

**Statement of
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**Before the
Subcommittee on Conservation, Credit, Energy and Research
House of Representatives**

Mr. Chairman and members of the Subcommittee, thank you for the opportunity to submit this statement in review of the indirect land use provisions of the federal Renewable Fuel Standard (RFS). My testimony today will focus on indirect effects.

My name is Brooke Coleman. I am the Executive Director and founder of the New Fuels Alliance, a not-for-profit national advocacy group for the production and use of non-petroleum fuels, with a particular focus on biofuels. At its core, the New Fuels Alliance is a coalition of biofuel producers, largely advanced biofuel producers, working in collaboration with communities and the private sector toward increasing the production and use of bio-based fuels.

I have been an advocate for biofuels for more than ten years, first as the climate director for an environmental group in California called Bluewater Network and later as the director of several coalitions in support of pragmatic approaches to reducing our dependence on foreign oil. I have seen the pendulum swing on biofuels several times, from the extremes of claims about biofuels completely replacing gasoline to biofuels being responsible for rainforest destruction and depriving the world's hungry of food. There is a reasonable center on many of these issues, even if we don't spend a whole lot of time discussing biofuels in that context.

With time limitations in mind, I would like to start by speaking directly to an issue that is becoming more and more controversial; that is, our new foray into what are called indirect carbon effects. It seems that we are going to have to resolve this issue as we move forward with biofuel policy, and so the subject of this hearing and the timing of it are ideal.

Where did the issue of indirect effects originate?

As you know, the amended federal Renewable Fuel Standard passed in December 2007 requires new biofuels to be 20-60% better than gasoline to be eligible for the program. Late in the process, a clause was added to the definition of lifecycle carbon emissions, calling for the inclusion of indirect effects such as indirect land use change. This came several months before the public debate about indirect land use change even started, in February 2008, and before a substantive review of indirect effects occurred at the policy or scientific level.

Two weeks ago, the California Air Resources Board added indirect land use change penalties to the carbon score of biofuels under the recently adopted Low Carbon Fuel Standard (LCFS) – a standard being considered for adoption by 11 northeastern states and the federal government via Congressman Waxman's climate change (cap and trade) legislation.

Proponents of indirect land use change tend to cast their critics as somehow insensitive to rainforest degradation or swayed by the powers of the ethanol lobby. In reality, there are legitimate questions to be asked and answered about the unprecedented decision to start adding indirect carbon effects to the carbon score of any product, including but not limited to biofuels.

While the assessment and discussion of indirect effects is complicated, my statement today focuses on the basic questions

What is an indirect carbon effect?

Proponents of including indirect effects in the carbon score of a fuel argue that these effects are a part of the fuel's carbon footprint. However, whether you are for or against indirect effects, this is not really true. Anytime you are talking about something "indirect" in the carbon world, you are talking about a market-mediated, economically or behaviorally induced, carbon effect, which is a fancy term for "ripple effects" in the marketplace occurring, in most cases, far from the point of production or use of the product.

Put another way, it is the change that could occur in the marketplace stemming from, but not as a direct result of, using a product. Consider the following 2 examples:

- Let's say you buy a more fuel efficient car; a Prius. The direct effect of using that car will be less fuel use and as a result less carbon emissions. That is the direct effect. The indirect effect, however, may be that you drive slightly more because it's cheaper to drive, and then turn around and use the savings to buy a flat screen TV, which emits more carbon emissions than a regular television when manufactured and used. Even more confusing, if everyone starts driving more fuel efficient cars, there will be less fuel demand and the price of fuel will drop; this will also lead to more driving. Should we attach these effects to the carbon score of a Prius?
- Let's say Congress passes a resolution committing to have its members offset the carbon emissions from all their flights back to their districts. Presumably, this means that each member of Congress would be charged for his or her portion of the emissions coming from each flight they take. You take the emissions from the plane and divide by the number of seats on the plane; that is your share. That is the direct effect. The indirect effect would be the carbon emissions of the person you pushed onto another plane because they could not sit where you are sitting. Should you pay for the other person's emissions or should he?

Bringing the issue back to biofuels, this is what indirect land use change is. It is not the land used to produce biofuel feedstock, it is the land needed to produce another agricultural product – say, food – because biofuel theoretically pushed that product to another place. Assigning a penalty to biofuels for indirect land use change is penalizing biofuels for the land expansion that occurs as a result of the cumulative impact of the agricultural sector.

So how do we rationalize adding an indirect carbon effect to the carbon score of a product?

This is largely a public policy question. Why should U.S. biofuels be penalized for the land clearing activities of a food or fiber manufacturer in the Amazon? Here is a key point to consider: the only way to rationalize adding an indirect effect to the carbon score of a product, such as biofuel, is to look at the world through a purely “additive lens.” You have to manually – and rather arbitrarily – ascribe land clearing causation to a single product; in other words, “biofuels entering the marketplace is causing land clearing in Brazil” ... when in fact land clearing in Brazil occurs as a result of not only agricultural demand, but also socio-economic, political, trade, law enforcement and other variables. Biofuels is not even the sole source of agricultural demand, much less the cause of world political and socio-economic variables.

Interestingly, this is a presumptive underpinning of the ethos of indirect effects because this is how indirect effects are modeled and enforced. Modeling indirect land use change, or any market-mediated effect, requires that the modelers freeze the world economy in a single moment in time in order to isolate the one variable being analyzed (in this case, increased biofuel demand). In other words, the model used in California to predict indirect land use change for biofuels, for example, is a static model that cannot properly ascribe “proportionate cause” to the myriad of variables that actually cause land use change.

