



**Written Testimony of  
The Biotechnology Industry Organization**

**Before the United States House of Representatives  
Committee on Ways and Means**  
Hearing on Energy Tax Incentives Driving the Green Job Economy

**April 14, 2010**

The Biotechnology Industry Organization (BIO) is pleased to provide this written testimony on the critically important topic of energy tax incentives driving the green job economy. BIO thanks the Committee for its continuing leadership in stimulating renewable energy, fuels and chemicals innovation and production and for convening this hearing to discuss how we can further incentivize innovative technologies which will lead the way to lowering our dependence on foreign oil imports, lowering our greenhouse gas emissions and also create thousands of green jobs ensuring that the United States is a leader in the technologies of the future.

BIO's membership includes more than 1,200 biotechnology companies, academic institutions, state biotechnology centers, and related organizations in all 50 states. BIO members are involved in cutting edge research and development of health care, agricultural, industrial and environmental biotechnology products that are revolutionizing advanced biofuels and green products such as bioplastics and renewable specialty chemicals, all replacing petroleum based counterparts.

### ***Background***

Industrial biotechnology is the key enabling technology for producing biofuels and biobased products like bioplastics and renewable specialty chemicals to aid in reducing our dependence on foreign sources of oil, thereby reducing greenhouse gas emissions. Industrial biotechnology is the application of life sciences to improve traditional manufacturing and chemical synthesis by using micro-organisms like bacteria and fungi as well as enzymes to improve manufacturing processes and make new biobased products and materials, including biofuels, from renewable feedstocks. Our member companies are using this technology to improve the yield, efficiency and energy inputs in first generation biofuels production, develop new feedstocks such as purpose-grown energy crops, broaden the use of algae technologies, make advancements in end molecule diversification for fuels and commercialize advanced biofuels, renewable specialty chemicals and bioproducts.

The United States has invested considerable amounts of taxpayer dollars to try to revive our economy. Too often, though, the resulting jobs are being created overseas, as other countries invest in green technology deployment. As a result, the opportunity to improve our economic competitiveness is lost. The United States is a leader in the research and development of green technologies, but to maintain that lead we must invest in the companies that are putting that green technology to work in our economy. To translate innovation into products for the market place, most small businesses need private capital. What government can do to help is encourage that private investment. If policies fail to do this, then innovation and jobs will go elsewhere. We've seen this happen with long-established industries, such as chemicals and plastics manufacturing. These industries have shed hundreds of thousands of domestic jobs over the past two decades, as petroleum producing countries have attracted more capital investment. U.S. chemical and plastics companies have increased capital investment outside the United States by 32 percent over the past decade, while increasing investment within U.S. borders by only 2 percent.

Because bioproducts use locally grown biomass as feedstocks and because biorefineries that produce biofuels, biobased chemicals and biobased products can be located anywhere in the country, making use of these local renewable raw materials and the people who grow them, will create jobs all over the United States that will stay in the United States.

### ***US Economic Impact of Advanced Biofuels Production***

The Renewable Fuel Standard (RFS) enacted as part of the Energy Independence and Security Act of 2007 (EISA) sets the minimum level of renewable fuel that must be produced and blended into the US transportation fuel supply at 36 billion gallons by 2022. Twenty-one billion gallons of that requirement must be cellulosic or advanced biofuels. Direct job creation from the advanced and cellulosic biofuels volumes in the RFS could reach 29,000 by 2010, rising to 190,000 by 2022. Total job creation could reach 123,000 in 2010 and 807,000

by 2022.<sup>1</sup> These jobs will be across many sectors of the economy. Some of the projected job creation sectors are: labor/freight, mixing and blending machine operators, shopping/receiving/traffic clerks, truck drivers, chemical equipment/technicians, chemical plant/system operators/electrical, sales etc.<sup>2</sup>

In addition, cellulosic feedstocks for advanced and cellulosic biofuels production are likely to come from a wide variety of sources, including crop and forest residues, urban wood waste, purpose-grown energy crops like switchgrass and miscanthus, and short rotation woody crops like poplar and willow. Based on economic impact and job creation assumptions, farm and forestry sector employment related to feedstock production, harvesting, transportation and storage would increase to 88,000 by 2022, while the total value of feedstock produced would exceed \$11 billion in that year.<sup>3</sup>

We would like to thank the Committee and Congress for recognizing the potential of cellulosic biofuels by enacting the cellulosic biofuels production tax credit (PTC) and accelerated depreciation as part of the 2008 Farm Bill. These provisions have helped drive strong investment in cellulosic biofuels development. However, due to the overall downturn in the worldwide economy and the impending expiration of the credits in 2012, their ability to spur construction of commercial facilities has been limited. These credits need to be extended now in order to signal to investors that a plant being constructed this year will have certainty in the availability of that tax credit once the plant begins production.

