**To:** Transportation & Climate Initiative Participants

**From:** Allen Greenberg (agcatp2@aol.com; 202-441-2138)

**Subject:** Comments on Draft MOU—Neglected Price-Shifting Strategies Should be Emphasized

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The primary objective that the Transportation Climate Initiative (TCI) should strive to achieve is to reduce transportation emissions as much as possible (meaning a 25% reduction from the Reference Case, instead of a 20 or 22% reduction which are also under consideration). To accomplish this, TCI should aim for the adoption of as high a variable cost to driving and parking as feasible, enabled politically by converting fixed and hidden driving and parking costs to usage pricing, where total costs to most drivers will actually go down. Incentives applied at the level of the individual driver are critical to meeting TCI’s carbon reduction goal. TCI’s other stated objective, raising revenues to support new clean transportation investments, should be less of a priority since cap-and-trade revenues are, by nature, variable and uncertain, and thus bonding such revenues (which is essential to raising reliable infrastructure investment capital) would be challenging. Only by establishing a robust permit price floor could bonding easily occur, but that comes with political challenges, as raising gas taxes tends not to be popular, and it is likely that such a floor would need to be accompanied by a price ceiling for state legislative passage, and that presents a serious risk to meeting TCI’s emission goals (as discussed further below). States also have other options to raise revenues for bonding that may or may not be more politically feasible than a permit price floor (e.g., the State of Oregon is moving toward a mileage fee structure and plans to bond that revenue).

Previous research, published originally by the National Academy of Sciences, Transportation Research Board (see: <https://journals.sagepub.com/doi/abs/10.3141/2530-14>), and subsequently expounded upon (see: [www.vtpi.org/G&E\_GHG.pdf](http://www.vtpi.org/G%26E_GHG.pdf)), demonstrated that re-pricing transportation by converting fixed and hidden transport costs to variable charges and rebates would very significantly curtail transportation-related Greenhouse Gas (GHG) emissions, substantially more than imposing carbon pricing on transportation fuels at the highest levels that may be politically plausible. The policy could be enacted either in lieu of or as a complement to a carbon price applied to transportation fuels. It is the rare pricing policy that offers people the opportunity to save money by driving less and forgoing a workplace parking benefit, and typically not costing them more money if they choose to continue their current levels of driving.

In research supporting this approach (conducted nationally, with state-by-state results reported), the primary policy that was initially explored was a regulatory approach, using the U.S. Environmental Protection Agency (EPA) Clean Power Plan under the Obama Administration as a framework, to set state-level transportation GHG reduction targets that are based on simultaneously deploying “no new taxes” (a) pay-as-you-drive-and-you-save (PAYDAYS) car insurance, (b) parking cash out, and (c) the conversion of fixed state and local vehicle purchase sales taxes into mileage-based fees designed to raise equivalent revenue. These strategies convert fixed costs into variable per-mile charges, or automobile commute parking subsidies into modal-neutral subsidies and rebates (pedestrians, cyclists, and carpool and public transit passengers receive the equivalent of automobile parking subsidies), giving travelers significant financial incentives to reduce their annual mileage and providing major co-benefits, including reduced traffic and parking congestion, automobile crashes, and local pollution.

To assess the impacts of the regulatory approach, a spreadsheet model was developed to provide state and Federal level estimates of year-2030 emission reductions from this transportation re-pricing policy bundle and results were compared to those estimated by EPA for the Clean Power Plan rule (which had been called the most significant U.S. government action ever for reducing GHG emissions, although it was never implemented). The study concluded that a universal application of these transportation re-pricing measures could reduce GHG emissions by 257 million metric tons (MMT) of carbon dioxide equivalent (CO2e) in year-2030 or 69% of the 375 MMT of CO2e reduction projected to result from implementation of the Clean Power Plan rule.