Two weeks ago, leading investors in advanced biofuels from 8 firms wrote a letter to the California Air Resources Board raising concerns about this modeling. They said:

“Indirect land use change” is an outcome derived by adding a predetermined amount of biofuel demand to a static, preset economic model, which in turn projects the potential “price induced” expansion of the agricultural sector onto additional land. It is a useful academic exercise, but as a price model it cannot account for the profit margins that drive real world decision making. As a result, the model is likely to over estimate effects that in reality would be mitigated by market forces, or produce estimates that in many cases are simply wrong. For example, in prior applications of the GTAP methodology, the model predicted changes in land use between 2001 and 2006 that were actually the opposite of the real-world changes observed over time.¹

More than 100 leading bio-scientists also submitted a letter to California, calling the science nascent and the use of it in a regulation premature. Remember, California’s assessment of these penalties increased the carbon score of biofuels anywhere from 40 to 200 percent. These are game changing carbon score increases, with real commercial implications. And the economic models are often directionally wrong and controversial from a scientific perspective.

¹ In an earlier analysis of the impact of biofuels on U.S. land use patterns, researchers at Purdue using GTAP concluded the harvested area for coarse grains like corn would increase 8.3% from 2001 to 2006, U.S. harvested area for oilseeds like soybeans would decline 5.8%, and forested area would decline 1.5% during the same period. In actuality, coarse grain harvested area declined by 2%, oilseed area increased by 0.5%, and forested area increased by 0.6% from 2001 to 2006.

Summary of Problems & Solutions

There is no question that pristine land degradation is a problem in this and other countries. There is no question that we should be assessing the indirect effects of the energy choices we make. Biofuels could lead to more land conversion. Using electricity and natural gas in vehicles could lead to more coal combustion. Ongoing petroleum dependence could lead to all of these indirect effects, and more, given that the price of petroleum influences nearly every sector of the economy. Turning a blind eye to ripple effects is not a reasonable solution.

But there is a big difference between using these assessments to inform public policy decisions – for example, how much conventional biofuel we can use before overburdening land – and pretending that: (a) these effects are a part of the primary carbon footprint of a given fuel; or, (b) that we understand them well enough to add carbon penalties to each gallon of biofuel used. That is where a useful exercise in precaution becomes misleading and polarizing.

While considering the public policy implications of indirect effects, it is useful to consider the following “big picture” issues:

(1) When it comes to lifecycle carbon scoring, there are really only direct effects, because the indirect effect of one product is the direct effect of another. If products pay for direct effects, there are no indirect effects.

(2) If the goal of U.S. energy policy is *change*, how useful is it to arbitrarily assign the disruptive effects of an entire sector to only the new entrant in that sector?

(3) Consider the economic effects of this decision. A hectare of land is cleared in Brazil to produce soybeans for food. Critics of biofuels say that this land expansion occurred because biofuels is causing the world agricultural footprint to expand. So we saddle U.S. biofuel companies with a game changing carbon penalty from someone else’s supply chain that is completely out of their control from a mitigation perspective.

(4) An indirect effect is, by definition, the application of someone else’s direct effect to another product or fuel. Once we start doing that, we are breaking down the very principles we are espousing in cap and trade and polluter pays: that we are responsible for our own carbon footprint and can and should improve it. Do indirect effects even work in cap and trade?

The good news is there are reasonable solutions to this complicated problem. I would like to propose four (4) concrete steps to address concerns about indirect effects:

(1) Study them for all fuels; we need to try to understand the ripple effects of the energy choices we make. The outcomes can inform good policy. But the current framework – in which only biofuels are being analyzed for price-induced effects – does not work.

(2) Cast a critical eye on those that insist that indirect effects are part of the “lifecycle” carbon footprint of any product. Even if you believe that indirect effects analysis is

important, as we do, this is not true. By definition, enforcing indirect effects relies on debiting Product A for the supply chain of Product B.

(3) Use the lessons of indirect effect analysis to create a better and more dynamic treatment of direct effects. For biofuels, this means incentives to use idle and marginal land, research into more sustainable energy crops, a regulatory mechanism that incents good land use behavior instead of presuming bad behavior, and limitations on certain types of alternative energy solutions. For electricity vehicles this means incentives to plug-in at night, when there is excess energy on the grid.

(4) Aggressively promote a better biofuel gallon. Going after first generation biofuels with highly questionable carbon adders is not going to expedite the production and use of the advanced biofuels that will actually make land use more sustainable. What the advanced biofuels community needs is the following:

(a) Maintain a stable and durable policy; discussion about reworking the RFS or replacing it with another program runs investment away from advanced biofuels. Investors cannot invest ahead of regulations that are constantly being changed.

(b) Create open markets. Biofuels are stuck in a market box. The best way to open markets for advanced biofuels is to mandate flex-fuel vehicles this year. These vehicles need not run on biofuel blends, but can run on biofuel blends if available. This opens up the investment horizons and demand markets for those trying to commercialize new kinds of fuels.

(c) Establish and maintain a level playing field on which to compete. We must get back to comparing “apples to apples” when it comes to valuing different fuels in a climate or energy security based regulation. Ascribing indirect effects to only one type of fuel skews the relative value of biofuels compared to petroleum.

(d) De-risk debt financing. Biofuel refineries are project financed. Advanced biofuel producers need federal support in terms of loan guarantees and other programs that mitigate the inherent risk in making investments in highly volatile liquid fuel markets. This is a reasonable role for government, and one that will be transformative in the marketplace.

(e) Reject divisive strategies. Biofuel strategies that attempt to draw lines between good and bad biofuels are not productive, and are not helpful to advanced biofuel companies. You would not promote second-generation wind and solar by attacking the imperfections of and putting out of business first generation wind and solar companies. The same principle is true in biofuels.

Thank you for the opportunity to speak today. I would be happy to answer any questions you may have.

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