The tax code should also recognize the broad diversity in advanced biofuels producers and their business models by providing flexibility in electing the form of incentive that best suits a given project. Other renewable energy projects have the ability to elect an investment tax credit (ITC) in lieu of production tax credits. The tax code does not show the same flexibility for biofuels producers. BIO asks that advanced biofuels developers who need capital up front to construct a biorefinery be provided the option to receive an investment tax credit for their project.

Finally, algae-based fuels possess the same favorable characteristics as cellulosic biofuels in terms of job creation, energy security, and environmental profile. It is our understanding that they may not have been originally considered in the enactment of the cellulosic biofuel production tax credit due to limited awareness of algae's commercial potential. Because of this discrepancy, it is extremely challenging for algae-based fuel start-up companies to attract the capital required for commercial scale production. We hope that obtaining tax incentive parity for algae-based and cellulosic fuels will rapidly open the doors to financing of the first commercial scale algae-based fuels production.

### ***Biobased Chemicals and Products: A New Driver of US Economic Development and Green Jobs***

Recently a number of small U.S. companies have pioneered biotechnology applications for producing chemicals and plastics from renewable resources. Some of these renewable specialty chemicals and plastics can directly replace those made from petroleum in a range of products, such as food packaging and water bottles. Some companies are producing plastics with new environmentally friendly properties – such as a flexible choice between recycling or composting the end product – that can drive opportunities for new uses and markets. These innovations could help the United States further reduce reliance on imported petroleum while also cleaning up our environment. But again, these benefits can only be achieved if the companies can find the investment capital needed to expand production and create sufficient market space.

Historically, the U.S. chemicals and plastics industry was the envy of the world. At its peak in the 1950s, the industry was responsible for over 5 million domestic jobs and a \$20 billion positive trade balance for the United

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<sup>1</sup> James Newcomb, U.S. Economic Impact of Advanced Biofuels Production: Perspectives to 2030; bio-era, BIO Economic Research Associates (2009) pg 13 <http://bio.org/ind/EconomicImpactAdvancedBiofuels.pdf>

<sup>2</sup> *Ibid.* pg 11

<sup>3</sup> *Ibid.* pg 7

States. Jobs associated with the industry were typically among the highest paid in U.S. manufacturing<sup>4</sup>. However, the petro-chemicals and plastics industries are now hemorrhaging jobs overseas. Conversely, biobased products and chemicals production, like domestically produced biofuels, will stay in the U.S., in close proximity to their biomass feedstocks. Total US employment in the chemicals industry declined by over 20% in the last two decades and is projected to decrease further<sup>5</sup>. The US is a world leader in Industrial Biotechnology with a wide range of companies pioneering new, renewable pathways to traditional petroleum-based chemicals and plastics.

The potential job creation from bio-products is immense. Consider that the nascent biobased products industry employed over 5,700 Americans at 159 facilities in 2007 and every new job in the chemical industry creates 5.5 additional jobs elsewhere in the economy<sup>6</sup>. Currently the biobased products portion represents only about 4 percent of all sales for the industry. Targeted investment and production tax credits can help them to expand their share of the market and grow additional domestic jobs. As an industry with the potential to grow by over 50% per year, bio-products can form the basis for a strong employment growth engine for the US.

Strong federal support for pioneering production of biobased products is clearly warranted, but presently the tax code does not reward investment in these highly promising technologies.

