



PACIFIC FLEET CHARGING

Comments on the Transportation & Climate Initiative Draft MOU
Submitted by Pacific Fleet Charging LLC
February 28, 2020

We appreciate the opportunity to share our thoughts on the Transportation and Climate Initiative (TCI) MOU. We are pleased to see the Northeastern and Mid-Atlantic States take these necessary steps to improve air quality while addressing climate change. In the context of our market economy, it is hard to conceive of a simpler or more effective tool than a price signal paired with a market. We have several suggestions that we hope will be helpful as you craft a final MOU followed by a fully elaborated program.

Zero-emission transportation technologies will surely be a significant part of the solution to the climate crisis. My partners and I recently formed Pacific Fleet Charging so that we can accelerate electric vehicle (EV) adoption in California. We provide analysis and advice to help fleet owners and operators answer a range of questions about EV costs, benefits, charging infrastructure, utility rates and energy storage. We want to identify the fleets that can most readily improve their bottom line while benefiting all by adopting zero-emission technologies. We started our business in California because California has hit the brakes on ever-expanding petroleum use, while simultaneously incentivizing EVs and low-carbon fuels. We look forward to investing in the Northeast and Mid-Atlantic states as similar policies create a more favorable market for electrified transport.

Factors for Choosing a Starting Level and Trajectory

Because climate change is a physical phenomenon, its solutions can be quantified. The MOU should include a commitment to choose a science-based target as a guiding star. We encourage the MOU to include a commitment to choose annual reductions consistent with limiting global warming to 1.5 degrees Celsius.

In 2018 the IPCC issued a report evaluating impacts from 1.5 °C warming, and calculating pathways that could limit warming to 1.5 °C¹. To simplify, that report informs us that:

¹ *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to*

- we have already experienced just under 1 °C of warming²
- based on what we have already put into the atmosphere, another 0.5 °C of warming will also happen (likely between 2030 and 2050)
- 1.5 °C of warming will present significant problems and risks, but notably fewer problems and lower risks than would flow from 2 °C of warming
- once GHG emissions have been reduced to net zero, global warming will eventually level off
- if we want temperatures to level off at 1.5 °C above a baseline, we have a 50/50 chance to succeed if we can reduce emissions to net **zero** by about 2055
- if we want better odds, we should get to net zero by 2040
- one trajectory that *might* restrain warming to 1.5 °C would be to reduce the 2010 GHG emission level 45% by 2030, then further reduce to net zero by 2050

Those projections imply deep emission reductions from every sector of every nation's and every state's economy. Achieving those projections will require bold investments. Success will require revolutions in energy, transportation, land use and agriculture.

The TCI does not attempt to address all of the region's emissions, its many industrial sectors or the millions of emission sources; the TCI sensibly focuses on the transportation sector, specifically upstream on the river of fuel that we burn. There, an emissions cap can readily be implemented.

How ambitious should the cap be? Compared to much of the world, the Northeastern and Mid-Atlantic states are fortunate to have abundant technological prowess, strong governance and economic resources that will allow the region to at least do its share. In other words -- borrowing from the IPCC 1.5 Degree Report -- at a minimum the compliance curve should reduce transportation GHG emissions 45% below 2010 levels by 2030, then further reduce to zero by 2045.³

Drawing that compliance curve comes later. The MOU need only set out the following factors to guide that more refined target setting:

- Is the pace and degree of emission reductions consistent with reducing emissions to zero by 2045?

the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. In Press.

² All warming figures are in comparison to global average temperatures from 1850 - 1900.

³ Because transportation fuel is easier to regulate than many other GHG sources, the case can be made for seeking more than merely a proportionate share of emission reductions from the transportation sector.

- Does the compliance curve have quantified intermediate goals by which the states can evaluate progress?
- Do known alternative fuels, technologies, and transportation strategies counsel that the compliance curve could be more aggressive or must be less aggressive?
- Are there interim transparent progress evaluations every few years?
- Is there a value in a soft start, giving consumers time to adapt to different choices rather than rail against what may be misperceived as higher costs?

Compliance Period Considerations

The experts have been shouting at us, albeit in the measured tones of science, that we don't have much time. Long compliance averaging periods, or back-loaded compliance intervals, simply postpone critical progress. Moreover, delaying compliance invites trouble in the event any regulated party dissolves or goes bankrupt before fully complying.

