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Dear California Air Resources Board,

Although POET is currently the largest producer of ethanol in the world, our company got its start on my family's farm in Wanamingo, Minnesota in 1983, with a small plant that produced fuel for our vehicles and those of some of our neighbors. We made our first foray into commercial production when we purchased a bankrupt ethanol plant in Scotland, S.D. four years later.

Since the beginning, POET focused much of our resources on improving the efficiency of ethanol production. When we entered the industry, most of the plants were sitting idle because they were inefficient and costly to operate. We were determined not to let that happen to our plants.

Today, the plants we build and the processes we use are much different from those that were around when the industry was founded. But even more incredible are the advances these facilities and processes have made in just the past few years.

The environmental benefits of those industry-wide improvements in efficiency are evidenced in a recent study by Dr. Ken Cassman of the University of Nebraska – Lincoln. The peer-reviewed study, published in Yale's *Journal of Industrial Ecology*, focused on the efficiency of plants built since 2004. The results are impressive:

- Direct-effect greenhouse gas emissions were cut 48% to 59% compared to gasoline, a twofold to threefold greater reduction than studies that look at all plants collectively.
- The average net energy yield is 1.5-1.8 (units of energy for every 1 unit of energy spent), with the most efficient plants yielding more than 2.2 units of energy.
- Ethanol-to-petroleum output/input ratios are between 10:1 and 13:1.

According to the study, those newer plants currently represent 60 percent of industry capacity and will account for 75 percent by the end of the year. Even for POET, who has been producing ethanol as long as anyone, 16 of our 26 plants, representing two thirds of our 1.5 billion gallons of production capacity, are among these more efficient plants built since 2004. Also, we continue to upgrade our older plants, so all 26 of our plants would represent these higher efficiencies.

Although we have focused on research and development since our inception, it was also in 2004 that we began to commercialize many of our most impressive innovations.

In that year, we launched BPX®, a process that converts starch to ethanol without heat, reducing energy and water use significantly while enabling us to get even more ethanol from a bushel of corn. Soon after, we implemented BFRAC, which separates corn into three fractions: fiber, germ and endosperm. The



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endosperm is used to create ethanol while the remaining fractions are used for co-products including distillers grain, bran cake, corn germ meal and corn oil. This process further decreased energy consumption.

We have spent the past few years incorporating these and many other efficiency improvements into our industry-leading production facilities. Many of these facilities are supplying ethanol to the California market, and I'd like to mention three.

First is our facility in Ashton, Iowa. The facility produces 56 million gallons of ethanol per year (MGPY) and uses a natural gas-fired turbine to cogenerate heat and power, requiring approximately 16 percent less fuel than typical onsite thermal generation and purchased electricity. The U.S. Environmental Protection Agency (EPA) awarded POET an ENERGY STAR Award last year for the system which saves 18,900 tons of CO2 emissions per year. It is one of three POET plants that have received an ENERGY STAR award for cogeneration.

The second is a 110 MGPY facility in Chancellor, S.D. This plant gets 60 percent of its energy from renewable wood sources in the area. In February we began receiving methane gas at the facility from a nearby landfill to also power the solid waste fuel boiler. The wood and methane already significantly cut our fossil fuel use, and as the methane output increases over the next 15 years, they will displace up to 90 percent of our plant's energy needs. The EPA estimates that this project eliminates as much carbon as would removing more than 344,000 barrels of oil.

But to get a real look at the future, consider our plant in Scotland, S.D. In late 2008, POET started up a pilot plant that produces cellulosic ethanol from corn cobs, an agriculture waste product. That cellulosic plant is integrated with our corn ethanol plant at the same location. In the next 6-8 weeks, we will finish installation of an anaerobic digester that will use a waste stream from the cellulosic process to power the facility. At commercial scale, the leftover lignin will be used to generate energy to power both the cellulosic facility and the co-located grain ethanol facility.

What we are learning at the Scotland plant has put our cellulosic technology on pace to be commercially viable at another Iowa plant in 2011. Once we have perfected the commercial application, we plan to integrate the process into the rest of our 26 corn ethanol plants and license the technology to others in the industry.

That is POET's view of the ethanol industry's future. The starch ethanol plants located in the Corn Belt today will one day be integrated starch and cellulosic ethanol plants powered by alternative energy. There are enough available corn cobs to supply an additional 5 billion gallons of cellulosic ethanol to our fuel supply. Because we will be using the same farmers, production facilities and infrastructure, no new acres will be required to produce the additional ethanol.



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POET has spent considerable time and resources developing a low-carbon fuel in preparation for a carbon-constrained economy. When it was originally announced, we welcomed the opportunity to compete with other fuels on a level playing field under a low carbon fuel standard.

However, the proposed regulation unfairly disadvantages our company by overestimating our direct carbon emissions and selectively assessing indirect effects against ethanol while underestimating the direct emissions and ignoring the potentially significant indirect emissions of petroleum-based fuels. It also discriminates against our company because we do not have locations in California and we won't receive the more favorable treatment that California ethanol producers would enjoy. If CARB moves forward with this regulation, it will damage our existing business — effectively denying us access to the nation's largest market of liquid transportation fuels — and endanger our future plans. CARB should delay inclusion of an ILUC penalty against biofuels until the scientific community has had a chance to assess the indirect effects of all fuels, and it should continue to refine its accounting of direct effects based on the most recent data.

The technological improvements I outlined above were made possible by a government that recognized the significant benefits of ethanol for our environment, national security and economy. They set the goal; we met it and then surpassed it.

We would still be in the age of inefficient, farm-scale ethanol plants if not for the visionaries at every level of government who prompted efficiencies. The only way to continue these breakthroughs to develop the ethanol of tomorrow is to maintain a strong ethanol industry today and entice it to grow even further.

POET is not requesting special preference for our products. We are simply requesting the level playing field promised as part of the LCFS and that CARB hold ethanol to the same carbon accounting standard as petroleum, hydrogen, electricity, and all other fuels.

The ethanol industry has made tremendous strides in not only helping our environment, but reducing our reliance on foreign oil and helping our nation's economy. CARB should refrain from derailing those benefits with a well-intentioned but significantly flawed policy.

Sincerely,

Jeff Broin, CEO, POET