



18 November, 2019

Re: Proposed TCI Regional Policy Framework

Dear TCI Staff,

Thank you for the opportunity to comment on the Framework for the Draft Regional Policy Proposal document and associated materials. 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 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 the performance of the LCFS.

We appreciate the open and constructive discussion surrounding this proposed program. The following comments largely echo those of our July 19th submission, which generally went into greater detail. For the most part, those comments remain relevant and timely to the ongoing work developing the TCI framework. We provide a few additional high-level thoughts based on the draft released in October.

Applying a Carbon Price to Transportation Will Likely Reduce GHG Emissions

Based on experience from other similar markets, as well as extensive theoretical and modeling research, the basic principle of using a carbon price to reduce emissions is sound and it is quite likely that a carbon price as proposed in the framework will push emissions downward. Several of the proposed design parameters, such as assessing the tax on fossil fuel producers and importers, auctioning nearly all permits, exploring linkages with other carbon markets and adopting robust cost-control provisions reflect current best practices in carbon market design. Without more detail about program structure, allowance prices, and the treatment of alternative fuels, however, it is impossible to estimate the magnitude of any reductions. We would note that at carbon price levels generally viewed as politically palatable, \$10-25 per tonne, with modest increases per year, there is little evidence that significant reductions would be achieved without additional policy support, especially in the short to medium run. If the revenue from a low carbon price is spent effectively, it can drive emission reductions through financial incentives. The proposed framework leaves this in the hands of TCI member jurisdictions, with some scope for cross-jurisdictional collaboration on identifying shared needs. Placing some requirements on re-investment in low-carbon transportation, with specified allocations to enhance equity (such as the spending requirement in disadvantaged communities, as done by California's Cap and



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Trade system), and committing to investigating cross-jurisdiction impacts of investments to understand potential spillovers, both positive and negative, would ensure that the expenditure of TCI revenue aligned with program goals and maximized the chance of achieving the specified targets.

Biofuels Need to Be Included and Assessed on Life Cycle Carbon Intensity

Given the limited potential to reduce emissions from fossil fuels used in transportation, the overwhelming majority of emissions reductions are likely to come from substitution of non-fossil alternatives fuels. In most jurisdictions with effective transportation decarbonization policies, the predominant compliance option at present, and over the next several years, is likely to be the substitution of biofuels for fossil ones. GHG emissions from biofuel systems predominantly occur during feedstock production and conversion into fuels, and may be widely distributed over space and time. A lifecycle perspective, such as supplied by Life Cycle Analysis (LCA), is required to effectively address the full slate of emissions from fuels, which is why the fuel carbon policies in California, Oregon, and British Columbia, as well as proposed policies in Canada, Colorado and the Seattle region all employ LCA as the assessment tool for fuel carbon intensity. We are not aware of any option that ignores the biofuel lifecycle that can accurately assess biofuel carbon intensity. Without an accurate assessment of fuel carbon intensity, it is essentially impossible to assign an accurate financial incentive to biofuels. Excluding them from the system and not assessing any carbon charge for biofuels essentially defines them as zero carbon, but there is a clear consensus in the literature on these fuels to indicate that they are not so, and may incentivize relatively low-cost biofuels that other researchers and jurisdictions have ruled out as high risk for raising emissions. Treating them as equivalent to fossil fuels denies the proposed program access to the most immediately available option for reducing carbon, as well as the only option in some specialized segments of the transportation space where other alternative fuels are not appropriate. Some method for assigning relative financial incentive to these fuels is thus imperative.

Without a detailed description of how biofuels will be treated, it is impossible to arrive at an informed conclusion about the effectiveness or efficiency of the proposed TCI. Inaccurate or unscientific treatment of biofuels could potentially lead to excess emissions so great in magnitude that the program ends up actually increasing total emissions from transportation in TCI jurisdictions.

To Be Effective A Hard Cap Must Be Enforced

We note in the “Affected Fuels and Emissions” section that the draft framework proposes to cap emissions from transportation, and decline that cap over time. A hard cap on emissions would presumably create a strong incentive for obligated parties to invest in alternatives to fossil fuels.



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Such a cap could, in theory, be an effective tool to reduce emissions, though experience in other transportation sustainability programs highlights the need to actually enforce the cap if it's set. The Renewable Fuels Standard established what were ostensibly binding mandates for biofuel blending volumes, but in practice, these have been waived for advanced and cellulosic fuels, and reset to match expected production. Once the EPA sent the signal about how mandates would be re-set, the program lost much of its technology-forcing power. If the cap is envisioned as a key element to the emissions reduction mechanism under TCI, it is important that compliance with the cap becomes a meaningful motivator for investments in emissions-reducing technology. We would caution that there may be tension between effective cost-containment mechanisms and the desire to use the limit on permit allocation as a primary mechanism for reducing emissions. If well designed, cost-containment mechanisms can ensure the continuity of an incentive signal to lower emissions regardless of fluctuations in the background economy that may make the cap easier or more costly to achieve than anticipated.

Modeling Framework Should Include Alternative Reference Scenarios & High-Level Analysis of Cross-Model Interactions

The modeling framework accompanying the policy design includes interactions among several models and a reference case derived with member and stakeholder input. While member jurisdictions will apparently have the wherewithal to explore additional policy scenarios and reference cases as needed, we suggest there is benefit to including in the modeling alternative reference scenarios on key parameters such as oil price, macroeconomic conditions, or broad changes in alternative fuel supply trends, at least for a subset of policy scenarios. Excluding these introduces a potential blindspot to possible program impacts that are critical to consider in program design. In a similar vein, some high-level analysis of cross-model interactions and their combined uncertainties, or theoretical view of expected interactions across models, can help mitigate the risk of unforeseen biases in the overall analysis stemming from complicated interactions among modeling components. Moreover, given the inter-jurisdictional nature of the proposed TCI, and the flexibility for each jurisdiction to engage in its own modeling activities and associated policy development, it is especially important that the proposed policy framework be designed with potential interaction effects in mind.

Thank you again for the opportunity to comment on the proposed Framework for the Draft TCI rule. We appreciate the robust and transparent discussion and look forward to continuing to engage. 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.



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Signed,

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