10 February 2022

TO: Joint Committee on Transportation
Co-chairs Senators Lee Beyer and Susan McLain
Co-Vice-chairs and Members of the Committee

RE: HB 4141 Restrictions on Sales of Petroleum Diesel

A rapid transition to renewable fuels is urgently needed. Given the confusion regarding the actual benefits of biofuels, and therefore the value of related credits and offsets, further definition of the properties of biofuels that substitute for Petro fuels is needed.

Crops Raised to Absorb Carbon

Farmers large and small look to industrial crops (animal feed, fuel crops) to stay in business. Federal subsidies offer essential support in markets that are unpredictable. Lost in the turmoil is the answer to the question, "Do carbon markets act to absorb carbon and reduce overall pollution in the environment?" Farms themselves are a source of greenhouse gas emissions.

Since 1997 and before, interest in development of renewable carbon fuels like renewable diesel has been inspired by the generally accepted practice of computing the CO2 emissions from renewable diesel combustion and then setting the answer to zero. The rationale? Crops next year or in the future will fully reabsorb all the carbon combustion. You ask when? That's a hard question. No one seems to be on contract to protect the environment on time.

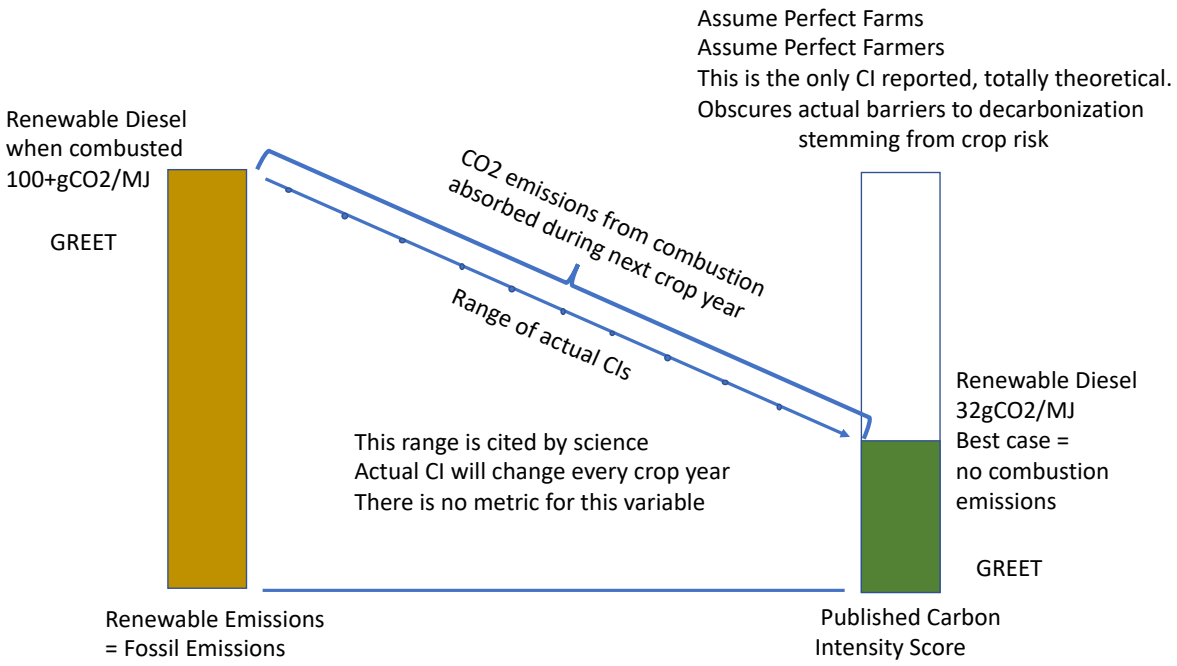
Moreover, this is done by rule not by fact. There is no evidence from best science that establishes definitively what is required to assure the critical balance is attained. We are left with an unsupportable rule. The result is that any cost penalty for carbon emissions like setting a social cost on carbon would not apply to renewable diesel. This arbitrary rule, termed the Kyoto Rule in this essay due to its appearance in agreements from the 1997 Kyoto Protocol, has been explained by asserting the carbon would be partially recaptured by crops like soybeans, palm oil, industrial corn. The theoretical carbon intensity (CI) score explains how much carbon remains in the life cycle of biofuel for example.

