BioAmber Inc.
3850 Annapolis Lane
North, Suite 180
Plymouth, MN 55447
www.bio-amber.com

Chairman Paul Broun, M.D.,
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
2321 Rayburn House Office Building
Washington, DC 20515-6301
(202) 225-6371

April 24, 2012

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, with you're your permission I'd like to submit my written testimony and then briefly summarize it for you.

My name is Ally LaTourelle. I'm 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, 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 uses economically-viable, sustainable feedstocks to produce platform chemicals for a diverse range of chemical applications.

For example, we produce a non-toxic, biobased succinic acid that is used in many applications from food additives to fabrics and we can do so at lower cost. We have also developed biobased butanediol (BDO) technology that will be deployed at our first commercial scale facility in Ontario, Canada in addition to the biobased succinic acid.

In combination, these two chemicals make a polymer, or plastic, modified polybutalene succinate (mPBS) that is used in numerous applications, including building materials. The technology enables a 100% biobased route to the polymer, to make this non-toxic, biobased alternative to petrochemicals "drop in ready to existing manufacturing equipment. This polymer is high temperature heat resistant, yet also biodegradable within 90 days.

Respectfully, I would like to present a few different reactions to the issues of concern before the committee today.

ONGOING REPORTING OF ROC HAS NEGLIGIBLE IMPACT ON COMPETITION IN THE FACE OF INDUSTRY WIDE 21st CENTURY CONCERNS.

The Report on Carcinogens that styrene is "reasonably anticipated" to be carcinogenic is not

detrimental to our small business, nor was it a shock. We are cognizant of regulatory changes pertaining to the chemical industry especially competitors. However, ongoing reporting tends to create significantly less impact. possible toxicity of styrene has been reported since the mid 1980's when the World Health Organization's Internationals Agency for Research on Cancer (IARC) moved Styrene from "not classifiable" to "possibly carcinogenic to humans" in 1987.[1] It considered styrene again and found the same conclusion in 1994 and 2002. Styrene as a "possible human carcinogen" was also identified in 2007 by the Agency for Toxic Substances and Disease Registry at the US Department of Health and Human Services in a toxicology facts sheet.[2] 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. And where Health Canada however concluded that styrene is "non-toxic" and it is therefore not regulated by Environment Canada and Public Works, California has considered a total ban on polystyrene containers as recent as last year.

Our mPBS is a direct replacement for styrene in some applications. Clearly perceived risk of a direct competitor's product will drive business our way. However, we are building a plant in Canada, and I feel confident in stating that Canada's lack of regulation on styrene did not deter our commercialization plan to build there in anticipation of increased styrene competition.

All chemical companies face the larger concerns of the 21st Century and that is where our business acumen is focused. We are focused on cost concerns related to energy supply price increases, shipping and supply chain costs associated with radical swings in the price of oil, and increased demands for transparency from a more health and environmentally conscious consumer base.

These larger drivers have been the real boon for our small business, regulation of these emergent concerns are icing on the cake. Our renewable chemical production design is 51% less energy consumptive than incumbent processes, our adipic acid process provides 84% less emissions when compared to petro-derived adipic acid. Our biobased succinic acid is non-toxic and non-hazardous. These benefits amount to real cost reductions that garner competitive advantage in the market place.

REGULATIONS LEAD TO INNOVATION

Irregularity of regulatory regimes is part and parcel of our business today. 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 of dollars. 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 and partners are looking to avoid disruptions altogether in their supply chains.

We are innovating applications with less toxic materials in order to withstand this increasing transparency and meet the demand for safer and environmentally favorable alternatives. Our own mPBS can be used as a non-toxic, non-off-gassing replacement binder in construction materials. This advantage captures a segment of a green building materials market that is expected to grow from $7 billion in 2009 to $230 billion by 2030. This amounts to an annualized growth rate in the sector of 18% per year.[3]

---

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

[2] ATDSR Styrene CAS# 1000-42-5

[3] 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.

LARGE COMMERICAL PARTNERS SUPPORT A SHIFT IN THIS INDUSTRY TO SAFER ALTERNATIVES

The growing market demand for lower cost alternatives and technology readiness at commercial scale in biobased chemicals has many forward thinking incumbent chemicals businesses looking to biobased chemical production 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. One example is our partnership with Lanxess Chemical Company. They have strategically partnered with us to produce non-pthalate esthers (as in PVC piping.) I believe that we are not an anomaly in this growing industry, but that we are at the beginning of a dramatic shift toward biobased alternatives.

We are providing our partners with new low cost processes, innovative high performance materials and competitive pricing. This amounts to market entry and economic sustainability. But we also provide them with an answer to the larger 21st Century concerns regarding energy consumption, environmental degradation and toxicity. From my perspective, these partners are making not the 'right' choice but the sound business decision. They are focused on long term risk mitigation and increased value creation in a changing business landscape.

They are not fighting *against* the current changes, our partners are remaining competitive by accepting the shift in the fundamental of business and customer preferences. They have moved on to innovating new solutions as they should in a market based society. An argument can be made that decreasing information regarding toxicity and other potential risks stifles innovation and science. If the problem is ignored, a solution will not emerge.

"RETAIL REGULATION" DRIVEN BY CONSUMER DEMAND PICKS UP WHERE GOVERNMENT LEAVES OFF – CONSUMERS ARE THE ULTIMATE REGULATORS

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."

ENERGY COSTS – ACTUAL RISK AMOUNTS TO SUBSTANTIAL CHILLING EFFECT ACROSS THE SECTOR

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 prices dropping to $50 per barrel.

ENVIRONMENTAL CONCERNS – QUANTIFIABLE RISK THAT IS HERE TO STAY

Increased 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.

Many more changes in business fundamentals are to come. We are actively preparing for the following:

Supply Chain scrutiny and demands for increasing transparency across suppliers.
An expectation of analysis of water stress risk.
Energy supply price volatility.
Transportation price volatility.
Climate change risk planning.
Life Cycle Analysis requirements from customers.
Environmental Product Declaration development in multiple applications.
Meeting emergent business standards like the Carbon Reporting Initiative.

I wish I could say we are meeting these changes for altruistic reasons, but we are not. Our business has moved beyond the perception that these changes are philanthropic. The truth is these actions reduce risks and costs, and increase value across a full spectrum of current challenges. We hope to stay ahead of the invitable "economic darwinism" in a changing world, but also lead the path to a better, safer future because that makes long term economic sense.

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

Sincerely,

Ally LaTourelle, esq.
VP Government Affairs,
BioAmber, Inc.
3850 Annapolis Lane North
Plymouth MN 55447
Ally.latourelle@bio-amber.com