Isolating the results of the 13 TCI jurisdictions (12 states plus the District of Columbia) from this study, reductions of 45.8 MMT of CO2e in year-2030 were projected from the transportation price-shifting bundle, or more than triple the 13.5 MMT projected reductions of CO2e from the Clean Power Plan. Using the same modeling approach to estimate the impacts of a $50 price per ton of transportation emissions on TCI states (anchored off the U.S. Government Interagency Working Group on Social Cost of Carbon 2015 assessment), projected reductions of CO2e (excluding consideration of revenue use) would be 15.4 MMT. Nationally, it was calculated that the transportation re-pricing policy bundle would on its own reduce year-2030 vehicle miles traveled (VMT) and carbon emissions by 23.2% (a 257 MMT CO2e reduction from the 1,108 MMT CO2e U.S. EIA VISION 2014 AEO Base Case light-duty vehicle emissions projected), within the range of the 20-25% emission reductions being sought by TCI. At first glance, this figure might seem high, but it results from a very substantial amount of transportation re-pricing that would be occurring due to the modeled policy.

The original research focused on nationwide implementation of transportation price shifting, envisioned to occur through a regulatory requirement enabled by Section 115 of the Clean Air Act (allowing, according to multiple highly-regarded law professors, the President to enact regulations to limit “International Air Pollution” such as carbon emissions, where reciprocal actions are taken by other impacted nations). The regulatory strategy would have required states to have met driving-related emission targets derived from statewide implementation of all three of the transportation re-pricing policies, which is modeled loosely after the approach of the Clean Power Plan, where a state would need to find equivalent emission reductions to policy best practices if its political leaders did not want to fully enact such practices (with states enacting all of the best practices automatically considered compliant).

The combination of now having a U.S. President disinterested in carbon reductions, which could change in the next election, and perhaps more importantly a conservative-leaning U.S. Supreme Court that stayed enforcement of the Obama Administration’s Clean Power Plan that was also based on tapping regulatory authority from the Clean Air Act (although from Section 111, instead of Section 115), suggests that Federal regulatory action to advance transportation price-shifting strategies nationally (along with other carbon reduction strategies) is, at least under the current Administration, not going to happen. Nevertheless, individual states, or a group of states such as through TCI, could agree to implementing the bundle of state-level transportation price-shifting strategies (or to find equivalent emission reductions, if preferred) to achieve the modeled carbon emission reductions in their states.

A 2018 YouGov poll found a decent amount of public support for transportation re-pricing, especially when compared to other transportation pricing strategies. Public support nationally for a 42 cent gasoline tax with revenues returned by lowering other personal taxes was at 44.7% (which about equals the voting percentage for Washington State’s Initiative 1631, where the gas price hike was to start at 13 cents per gallon and then was to rise to 48 cents in current dollars by 2035). There was similar but slightly lower support (42.7%) if revenues are instead used for transportation purposes. Support in the Northeast was found to be a bit higher at 50.0% with gas tax revenues returned to lower other taxes, but only 46.6% if revenues are used to support transportation investments to reduce carbon emissions, as is the TCI plan. Nationally, there was higher overall public support for PAYDAYS car insurance at 47.6% (53.0% in the Northeast), parking cash out at 53.6% (57.2% in the Northeast), and converting vehicle sales taxes to comparable mileage fees at 53.1% (54.8% in the Northeast). (PAYDAYS insurance polls a little bit lower than the other price-shifting strategies likely because of concerns related to insurance costs for long drives. Products available in the marketplace typically cap such costs, but it is doubtful that many who were polled knew that.)

Transportation price shifting has the potential to garner bipartisan acceptance, as there is a history of Republican and conservative support for it. Federal tax credits for PAYDAYS insurance, for example, were written into a bill in 2007 by then Congressman Gerlach (R-PA).  Section 302 (Insurance Savings Incentive Program) of H.R. 2296, the Future Fuels Act, from the 110th Congress contains the applicable language.  The libertarian Reason Foundation has in the past called for enactment of a Federal parking cash-out law, at the time as a compromise to eliminate the then-existing Employee Commute Options program under the Clean Air Act (see: <http://reason.org/files/48d0848927c01bf5f340968091de65e9.pdf>).

