

# POET Research Center – Scotland, S.D.

Grand Opening Speech – Jeff Broin, CEO, POET

January 12, 2009

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Thank you, Nathan. And thanks to everyone who was able to join us on this call.

Twenty years ago, I was in Scotland, South Dakota, retrofitting an ethanol plant that my family had recently purchased out of bankruptcy. Our goal then was to make the corn ethanol process economically viable and it succeeded beyond what we could have expected.

In the two decades since then, POET has been producing ethanol from a renewable resource: our nation's corn crop. Along the way, we have continuously improved the efficiency of the production process, so that today we get more out of a bushel of corn than ever before.

That first plant in Scotland, South Dakota was also the birthplace of POET's many innovations in the corn ethanol process. It's where we first fractionated the corn kernel in order to make better use of its component parts. Where we first fermented ethanol without heat, significantly cutting our energy usage. Today, in addition to our starch ethanol plant, we also have a starch pilot plant that is continuing to make the corn ethanol process cleaner and greener. In part because of that first plant, ethanol made from corn has less than half the greenhouse gas emissions of gasoline and is providing the foundation upon which the cellulosic ethanol industry will be built.

And now, after 20 years of producing ethanol from corn, it is the first plant where we are producing cellulosic ethanol from corn cobs. That's why, today, I am excited to announce the next step in POET's quest to commercialize the production of cellulosic ethanol. The last major step before we construct a commercial scale plant.

Although we have been looking at cellulosic ethanol since our inception, we waited until the time was right. For more than eight years, our scientists have been toiling in the lab to produce ethanol from cellulosic feedstocks. They've achieved many innovative breakthroughs over those years, but there is no shortage of scientists who can produce cellulosic ethanol in a beaker. The challenge for everyone has always been to make the process commercially viable so that it can be produced in the large quantities that our nation needs.

Late last year, POET took the next major step in that direction. That's when we started operating a pilot-scale facility here at the POET Research Center. Today, at our facility in Scotland, we are producing cellulosic ethanol from corn cobs.

Design and construction of the cellulosic pilot plant took six months and cost just over eight million dollars. It is adjacent to our nine million gallon per year grain ethanol plant and our grain-based pilot facility.

What we have today is an operating cellulosic ethanol production facility with the flexibility of a lab. This is a miniature version of our commercial cellulosic plant, Project LIBERTY, which will start producing in 2011.

It will allow us to evaluate numerous pretreatment options, enzyme combinations, ethanologens and every other aspect of the process. The facility will also allow us to learn the way in which each step interacts with every other in a continuous process. What's inside that facility will be replicated in our commercial plant, allowing us to shorten the time it takes to develop an economically viable process.

So far, the facility is performing above our expectations. Within the first 30 days of operation, we had produced more than 1,000 gallons and were able to replicate the results we had achieved in our labs. We are now moving on to the evaluation of things we can't do in the lab, like how the biomass flows through the process. We are learning new things every day. Things we could never have learned in a lab setting.

Our initial results have confirmed our belief that corn cobs are an excellent source of biomass for ethanol production. Their high cellulose and hemicellulose content has allowed us to successfully convert them into fermentable sugars. We continue to increase our percentages of ethanol in fermentation and improve the overall yield of ethanol from corn cobs.

There are numerous other benefits to corn cobs as a cellulosic feedstock. Because of their relatively high bulk density, transportation to the biorefinery is achievable. We've found that they don't significantly biodegrade when stored in the field. Because they are being grown today, they don't require farmers to plant a new crop. And there are lots of them. Enough to produce five billion gallons of ethanol every year. That's five billion gallons of ethanol that can come from what is a waste product today.

Our cellulosic plans include reusing a byproduct of cellulosic production to power both the cellulosic process and the integrated grain ethanol process. We will soon be starting up an anaerobic digester in Scotland so that we can test the utilization of waste streams in alternative energy production. We are also looking at ways to optimize the process so that we can minimize our energy usage. That's part of the reason that a gallon of cellulosic ethanol is projected to reduce greenhouse gas emissions by nearly 90 percent in comparison with gasoline.

Our team is having a lot of successes on several fronts, but achieving commercial scale is not still without challenges. Handling large quantities of grain is something the agricultural community has perfected over decades. We have to invent similar processes when it comes to corn cobs. Dealing with the new fermentation process also requires relearning what we already know about grain-based fermentation. Finally, we still must optimize the use of enzymes and ethanologens.

Using the pilot facility as the testing ground, our team stands ready to meet these challenges and any others that present themselves along the way. Our goal – one that I believe is achievable – is to have this process ready for commercialization by 2011.

But the work happening here is not in isolation. Our partners in commercializing cellulosic ethanol are many. They include the U.S. Department of Energy and the state of Iowa, universities, enzyme companies, agricultural equipment manufacturers, investors and farmers across the Midwest.

With the completion of this facility, POET has taken the next big step alongside those partners in the drive to commercialize cellulosic ethanol, which is something our country

desperately needs. By producing ethanol from cobs in addition to corn, we can create more green jobs while addressing two of our country's most pressing concerns: global warming and a dangerous dependence on foreign oil. It won't be easy, but POET is firmly focused on this important task.

Thank you.