



POLICY INSTITUTE FOR ENERGY, ENVIRONMENT, AND THE ECONOMY

28 February, 2020

Re: December TCI Modeling Results Webinar and Draft MOU

Dear TCI Staff,

Thank you for the opportunity to comment on the recent TCI webinar, which included information on modeling results, and Draft MOU. The Institute of Transportation Studies at the University of California, Davis (ITS-Davis) has a long history of research and engagement in the development of fuel carbon policies, such as California's cap and trade program, the Low Carbon Fuel Standard (LCFS), the Oregon Clean Fuels Program and British Columbia's Renewable and Low Carbon Fuel Requirements Regulation. ITS-Davis researchers were involved in the original development of California's LCFS and we continue to research low-carbon fuel technology and policy, as well as produce regular status updates about LCFS performance.

We appreciate the open and constructive discussion surrounding this proposed program; the comments here echo thoughts aired in earlier communications (summer and fall 2019). In particular, high-level comments conveyed in our November letter, on avenues for a carbon price to reduce transportation emissions, as well as concerns about erroneous carbon accounting that considers biofuels as carbon neutral, and about potential model interaction issues and the need for alternative reference scenarios, still largely apply -- although the additional sensitivity analyses showing a wider range of BAU emissions constitute a step forward in this regard. Below please find our comments on the Draft MOU, and the December 2019 Modeling Results webinar, in separate sections

Comments on the Draft TCI MOU

Proposed Treatment of Biofuels Overlooks Emissions, Could Skew Incentives

In previous comments we have raised the issue of the uncertain treatment of biofuels under the TCI. While the documents presented here do not specify a treatment of biofuels, the language regarding credit and deficit generation implies that emissions from biofuels would neither be tracked under the proposed TCI program nor would permits be required to cover the emissions from such fuels. This effectively treats biofuels as zero carbon, creating a significant risk that State Fuel Suppliers could comply with the program, and reduce their deficit obligation, by procuring large amounts of currently- available biofuels like renewable diesel (RD) or biodiesel (BD) made from palm or soybean oil. While the carbon molecules in these fuels are indeed



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biogenic, and therefore do not directly contribute to increased GHG concentrations in the atmosphere, there is an extensive body of literature documenting significant sources of emissions across the full life cycle of the fuel, including by contributions to deforestation or other land clearance.¹

The treatment of biogenic carbon as having no net warming impact is especially problematic because many of the fuels that present the highest risk can be produced at relatively low cost; they may well become cost competitive with petroleum fuels when the avoided compliance cost associated with petroleum fuels are factored in. Several sources have observed near-term cost competitiveness between RD or BD derived from palm oil and petroleum diesel.² The projected credit prices discussed in the webinar imply effective per-gallon subsidies in the 20-30 cent range; there may also be incentives offered at the Federal level or by Participating Jurisdictions. The combination of these incentives could offer a compelling aggregate incentive, sufficient to expand the consumption of crop-based diesel substitutes, including those derived from palm oil, within TCI jurisdictions. While some of these fuels reduce net carbon emissions when substituted for diesel, even when life cycle emissions factors already in regulatory use are considered, all have non-zero emissions when the full life cycle impact is considered and some, particularly those derived from palm oil, may even have a greater net warming impact than petroleum based diesel. Without a more effective treatment of biofuels under TCI, there is a real risk that these fuels could become a major compliance option real-world emissions considerably above reported TCI ones, as well as lower than projected allowance revenues.

