ideally, our industry would like to see long-term (10 year) tax incentives for advanced and cellulosic biofuels. Engaging in a yearly extenders game surrounding the cellulosic biofuels production tax credit will not provide the kind of consistent market signal that investors are looking for when making decisions in this industry. As you can imagine, incentives that expire before a facility is placed in service are very hard to market to investors. Well developed projects that break ground this year will likely not be in production until 2013. A one year extension of tax incentives that expire in 2011 or 2012 do not provide the type of certainty investors are looking for when making investment decisions.

Third, the United States needs to make significant progress in breaking through the existing ethanol blend wall to ensure sufficient head room in the fuel marketplace for advanced and cellulosic ethanol. Investors are very aware of the limitations of the existing blend wall. While EPA, with the support of DOE and other agencies, have spent significant time working to approve increased ethanol blends in the existing automobile fleet from E10 to E15, focus needs to shift to removing infrastructure hurdles preventing the use of even higher ethanol blends in the future.

In 2007, GM, Ford, and DaimlerChrysler committed to increasing production of FFVs to 50% by 2012 conditioned on having sufficient E85 refueling infrastructure to meet this demand. While this was an important step forward, pledges and incremental progress help only to a degree. A robust commitment to FFVs is necessary to unlock the potential of advanced and cellulosic ethanol and provide investors with the certainty they need. Besides producing vehicles that are capable of running on high ethanol blends, efforts need to be focused on installing blender pumps that can handle higher ethanol blends in our country's approximately 180,000 gas stations. Today, there are only approximately 2,300 E85 pumps (up from 1,200 in 2007) at those 180,000 stations. Addressing vehicles and pumps are essential to improving the investment climate and ensuring sufficient consumer demand for advanced and cellulosic ethanol. I commend Senator Harkin's efforts to address these issues in S. 187, the Biofuels Market Expansion Act of 2011 and thank the committee for holding this hearing on this critical issue.

Conclusion

The time is now for the United States to make significant strides in the commercialization of advanced and cellulosic ethanol. The technologies are ready. Unfortunately, the valley is before us, and the market signals that will help drive investment are less than clear. High oil prices are not only driving up gasoline prices at the pump, but the costs of goods and services across the entire economy. The U.S. is spending $560 billion annually to import foreign sources of oil which make up 60 percent of our total oil requirements. In 2008, the price spike in the gasoline market cost the United States nearly $1 trillion. It would be far better to invest funds to

build out the advanced and cellulosic ethanol infrastructure that our country so badly needs for our energy security and economic well-being.

Putting in place a consistent, long-term federal policy for advanced and cellulosic biofuels including significant focus on higher-blend ethanol infrastructure and FFVs is critical to continued development in the United States and its ability to continue to keep pace with clean energy investments of other countries.

Thank you.