These scores are obtained from the Argonne National Lab GREET software model ("Greenhouse gases, Regulated Emissions, and Energy use in Transportation"). Literally all CI scores cited today are issued from this model after fuel developers request the CI number for their fuel.

What if the fuel feedstock crop does not succeed in absorbing all the combustion carbon as the Argonne model assumed? We can explain the result by first asking, what is the theoretical CI score if the combustion carbon is not set to zero? (Meaning that the next crop cycle failed to capture any combustion carbon) This was obtained by special request to GREET staff who certainly knew the answer.

> When combustion carbon of renewable diesel is counted, the CI score for renewable diesel is similar to that of fossil diesel.

This means there is a range of CI scores depending on crop production performance.



Failing to publish the worst-case CI, while only publishing best case scores, takes on the semblance of managing public perceptions by PR strategies we saw from Exxon and the carbon lobby giants beginning in the late 70's and earlier. Has anyone else been noticing this?

Making the Carbon Intensity Theory More Credible

For those of us more interested in habitat preservation than market mechanisms, the existence of two valid CI scores is a serious concern. The setting of combustion carbon to zero under the Kyoto Rule means that all the emitted carbon is reabsorbed in the next crop cycle, with perfect farms, crop strategy, favorable weather, plus successful harvest operations, leaving the remainder of life cycle carbon only.

If carbon credits are issued based on optimistic CI numbers, the actual science-based benefit to habitat preservation from offset and credit trading cannot be understood by any metrics computed from carbon credits. Does the trading of 6 million metric tons of carbon credits mean that 6 million metric tons of CO2 have been taken out of the environment? There are at least two answers:

Yes, if you just believe anything.
No, if you understand the unspoken assumptions that remain unsupported by best science.

When pondering the market damage from the Madoff con artist scam, it was only $50B. The stakes for any flaws in the proliferation of carbon market mechanisms are inestimable, while you try to ignore the transcendental injustices such flaws can levy on society and its prospects.

What To Do About Contrived Market Mechanisms?

The history of legally enforceable contracts goes back to the Magna Carta (1215) and earlier. The question arises, how do we expect to save the place by employing carbon trading instruments that are sometimes audited and only after they are sold? By not knowing the range of possible CIs, from being totally ineffective to being

perfect, the buyer with good intentions and infinite monetary resources should know the meaning of the sale, and buyer beware. More so for those of us with more limited means.

How are these inequities to be dealt with? The planet abounds with contract lawyers. Are there any contracts in existence that require carbon recapture from biofuel combustion? If so, such a contract would require total cooperation from the weather, plus perfect farm operations.

If not, confusion reigns supreme. Carbon offsets and credits, and the corresponding trading markets lose their meaning as a possible mechanism for solving an out-of-control carbon cycle, where natural carbon recapture cannot keep up with raging industrial and transportation emissions. This serves to emphasize that carbon credits and offsets actually constitute futures contracts even if such contracts are not written or traded as such. Have the futures trading regulations been applied to carbon market mechanisms?

Calling All Climate-defending Lawyers and Economists

Surely we can find one who has written the first Habitat Guarantee Contract stipulating an achievable CI for an accredited renewable carbon fuel, written to be legally enforceable, and can share it as open source. The line forms on the right where in normal times we would find conservatives. A carefully designed model contract can conserve the credibility and effectiveness of biofuels, their offsets, their credits, their market mechanisms, and their subsidies. Will it take years to find one? Can you get a crop producer to sign it?

The promise of biofuels depends on really knowing what they achieve for us. HB 4141 must include a plan to assure carbon reabsorption that farmers can attain. Market mechanisms will follow.

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Not the best, just better