Effective Price Collars Support Program Stability and Limit Allowance Price Volatility

The material presented in the webinar and MOU are insufficiently transparent about the functioning of the CCR and ECR, and whether they can act effectively as allowance price ceiling and floor, respectively. The Model Rule will need to be explicit about the levels at which each would be activated. In the case of the CCR, the size of the reserve and contingencies if it is exhausted (e.g., loosening restrictions on offsets allowable) also need to be delineated. While it is unlikely that a well designed and administered market would go so far out of its intended operational parameters to exhaust a credit reserve, a clear contingency plan would ensure that if that were to happen, effective responses could be made in a timely fashion. California has considered similar contingencies and as a result, instituted a hard price ceiling for program

¹ E.g. <https://www.sciencedirect.com/science/article/pii/S0301421512001681?via%3Dihub>, <https://iopscience.iop.org/article/10.1088/1748-9326/4/2/024001/meta>, <https://www.sciencedirect.com/science/article/abs/pii/S0301421512007124?via%3Dihub> & <https://www.euractiv.com/section/climate-environment/news/top-scientists-condemn-eu-land-use-values-for-biofuels/>

² E.g. <https://www.sciencedirect.com/science/article/abs/pii/S0960852415000917>, <https://www.sciencedirect.com/science/article/abs/pii/S0360544218324873>, <http://www.biodieselmagazine.com/articles/2516709/concerns-rise-as-low-palm-oil-prices-may-increase-use-for-biofuel>,



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stability, with "speed bump" prices along the way that trigger releases of reserve credits to slow volatility.

Enforcement Authority is Unclear and Potentially Insufficient to Reach Desired Outcomes

On page 9, (Subpart (A)(6) under "4. Regional Authority") The MOU indicates that the regional authority

"shall have no authority to adopt, implement or enforce the TCI Program.

Authority is reserved to each Participating Jurisdiction for the enactment or promulgation of laws for the implementation and enforcement of its individual program".

We recognize that much of the anticipated decarbonization activity under the proposed TCI program will occur through policies promulgated by Participating Jurisdictions. This leaves open the question of how compliance with the permit acquisition and surrender provisions of TCI will be enforced. If the Regional Authority can't enforce the basic mechanism of the program, that participating jurisdictions must acquire emissions permits, then there is a real risk that obligated entities ("State Fuel Suppliers") could choose to ignore the requirement to purchase emissions permits and evade accountability for violating the program by working with their home jurisdiction through litigation, political engagement or other means. Enforcement could potentially become a patchwork, with multiple interpretations of enforcement authority or multiple levels of effort applied to enforcement. This would substantially increase costs and complexity for both fuel suppliers and Participating Jurisdictions.

Additionally, there is a risk that delegating all enforcement activity to Participating Jurisdictions would result in each one gaining a *de facto* veto over the need for program compliance for fuel suppliers within their jurisdiction. States could, for a variety of political, economic or other reasons choose to suspend enforcement of provisions that require compliance with the permit acquisition elements of TCI, while nominally remaining part of the program. This again creates a risk of a shifting, unequal patchwork of implementation of the core TCI provisions across the region, where some states allow State Fuel Suppliers to ignore or re-interpret core provisions of TCI, while nominally claiming membership in the program, and continuing to receive revenue from it.

While the cross-jurisdictional nature of the TCI creates enforcement challenges, the program may struggle to be effective if it remains as silent on the subject of enforcement as the Draft MOU is at present. One way to solve this would be to require Participating Jurisdictions to pre-specify an enforcement mechanism, ideally acting as a check on any exercise of a *de facto* veto, e.g., not entirely dependent on action by Executive Branch agencies in Participating Jurisdictions. We recognize that Participating Jurisdictions will always have a *de facto* veto over participation insofar as they can withdraw from the program entirely, which is an appropriate mechanism for joint agreements like this. Of more concern is the risk that a jurisdiction could



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functionally exempt its State Fuel Suppliers from compliance while continuing to receive revenue from the program.

One potential solution would be to make the creation of an enforcement mechanism not solely subject to in-state executive branch action a requirement of entry into TCI. One possible mechanism to comply with this would be for states to specify (through Legislation, if necessary) that entities failing to comply with the permit acquisition requirements of TCI may be subject to civil enforcement actions and financial penalties, and that such civil enforcement could be brought by state regulators or the Regional Authority. This ensures that even if State regulators, executive branch agencies and prosecutors choose not to bring enforcement action in the case of a State Fuel Supplier becoming non-compliant with the program, the Regional Authority is given standing to pursue civil enforcement action in State court for the limited purpose of ensuring compliance with the core mechanism of the TCI.