Regarding the national polling numbers cited above, there is an even greater jump in support among Republicans than among the general population for the price-shifting strategies over a gasoline tax and rebate, polling at 36.9% Republican support for PAYDAYS insurance, 42.9% for parking cash out, and 42.9% for shifting from vehicle sales taxes to mileage fees (versus 29.5% support among Republicans for the gas tax and rebate), with Republicans under the age of 40 supporting these price-shifting strategies at 48.2%, 63.0% and 60.6%, respectively. The poll was not large enough to allow statistically significant results to be reported by political affiliation by region.

The very significant carbon reduction benefits from transportation price shifting would be realized at no cost to the TCI states implementing them or to individual motorists, which could partially explain their popularity relative to other transportation pricing strategies. Parking cash out is revenue positive to governments because a portion of employees who drive alone to work and are provided a tax-exempt car-parking benefit from their employers would, if offered, choose to accept an alternative commute benefit that in many instances would include some taxable cash. (Drivers typically save money from transportation re-pricing. For example, Brookings Institution research projected that 63.5% of households with insured vehicles (63.7% of urban households, 62.9% of rural households, and approaching 80% for the poorest of households) would save an average of 28% on their total premiums, or about $496 annually for households that do save with fully variable PAYDAYS premiums (Bordoff and Noel, 2008).

Why “savings-led” transportation re-pricing strategies are more popular than carbon pricing in any form, including when gas tax increases are coupled with an income tax rebate (providing “after-the-fact” savings), has not been well explored. A possible explanation is that people believe that they will see actual savings with transportation price-shifting while perhaps they will not with a promised tax rebate. Regardless of the reason(s), transportation re-pricing offers greater carbon reductions with higher public support than other pricing measures.

Another advantage of price shifting focused on reducing VMT and related emissions over carbon pricing that is agnostic as to the reasons for transportation emission reductions is that the former will lead to greater reductions in vehicle emissions other than carbon, fewer transport injuries and fatalities, and less congestion. Federal vehicle emission standards for criteria pollutants are mileage-based and are unrelated to vehicle and fleet fuel economy. Fewer miles driven due to pricing of VMT also means fewer injuries and fatalities (contributing to state-level “Vision Zero” goals), and congestion being curtailed (lessening infrastructure investment needs).

Substantial Failure Risks of Relying on a Narrow MOU

*Reference Case Projections of Future Fleet Fuel Economy Could Fall Short*

TCI’s projections of benefits start with expectations of trends absent TCI action (its so-called Reference Case). While TCI projects a 19% reduction in transportation sector emissions in its Reference Case, it correctly notes the uncertainty of such a projection. Among the possible outcomes without TCI action would be reductions of less than one-third of this, or of only 6%. A good part of the reason for the uncertainty is related to predicting future fleet fuel economy (plus predicting VMT). The Trump Administration has proposed rules to roll back Obama era fuel economy standards that have not yet gone into effect. Newspaper and other accounts of the Trump Administration’s activities to bring about such a roll-back have uncovered large gaps in the draft of the required Regulatory Impact Analysis, with preliminary findings failing to justify the proposal (i.e., costs are shown to exceed benefits), and thus making it vulnerable to court challenge as to its rationality. Perhaps more significant than the proposed roll-back (with its uncertain fate) is the Trump Administration’s July 26, 2019 final rulemaking by the National Highway Traffic Safety Administration (NHTSA) to significantly reduce fuel economy non-compliance fines (from $14 to $5.50 per tenth of a mile per gallon for model year 2019 and beyond). Lower penalties invariably lead to less compliance.

*Pressure to Include Price Caps, Coupled with Higher than Reference Case Projected Emissions, Could Lead to Goal Achievement Failure*

Opponents of cap-and-trade are likely to argue that resulting permit prices will be very high, evidence notwithstanding. Proponents, then, may be compelled to accept a price ceiling to show confidence in their more modest projections. This will be fine if emissions are heading toward what proponents project. If they are much higher, though, whether because of higher than expected VMT, lower fuel economy, or a combination of the two (likely caused by lower than Reference Case projected fuel costs) and the price cap kicks in, more permits will have to be released to accommodate the demand at the lower capped price (otherwise a secondary market would emerge, thereby effectively blowing the price cap) and emission goals will not be met. If the transportation re-pricing strategies were deployed, the variable price for driving and parking would be significantly higher than would be realized even if a very high emission permit cap were to be adopted.

