Novozymes written statement to California Air Resources Board
Public Hearing to Consider Amendments to the Low Carbon Fuel Standard Regulation
December 16, 2011

On behalf of Novozymes and its 829 employees across America – from California to North Carolina – we thank you for the opportunity to submit this statement for the record.

We appreciate the dedication of the California Air Resources Board (ARB) and its staff to creating a low carbon future and incentivizing technologies which can realize that low carbon fuel standard (LCFS) future. We share that commitment.

Today, we would like to highlight ARBs open working process and facilitation with regulated parties, supplier industries and other stakeholders. We believe this process has already enhanced the LCFS and should serve as a model for other carbon-limiting legislative and regulatory efforts.

Novozymes
Novozymes is a technology and science company; we respect and encourage both. We have more than 5,000 patents and 700 products at work in 130 countries: enzymes that remove trans-fats in food, lower the temperature needed to wash a consumer's clothes – and convert biomass, from switch grass or corn stover, into biofuels. Our technology saves consumers money and protects the environment for our children. California continues to lead the nation in environmental stewardship and, at our research facility in Davis, we are proud to continue that stewardship with cutting-edge research.

Like ARB, we imagine a world where everyday products are made with organic materials instead of oil, creating a lower carbon society:

- Transportation fuels made from agricultural and forestry waste and non-food energy crops, with greenhouse gas emission reductions up to 90 percent of their fossil fuel counter parts
- Detergents that clean thoroughly in cold water, reducing energy consumption, consumer spending and water pollution
- Plastics and polymers based on renewable biomass – not petroleum
- Renewable chemicals that are less harsh to the environment
- Food crops that require less fertilizer and water, yet produce higher per-acre yields
- Animal feed that promotes greater nutrient absorption, and reduce harmful by-products in animal waste

Technology Readiness
Biofuels are the only currently available option which notably limits CO2 emissions in transport in commercial quantities. That gives them a central role in the world's future, sustainable energy mix.

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The industry is constantly improving technologies and processes, delivering increasingly green and sustainable energy. But as an indication of the technology readiness of the domestic advanced biofuels industry, Novozymes is nearing completion of a state-of-the-art enzyme manufacturing plant in the Midwest, a $200 million investment in America's future. Our Blair, Nebraska enzyme facility has already created 140 construction jobs and will bring 100 permanent jobs when it opens in 2012. In fact, 45 full-time employees are already at work. These are good-paying, sustainable jobs for families creating sustainable energy for our country. Advanced biofuels projects can replicate this type of local economic development all over America, including California.

We believe private industry drives America's economy. However, we also believe a strong partnership is vital to the success of any emerging industry, where the private sector provides the innovation and lion's share of capital to develop it – and the public sector provides consistent policy support to grow it. This is just one reason why we are heavily invested in the creation, administration and adoption of the California LCFS.

Sustainability

Novozymes is committed to sustainable business and recognizes the importance of sustainable development for society to meet future needs while minimizing impacts on our environment. Sustainability is rooted in our company values and expressed in our ambition to "drive the world toward sustainability with our customers." Measurement and innovation are key aspects of success. We conduct Life Cycle Assessments on our products to understand their environmental impact and use that understanding to create solutions that help our customers improve the environmental performance of their products and processes. Taking a life cycle perspective also helps us understand global sustainability trends in climate change, pollution and water consumption. We continue to be a science-based voice that advocates for improvement in these and other issues that face our world.

Novozymes also continues to reduce our own environmental footprint. We have set ambitious goals of increasing our energy efficiency by 50 percent and water use efficiency by 40 percent over our 2005 baseline by 2015. These and other sustainability strategies have garnered numerous third-party recognitions including Gold Class status in the Dow Jones Sustainability Index.

GHG emission reduction for cellulosic biofuels are not yet based on large scale production, but the GHG emission reductions are repeatedly estimated to be between 80 and 110 percent. These results seem to be rather robust, particularly for crop residues. This is because there are no or low indirect land use change impacts and because the lignin co-product ensures that both biofuels and power are produced.

Advanced Biofuels: Many Benefits

We believe the review report from ARB staff should focus on the administration of the LCFS. Nevertheless, we also believe we must address world hunger, and we have continually acted on that belief.

Recently Novozymes made a commitment at the Clinton Global Initiative where, together with environmental venture group CleanStar Ventures, we established an integrated food–energy business in Mozambique, which is one of the countries pointed out in the new report from FAO on food insecurity.

The project will create incentives for rural Mozambicans to plant and maintain trees and grow crops, including cassava -- a starchy root -- for biofuels. It will also replace thousands of charcoal-burning cookstoves with cleaner ethanol stoves. Agriculture in the developing world holds an enormous potential. Through this partnership, local communities in Africa will be able to produce more food and energy while at the same time improving their health, restoring forests, cleaning the air, and growing the economy. We work with smallholder farmers to implement sustainable farming practices, create a food and ethanol cooking fuel production facility, and lay the groundwork for economically and ecologically sustainable communities in Sub-Saharan Africa.

Just last month, Bank of America Merrill Lynch signed an agreement to generate carbon credits for every metric ton of carbon dioxide that is avoided from displacing charcoal used in cookstoves. The upfront carbon finance obtained from voluntary carbon markets will go to purchase and maintain cookstoves.

Despite uncertainty in alternative energy policy, and an oil and gas industry that is able to count on long term favorable incentives and policies, the biofuels industry has accomplished significant advancements and innovations. If we have been able to achieve so much in so short a time with these uncertainties, imagine what we could do with more stability.

The technology is here and with continued public support, we can continue to provide viable, innovative solutions.

We thank ARB and its staff for its diligent work establishing and administering the LCFS. We look forward to working with CARB as California's LCFS continues to be evaluated and implemented and continue to be available as a resource as you move forward.