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House, Science, Space and Technology
Subcommittee on Investigations and Oversight
Chairwoman Renee Ellmers
House Small Business Subcommittee on Healthcare and Technology,
Committee on Science, Space, and Technology, Investigations and Oversight
Committee on Small Business, Subcommittee on Healthcare andTechnology
U.S. House of Representatives
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Joint Hearing: How the Report on Carcinogens Uses Science to Meet its Statutory Obligations and its Impact on Small Business Jobs.

Chairman Broun, Chairwoman Ellmers, and other members of the Committee

Thank you for the invitation to speak today. This is the first time I've been before the committee, so with you're your permission I'd like to submit my written testimony and summarize it for you.

My name is Ally LaTourelle. I am the Vice President of Government Affairs for BioAmber, a renewable chemical company. My work with BioAmber includes renewable chemical manufacturing project finance, federal, state and local financial incentive analysis in US and foreign nations, federal renewable chemical and economic policy development, and I am currently the Head of Global Sustainability.

BioAmber is a next generation chemicals company. BioAmber's proven, proprietary process and patented technology uses economically-viable, clean and sustainable feedstocks to produce platform chemicals for a diverse range of chemical applications. BioAmber is successfully commercializing renewable chemicals that are produced more economically, cleanly and sustainably than their petrochemical alternatives.

Respectfully, recognition that Styrene is "reasonably anticipated" to be carcinogenic is not detrimental to our small business. In fact, for our business, as an alternative to petrochemicals, and the developers of non-toxic styrene replacement products, reports published by government on the toxicology of chemicals and regulations of those chemicals is a *driver* to our business as well as our strategic partners in the area of chemical production and manufacturing.

That said, even though we have developed a direct replacement, a shift in categorization of this chemical, however large the markets, is not noticeable in the face of multiple larger socio-economic, health, and cost concerns related to energy and the use of dependence on imported oil. These larger drivers, including a broad increase in transparency for the review of toxicological effects of chemicals, have been a boon for our small business. As evidence, for example, spending on green building materials is expected to grow from $7 billion in 2009 to $230Billion by 2030 – an annualized growth rate

of 18% per year.[1] There has been a large focus on energy efficiency in construction, however, the integration of sustainable, less toxic building materials and LEED is a part of the growth.

At BioAmber, we produce a non-toxic biobased succinic acid that is used in many applications from food additives to fabrics. We have also developed biobased butanediol (BDO) technology that will be deployed at our first commercial scale facility in Ontario, Canada in addition to biobased succinic acid.

In combination, these two chemicals make a polymer, or plastic, that is used in numerous applications including building materials. Our technology has created a 100% biobased route to the polymer, as well as increased performance characteristics to make this non-toxic, biobased alternative to petrochemicals high temperature heat resistant, yet also biodegradable within 90 days.

Growing market demand and technology at commercial scale in biobased chemicals has many forward thinking larger businesses in the incumbent chemical sector looking to biobased chemical production and technology for growth in their portfolios. We have enjoyed an increase in valuation as a privately held company, our workforce has increased by 450%, and many of our strategic and innovation partners are familiar names: Dupont, Cargill, Lanxess, Mitsubishi Chemical, Mistui. For example, Lanxess chemicals has partnered with us to produce non-pthalate esthers that go into PVC for example. I believe that we are not an anomaly in this growing industry.

Contrary to running *against* a deeply integrated, century old infrastructure and distribution advantage of petrochemical companies, our innovative technology has been embraced as a stepping stone to new low cost processes that create innovative high performance materials with competitive pricing. From my perspective, these companies are focused on risk mitigation and value creation

1. <u>We believe that companies that are not focused on risk mitigation amid a disharmonized global chemical regulatory environment are missing the opportunity</u>. We understand that perceived risk, substantiated or not, reduces value of a company. And that it is better to avoid the risk altogether by providing the alternatives. From our perspective, whether using materials for construction, selling cosmetics directly to consumers, innovating new products out of high performance materials, this focus is a sign of being lucid to the 21st Century business challenges. We are innovating new applications and products in collaboration along side our customer partners in the supply chain and avoiding multiple business risks in the process.

Not only are we avoiding risk in our process and products, we are also implementing voluntary sustainability standards. With increasing transparency in their supply chains, it is crucial that we analyze or water and energy consumption in our industrial production processes, and, taking the lead from the Securities Exchange Commission guidelines plan for climate change risk. I wish I could say we are making these changes altruistically, but we are not. These actions reduce risks and costs, and increase value across a full spectrum of challenges. We hope to not only stay ahead of "economic darwinism" in a changing world, but also lead the path to a better, safer future.