Importance of Publicly Available Data for Program Transparency and Evaluation

The draft MOU speaks to jurisdictional review of the program, but not specifically on level of tracking, scope of review, and what data might be made available - to researchers, the public, or both - and how frequently. Program design should ideally build in collection of information to allow independent evaluation, e.g., of the effectiveness of investments using allowance revenue, or of the volume and type of biofuels coming into the region under the program, to inform future analyses for or decisions within the TCI or other programs. Making this data public would maximize the transparency and help stakeholders make informed decisions about how to comply with future obligations. Where such data contain confidential or proprietary information, third-party researchers could be granted access under strict nondisclosure agreements to allow independent verification of program activity without risk of exposing obligated parties' closely-held data; certain data might also be presented in aggregate to preclude tying any volumes to particular parties. A clear understanding of what data will be available over the long term, adds considerable value to prospective modeling of compliance scenarios. If researchers don't know the basis for program evaluation, calibrating models to expected market conditions in a way that reflects even a near-term understanding of critical markets much less a long-run transformational shift in transportation within TCI jurisdictions becomes more difficult. The material presented in the webinars and supporting material also lacks specificity, especially vis-a-vis compliance and impact of investments; the modeling predicts flows of money in and out of various uses, but does not offer insight into other key outcomes such as the composition of vehicle fleets, consumption of any specific type of fuel, or competition between different uses of sustainable energy resources (noting that modeled investments, as stated in the webinar, are illustrative and may not reflect actual jurisdictional choices).



Comments on Modeling Results (December 17, 2019 Webinar)

Slide 21. Sensitivity analysis could usefully be broadened. The sensitivity analysis for the BAU could usefully be broadened in several ways. First, the presentation could more fully characterize the BAU variability considered (under the vehicle efficiency rollback and AEO 2018 low oil price projections), to show impact on, e.g., vehicle miles traveled and electric vehicle fleet in addition to emissions. In addition, the impact of variability in BAU assumptions beyond oil price and vehicle efficiency, such as EV adoption rate and alternative vehicle costs on a reference scenario could usefully be examined. The 6%-19% emissions reduction trend examined, while wide, still represents a marked departure from historical trends; emissions from transportation have generally been increasing in the last decade, so a BAU assumption of reduced emissions implies a departure from historical trends. This should be represented for the analysis to more fully cover potential outcomes. Finally, the policy scenarios all take a single BAU trajectory as a reference, foregoing a main benefit of sensitivity analysis regarding the BAU: to understand the implications for key metrics -- e.g., expected trajectories of allowance price and revenues -- of alternate BAUs (see, e.g., Slide 26).

Slide 27. Placing results in historical context is useful, could be broadened. The historical trend and policy scenario impacts on key factors beyond the gasoline price (depicted on this slide) -- e.g., on-road fuel use and CO₂ emissions -- could be usefully incorporated in the presentation to provide important context.

Slide 28. Policy scenario impact on key outputs lacks important information on modeled compliance. Additional information on how the metrics were compiled would be useful. For example, the extent to which modeled compliance as captured here relies on demand response to price effects, allowance-fed investments, or use of biofuel or other alternative fuel, such as natural gas, is not clear. In particular, the modeled feedback between EV investments and increased EV sales and fleet presence seems to be a key driver of reduced emissions, and should be explained in greater detail.

Slide 29. Allowing investment within a cap-covered sector raises concerns about incentives, efficiency. The discussion of alternate investment scenarios (and variable cost-effectiveness) highlights potential problems with recycling cap investments within the covered sector. Analysis should examine how this set-up may impact program efficiency, and whether it sets up incentives for less effective applications of allowance revenue (to be made on a jurisdiction-by-jurisdiction basis).



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Again, we appreciate the opportunity to comment on the proposed Draft MOU and latest webinar results, as well as the robust and transparent discussion and process the TCI has undertaken to date and laid out for the next phase. If we can offer any clarification to this letter, or assistance to the broader process, please contact Colin Murphy at cwmurphy@ucdavis.edu or +1(530)754-1812.

Signed,

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