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BEFORE THE

MASSACHUSETTS ADVANCED BIOFUELS TASK FORCE

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My name is Jonathan Lewis. I am a staff attorney and a climate policy coordinator for the Clean Air Task Force, a Boston-based nonprofit organization dedicated to restoring clean air and healthy environments through scientific research, public education, and legal advocacy.

Thank you for inviting me today. The Clean Air Task Force appreciates this opportunity to urge Massachusetts policymakers to rely on analytic tools that comprehensively assess the climate impact of a given biofuels policy before determining the best uses for limited biomass resources, and to consider modest biofuel policies that are carefully tailored to protect our climate.

Five years ago, a set of policies designed to promote the production and use of biofuels were adopted by the European Union. Minimum consumption targets were established for 2005 and 2010, and then, in a subsequent directive, for 2020. The EU proceeded under the widely held assumption that increased reliance on biofuels was a win-win-win scenario, in which the Biofuel Directive would enhance energy security, promote rural economic development, and reduce greenhouse gas emissions.

It is not working out that way, particularly when it comes to global warming. The EU Directive stoked a *perceived* demand for imported biodiesel feedstocks that could supplement the supply of rapeseed and other European energy crops, as well as a *real* demand for imported cooking oils as more and more domestically-grown rapeseed is used to make biodiesel rather than canola oil. The demand, real and perceived, helped encourage entrepreneurs in Southeast Asia to convert millions of hectares of forest in Indonesia and Malaysia into palm oil plantations. The process of slashing, burning, and clearing these forests produces so much carbon dioxide emissions that Indonesia recently rose from twenty-first to third on the list of countries with the highest national greenhouse gas emissions. The emissions from destruction of Indonesian forests are due in part to Europe's Biofuel Directive, and easily negate whatever modest reductions in greenhouse gas emissions that Europe had hoped to achieve through its policy.

I am relaying this story not just to point out that what looked to EU policymakers like a win-win situation has been anything but that, but also to stress the importance of careful, research-based deliberation in this policy arena. The EU pushed through its mandate without seriously testing its assumptions about the benefits of biofuels. The Clean Air Task Force is concerned

that American lawmakers – in Washington, in California, and here in Massachusetts – are at risk of repeating that mistake.

At the top of the list of policy measures to avoid are mandates that promote the production of biofuels made from energy crops grown on farmland that would otherwise be used to grow food or feed. Simply put, new farmland cannot be willed into existence for the purpose of producing biofuel feedstocks. If farmers are incentivized to use their fields to grow crops for energy instead of food – whether they are growing soybeans, switchgrass, or something else – the food must be grown elsewhere. Growing energy crops in addition to food requires that additional land be cultivated – land which formerly may have been providing some other environmental service. In a globalized food market, the foregone food will be grown somewhere else – a process that ultimately results in the conversion of forests, wetlands, grasslands, and other areas that serve as important carbon sinks. As land is cleared, drained, and/or burned to make it suitable for farming or grazing, there is a large one-time loss of soil and plant carbon. These negative climate impacts from converting forest or grassland to farmland overwhelm even the most optimistic assessments of the annual climate benefit derived from biofuels made from energy crops grown on what was formerly food-producing farmland.

Several steps can be taken to ensure that biofuel policies actually serve the goals of climate stability, energy diversity, and agricultural development.

First, given how little is understood about the full ramifications of policies that promote biofuels, policymakers must slow down the current rush toward broad production and consumption mandates. Currently, the “life-cycle” analyses available to you and other policymakers barely consider or ignore altogether critically important factors like land use changes, the nitrogen cycle, CO₂-equivalency factors, and the range of market-driven indirect effects.

Within the next 2-3 years, we expect to have the first analytic tools that can guide us toward policies that define and promote truly beneficial biofuel use. Such tools will anticipate and assess all of the impacts of biofuel policies on global agriculture and forest product markets, as well as the associated impacts on climate, food prices, biodiversity, and social conditions in feedstock production areas. As researchers develop new feedstocks and new production techniques over the next few years, the European experience suggests that some of that time can be well spent developing and applying tools that comprehensively analyze the full costs and benefits associated with biofuels. Massachusetts, with its wealth of academic resources, is ideally situated to accelerate the development of such tools and to capitalize on the opportunities they bring to light.

Second, once tools have been developed that can comprehensively analyze the range of economic and environmental impacts associated with a particular policy, we need to determine the most beneficial use of limited biomass resources. It is clear, for example, that a policy will only accelerate global warming if it shifts corn or soy from the food market to the fuel market, and in doing so encourages farmers elsewhere to convert forest to farmland in order to restock global food supplies. From a climate policy perspective, a far better biomass-related initiative would be to simply preserve the standing forest.

Third, as analytic tools described above are being developed, policymakers should explore niche biofuel policies that are carefully tailored to protect climate. These would be initiatives for advancing the development (and, where appropriate, the deployment) of feedstocks and production practices that, in terms of climate stability and social development, are either beneficial or benign. Based on existing research and the European/Southeast Asian experience, such initiatives should, at the outset, focus on three kinds of feedstock: algae, biomass waste, and other waste products.

- Algae can be grown at high densities in relatively small facilities, and can be processed into biodiesel.
- Biomass waste products such as municipal tree cuttings, forest thinnings, and agricultural residue can be used to make cellulosic ethanol. Care must be taken, however, to ensure that the purported “waste” products are indeed waste, and not something that provides non-negligible economic or ecological value when left in place.
- The last category – other waste products – include already-processed waste oils and trap grease that can be used to produce biodiesel, and municipal and industrial trash used to make cellulosic ethanol.

The common denominator among these feedstocks is that none of them require a substantial investment of farmland. Consequently, policies that encourage their use will not result in the displacement of existing food or feed production or the concomitant deforestation. I cannot speak to the feedstocks’ commercial viability, but I know that there are vibrant companies in Massachusetts working hard to bring some of them to market.

Broadly constructed directives like the Massachusetts biodiesel mandate are bad at distinguishing between these kinds of potentially beneficial biofuels and biofuels that are decidedly unhelpful, and they are even worse at advancing policy options that best protect climate. In contrast, low carbon fuel standards pose nearly the right question – that is, “What is the carbon content of a given fuel?” An even better policy approach for improving the mobility sector’s impact on climate would go a step further by considering the *net* climate impacts of a given fuel – taking into account contributing factors like non-CO2 pollution and albedo. The Clean Air Task Force is happy to work with Massachusetts to bring forward the best policy approaches available today, and to offer safeguard language that should be incorporated into any laws or regulations that result from this process.

I will finish with a quick postscript: Earlier this week, in a somewhat predictable expression of policy regret, the EU announced it is working on a set of proposals that would ban the importation of biofuel feedstocks that contribute to global warming, and require that feedstocks used to comply with the Directive provide “a minimum level of greenhouse gas savings.” While the EU’s proposed fixes are highly inadequate, it is nonetheless encouraging that the EU has come to recognize some of many the flaws inherent in policies that mandate biofuel production.

Thank you for your time.