Politics are less likely to initially block or require a subsequent revisiting of transportation re-pricing strategies than a cap-and-trade price ceiling. Unlike with transportation re-pricing, the risk of cap-and-trade not meeting targets can be high if fuel prices are very low compared to the projected Reference Case and there is an emission permit price cap and/or if there is a recession that leads the public to become resistant to high permit prices, especially if it is coupled with a statewide vehicle fleet saturated with fuel inefficient sport utility vehicles (that is encouraged by low fuel prices and/or the Trump Administration effectively rolling back fuel economy standards, either by issuing a rulemaking that withstands court challenges or manufacturers choosing to ignore standards because of the reduced fines).

*Low Fuel and/or Carbon Prices Would Mean Little Incentive for Behavior Change*

What separates out transportation pricing from other public policy measures is that it directly engages travelers in decisions that have a tremendous impact on meeting transportation carbon emission reduction goals. Low or bundled prices, providing little or no financial benefit for behavior change, encourage consumer choices that act at cross purposes with emission reduction goals. One of the biggest impacts of low fuel prices is that they encourage households with more than one vehicle (about 58% of U.S. households) to use the least fuel efficient one more. Maximizing variable driving costs (largely by reducing fixed and bundled car purchase, use, and storage costs), by contrast, provides a substantial incentive to consumers to curtail their driving and related emissions.

*Low Carbon Prices Would Mean Little Revenue for Supportive Transportation Investments*

While the proportion of projected emission reductions from the Reference Case due to price-inspired consumer behavior change versus infrastructure investments funded with cap-and-trade revenues was not readily made clear by TCI, various articles have said that the latter is especially important, and likely more so than the former. As such, if permit prices end up lower than projected, investments supported by revenues would also be lower by necessity. A lot, then, is riding on permit prices being high enough to meet projections related to consumer response and revenue goals, but not so high that it will inspire legislative roll-backs. This leaves a thin policy needle to thread warranting serious upfront consideration of additions and alternatives to cap-and-trade, especially if TCI does as it should and chooses the most aggressive carbon reduction goal of 25%.

Additional Measures Worthy of Consideration (but Not Analyzed Here)

Beyond the transportation price-shifting modeled here, and cap-and-trade modeled by TCI, there is the potential to deploy additional state-level policies that could alter the economics of consumer choices to further reduce transportation carbon emissions. Such measures fall under three broad categories: (a) additional transportation price shifting; (b) establishing a cap-and-trade carbon price floor (largely for revenue raising purposes); and (c) encouraging the purchase of fuel-efficient vehicles.

Under (a), states could convert annual vehicle registration fees to mileage fees (much like vehicle purchase sales taxes being converted to such fees, as proposed and analyzed by this submission). States could require employers to make available pre-tax transit benefits to their employees through their payroll systems, as some cities, including New York City, Washington, D.C., and San Francisco, are already requiring. Such an accommodation has the effect of reducing the out-of-pocket cost for transit commuters by the additional income and payroll taxes that would have otherwise been deducted from their wages when purchasing transit after getting paid versus when the transit fare is deducted as a “pre-wage” employee expense. States could also encourage employers, perhaps through tax credits, to offer parking cash out in a “more aggressive” form, such as by allowing employees to cash out their parking on a daily instead of a monthly basis (the more flexible the incentives, the more likely commuters will respond).