### ***BIO's Tax Priorities***

*Congress Should Encourage Domestic Production of Biofuels and Biobased Products to Displace Fossil Feedstocks and Reduce Carbon Emissions:* Consistent, sustained and diverse federal support is the key to rapid growth of a sustainable advanced biofuel industry. Biotechnology is enabling the production of a new generation of advanced biofuels and biobased products – chemicals and plastics produced from renewable biomass – that can supplement or substitute for traditional petroleum-based fuels, chemicals and products. The emergence of this technology represents a historic opportunity to reverse job losses in the U.S. chemicals and plastics sectors, boost rural economies, lower our dependence on foreign sources of oil, increase U.S. energy security, and reduce greenhouse gas emissions. To help accelerate commercialization of this promising and vital new generation of renewable fuels and materials, Congress should:

#### Extend the Cellulosic Biofuel Production Tax Credit (IRC Section 40(a)) and the Cellulosic Bonus Depreciation Incentive (IRC Section 168(l)) through December 31, 2016

Because this tax credit, enacted in 2008, remains essentially unused due to lower than expected production volumes, and because the cellulosic biofuels industry is largely in the commercial scale biorefinery construction stage, this tax credit needs to be extended now and cannot wait to be considered for extension in two years when it is on the verge of expiring. Cellulosic biofuels producers looking for financing to build their first plant need to be able to rely on a production tax credit that will be there when their plant is up and running. Many producers, if they started building a cellulosic biofuels plant in the next 6-18 months, would not be producing fuel prior to the 2012 expiration date and therefore cannot include the expiring credit to their business plan to present to potential investors. Therefore, even if the credit were to get extended in 2012, it is not a useful market signal to build into a business plan of today.

Again, extending the cellulosic biofuel credit and the enhanced depreciation treatment through 2016 will provide American businesses the certainty they need to make long-term investment decisions in new cellulosic facilities and get plants built today.

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<sup>4</sup> Biotechnology Industry Organization, *Biobased Chemicals and Products: A New Driver of U.S. Economic Development and Green Jobs* (2010) pg 1 <http://bio.org/ind/20100310.pdf>

<sup>5</sup> *Ibid.* pg 2

<sup>6</sup> *Ibid.* pg 4

### Provide an investment tax credit (ITC) for next generation biorefineries

Capital costs for construction of next generation biorefineries, which utilize renewable biomass to produce next generation biofuels and biobased products, are a substantial barrier to commercialization. Congress should provide an investment tax credit to help accelerate construction of next generation biorefineries and speed deployment of next generation fuels, chemicals and products. *The American Recovery and Reinvestment Act of 2009* created flexibility in tax incentives for the renewable electricity sector in choosing production or investment tax credits. In contrast, the tax code doesn't show the same flexibility for biofuels producers. We would like to see the tax code allow similar flexibility for biofuels producers with the objective of creating the most functional and productive incentive structure.

### Enact tax parity between algae-based biofuels and cellulosic biofuels to encourage this cutting-edge technology

Algae-based biofuels possess the same favorable characteristics as cellulosic biofuels in terms of job creation, energy security, and environmental profile. It is our understanding that they may not have been originally considered in the enactment of the cellulosic biofuel production tax credit due to limited awareness of algae's commercial potential. Congress should ensure that the cellulosic biofuel production tax credit and accelerated depreciation are extended to algae-based biofuels so as to provide a level playing field for these promising biofuel technologies.

### Enact a production tax credit (PTC) for biobased products

A production tax credit for biobased products will promote investment, production, and adoption of biobased products much as the existing biodiesel and cellulosic biofuels tax incentives have done for investment in those industries, and will help offset the higher costs of pioneering production.

### Modify the Advanced Energy Project Credit (IRC Section 48C) to include biobased product biorefineries

The current 48C advanced energy manufacturing credit provides much needed assistance to developers of a wide range of energy efficiency and renewable energy technologies, including biofuels projects, but fails to clearly recognize biobased products manufacturing projects as eligible. Statutory language should be clarified to ensure that biobased product manufacturing property is unambiguously eligible.

### ***Conclusion***

In conclusion, BIO urges this Committee to continue to recognize that innovations such as these are some of the most promising sources of green jobs and economic growth for the future. Ensuring that emerging companies producing new technologies can access and secure the investment capital necessary for success should be a high priority for the nation.

On behalf of its more than 1,200 members across the nation, BIO appreciates the opportunity to submit this testimony and present our data on the renewable energy and green job creation potential for industrial biotechnologies and products. We are ready to work with this Committee and be a resource as you draft a green jobs package of renewable energy tax incentives.