As a small chemical and manufacturing company, we are connected to a global supply chain and manage the irregularity of regulatory regimes as well as ad-hoc chemical reporting across the globe. This is part and parcel of our business today. Sony learned a hard lesson in the late 90's when shipping Playstations for distribution across Europe during the holiday buying season. A component of their product contained a material that was banned in the specific country where the distribution was to originate. They were prevented from distributing their product to the rest of Europe and lost hundreds of millions. In response to this 21st Century business challenge, where component parts are shipped globally for assembly in one country before going to another, our customers are looking to avoid disruptions altogether in their supply chains. They are doing this by using less toxic materials, increasing transparency, and demanding that their suppliers provide safer and environmentally favorable alternatives.

We are very cognizant our regulatory changes pertaining to the chemical industry, however, addition of styrene to the Report on Carcinogens (ROC) is not a shock. Possible toxicity of styrene has been reported since the mid 1980's when the World Health Organization International Agency for Toxic

[1] The Economic Benefits of a Green Chemical Industry in the United States. Renewing Manufacturing Jobs While Protecting Health and the Environment. James Heintz and Robert Pollin, Political Economy Research Institute, Univ. Of Mass; Blue Green Alliance.

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Substances and Disease Registry moved Styrene from "not classifiable" to "possibly carcinogenic to humans" in 1987.[2] Styrene as a possible human carcinogen was identified in 2007 in a toxicology facts sheet published by the World Health Organization's Internationals Agency for Research on Cancer (IARC) determined that styrene is a possible human carcinogen. It considered styrene again and found the same conclusion in 1994 and 2002. Health Canada however concluded that styrene is "non-toxic" and it is therefore not regulated by Environment Canada and Public Works. And while California has considered a ban on polystyrene containers as recently as last year, the US EPA already regulates styrene after detection of the chemical in drinking water in the U.S. after leaching into groundwater supply from spills, and products that biodegrade in landfills.

2. These small factors only add more fuel to what is now a sizeable fire amounting to a $600Billion Health and Wellness Sector. **The rising tide of consumer demand for products with a better environmental and toxicological profile has far surpassed "trend" status.** In 2009 JD Ford & Company Investment Bankers reported that the $600Billion global health and wellness industry has held up well in the face of the global economic downturn. Health & wellness' share of the food, beverage and healthcare market has grown significantly and is expected to continue to do so. The American Sustainable Business Council, a growing coalition of business organizations and businesses, representing over 120,00 business and more than 200,000 business leaders reports that an independent pole released in February 2012 by Lake Research, 80% of small business owners were in favor of disclosure and regulation of toxic substances that are used in products. However, as a small business, we focus on low cost and performance, and bringing value to the marketplace, not uncertain regulatory changes.

In 2010, DuPont surveyed more than 800 customers globally in industries spanning food and agriculture, transportation, chemicals and manufacturing, plastics and packaging and electronics to better understand if there is a long-term demand for sustainable products. 89% of the customers said that delivering products with environmental benefits is a long-term market opportunity. And 95% of those surveyed reported customer demand as a key driver for developing products with an enhanced environmental footprint. "The results of this survey reinforce our belief that there is broad market demand for products with an enhanced environmental profile and that demand is coming from customers," DuPont Vice President and Chief Sustainability Officer Linda J. Fisher told participants at the New York Stock Exchange and Yale Green Summit in 2010, "This trend is here to stay and offers significant growth opportunities for companies which can deliver sustainable solutions. DuPont, with its market-driven science and broad global industry reach, can help address this growing trend."

3. **Of greater concern to us is the cost of energy in manufacturing and chemical production**. Increase in energy prices mean increases in the cost to produce materials. The U.S. chemical industry alone uses 20% of the world's industrial energy supply. Since 97% of all products, that is building materials, fabrics, food service ware, computer parts, auto parts, almost everything we use in life is made from chemicals. In general energy intensive processes, petrochemicals come from oil, coal and natural gas. With this exposure to what I would consider to be a double correlation to the price of a barrel of oil, we can see how this cost might be passed on to consumers.

The good news is, that chemical and material companies like BioAmber are competitively positioned to enter the market at lower cost and to benefit from the incumbent technology's reliance on fossil resources. We currently produce succinic acid at a 3,000 metric ton capacity or demonstration scale. The groundbreaking ceremony for our commercial plant that will have an expanded capacity of 35,000 Metric Tons is on May 16th. Biobased succinic acid is cost competitive at commercial scale even with oil

[2] http://www.styrene.org/regulatory/intl_regulation.html

prices dropping to $50 per barrel.

3. Furthermore the regulation of emissions in the chemical and materials industry is a driver to our small business. While incumbent technology is required, for example, to employ expensive abatement technology in the production of the chemical adipic acid – a main ingredient of Nylon - because of carcinogenic Nox emissions, our biobased adipic acid technology will produce 84.5% less emissions even accounting for abatement technology of petro-adipic. Our biobased succinic acid technology sequesters C02, and can be used as a replacement for adipic acid. In addition, by comparison, this technology uses 51.2% less energy and no fossil resources as feedstocks. The lack of correlation to the price of oil creates the competitive cost to market entry.

Thank you for your time and attention and this opportunity to bring to you the perspective of a renewable chemical company.

Sincerely,

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