Under (b), the only way to ensure revenues for clean transportation investments is to establish a price floor for cap-and-trade allowances (with a higher price floor meaning more revenues). As noted earlier, a guaranteed revenue stream is essential for issuing investment bonds (state-level gas tax revenues are often bonded). Such a floor (if it does kick in) would also increase the economic incentive to travelers to reduce their carbon footprint. Even if the auction price always remains above the floor price, it would still, at the margins, likely have some impact on longer term consumer decisions related to purchases of vehicles (for fuel efficiency) and housing (for location efficiency) by creating an expectation that future fuel prices may be higher than otherwise. Enacting a high price floor, though, could run into political obstacles (especially if older, less efficient vehicles are driven more often by lower-income households). States seeking additional revenues for bonding for clean transportation investments may find other pricing measures, such as mileage-based user fees, more politically palatable. (The State of Oregon, the national leader in road user charging, has pledged to use such revenues for bonding, as noted earlier.)

Under (c), much has been written about whether consumers fully account for fuel economy in their vehicle purchase decisions (they don’t) and how purchase decisions can be influenced (e.g., Federal rules now require fuel economy labels in vehicle showrooms to translate fuel economy to vehicle fuel costs for the average driver). Feebates, where tax surcharges are placed on the purchase of fuel inefficient vehicles and tax rebates are provided for purchasing fuel efficient vehicles, provide direct consumer incentives that even the Obama era fuel economy standards do not provide. (Because current fuel efficiency standards are “footprint” rather than fleet based, the requirements are pegged to the size of the vehicles that consumers choose to purchase. If low fuel prices encourage consumers to purchase larger vehicles, manufacturers are not required to make such larger vehicles more fuel efficient than the footprint standard would dictate, even if the result is that the overall efficiency of vehicles sold is lower than regulators had projected.) Feebate policies could take many forms; for example, Minnesota offers $250 in toll credits for purchasers of electric vehicles.

Adding to the “Model Rule”

The model rule should provide states with an alternative compliance path to cap-and-trade that still must meet an equivalent reduction in transportation carbon emissions, especially since one TCI state governor has already stated his opposition to the gasoline price increase that cap-and-trade would effectuate. As noted earlier, emission reductions from the transportation re-pricing policy bundle was modeled to be 23.2% below a Base Case scenario.

The model rule must first clearly articulate the specific policies that would form the basis of the emission reductions. The policies in the transportation price-shifting bundle would be the same ones as specified in detail in the cited research, with their essential features highlighted below.

TCI should run the transportation price-shifting policy bundle through its own model to project emission reductions. Then, the specific policy parameters noted below should, if necessary, be ratcheted up a bit to achieve a projected 25% emission reduction. Such “ratcheting” could, for example, occur by increasing the percentage of insurance premiums that would have to be mileage based. Alternatively, any projected shortfall from the 25% emission reduction goal could be remedied by including one or more of the additional measures discussed in the previous section (e.g., converting vehicle registration fees to mileage taxes).

For PAYDAYS car insurance, the model rule would need to demonstrate that premiums will on average be at least 70% usage based. For parking cash out, the model rule would require that, when a parking subsidy is provided, an equivalently-valued subsidy for those who do not drive to and park at work also be offered or the parking subsidy loses its tax-exempt status at the state level. States would be required to demonstrate to TCI that the design of their cash-out requirements would lead to average cash-out values of at least $121 per space per month, or one-half the $242 required to recover the costs of providing and maintaining a space within a suburban above-ground two-story parking structure (Howe & George 2014).

For VMT fees replacing sales taxes on newly purchased vehicles (the third component of the transportation price-shifting policy bundle), the model rule would require that state law be amended to take the population-weighted combined state/local sales taxes that are charged on newly purchased vehicles and convert them to mileage-based taxes charged over a three-year period, set at a level designed to raise the same amount of revenue. (Many states already collect and rebate local sales taxes for vehicle purchases.)

States that implement all of the transportation price-shifting policies, as specified as an alternative compliance path in the model rule, should be presumed to be TCI compliant. States that adopt only one or two of the three price-shifting policies could rely on TCI’s emission projections related to those component parts of the policy bundle, with additional state remedies required only to make up the difference. An additional state remedy could be a transportation fuels cap-and-trade with such a system no longer bearing nearly as significant a burden or roll-back risk of failure because transportation price shifting would allow for significantly less of a fuel price increase to achieve emission reduction goals.