In that regard, the three-year compliance periods used in California's economy-wide Cap-and-Trade program may not be appropriate for the TCI. The overall compliance required for each three-year period in California's Cap-and-Trade program is divided 10 / 10 / 80% between years 1, 2, and 3 respectively – in other words quite backloaded.

California was in a different position than the TCI states find themselves in for several reasons. First, one of California's goals appears to have been to survive political challenges long enough to demonstrate that such a system could succeed. Such a system's success is now no longer in doubt; after implementing its Cap-and-Trade program, California simultaneously grew its economy, increased efficiency, and reduced emissions. Even before that program's first decade ended in 2020, California had already reduced emissions to 1990 levels. Jurisdictions that follow need not be as cautious.

Second, California's cap covers not just emissions attributed to transportation fuels, but emissions from all major sources in the economy. Some industrial sectors needed additional time to invest and adapt to carbon constraints. Simply switching fuels is less difficult. Given a worldwide fuel market and abundant alternative fuels, gradual fuel switching can begin immediately.

Finally, time matters. Starting a program in 2022 puts the TCI states in a different position than California. Postponing compliance until late in a multi-year compliance period would be inappropriate given the limited number of years we have left during which we must make dramatic progress reducing GHG emissions.

Multi-year compliance periods are touted as providing flexibility. Indeed, some flexibility can improve any regulatory program. But a TCI regulated party will have flexibility from the beginning, because the contemplated program will allow purchase of any necessary credits, trading, and likely, offsets. Consumers will also have flexibility; consumers and businesses now have many more vehicle and fuel choices than were available to Californians a

decade ago. Who knew there would be an electric Hummer? If one-year compliance periods caused petroleum fuel prices to rise at times, consumers will move faster toward cleaner, zero-emission technologies.

Representatives of the petroleum industry will undoubtedly push for ‘flexibility’ that amounts to postponement. Many of those requests, no matter how rationalized, will at bottom reflect a narrow perspective: how much money can shareholders make and how soon, by selling more of a dangerous product? Buying any argument for slower progress would simply kick the barrel down the road.

If fuel suppliers pass all of their costs to consumers, an aggressive compliance curve and one-year compliance periods could cause ever-so-slightly larger price increases.⁴ Such increases could have several effects: fuel purchasers will complain, they will wake up to the need to get cleaner fuels, and a higher price of credits will give TCI states a bigger fund with which to give consumers relief in the form of more efficient solutions.

Why would we *hide* the price signal that is the heart of TCI? We now know that fuel suppliers have understood climate change for decades, and have prepared for regulation for several years. An extraordinarily high burden of proof is squarely on petroleum suppliers – enterprises that sometimes measure revenues in the billions – to convince us that delaying emission reductions will be good for the breathing public we serve. If fuel suppliers believe that their customers need a gentler touch, they are free to devise their own pricing schedules that delay passing through any TCI costs.

A second risk attends slow or back loaded compliance curves: bankruptcy. The world of technology and fuels is at a tipping point, about to slide at an unknowable pace off the fossil fuel peak on which we find ourselves so precariously perched. Rapid changes in transportation may leave fossil fuel providers unable to pay debts in future years. Let’s not extend credit.

While leaving room for a soft start, the MOU should set out factors that favor annual compliance periods.

Stability Mechanism Considerations

We have no specific design recommendations, but offer the following general observations. A carefully designed buffer such as a containment reserve can play a valuable role, and should be available in a crisis. But any stabilizing mechanism should be limited to narrow circumstances, and designed in a way that it does not immediately – in the absence of a true crisis – simply dilute the price signal and detract from the predictability that will drive the desired investments. Other emission trading programs have faltered after issuing free credits

⁴ Petroleum prices are volatile; gasoline and diesel price changes are common. Any price changes linked to a TCI program are likely to be modest, similar to the additional expense a driver would experience by driving at 72 mph instead of 70.

too liberally. Once that door is open, pressure for special treatment from one sector or another soon becomes difficult to resist.

Other Recommendations

The MOU should leave open a door for a thoughtful discrimination between gasoline and diesel fuel. The current draft throughout refers only to CO₂ emissions. Criteria pollutant emissions still matter. Fortunately, emission control from gasoline engines is quite advanced. Meanwhile, health research increasingly fingers diesel particulate matter as a serious concern – so serious in the short term as to dwarf the deleterious indirect health impacts of CO₂ and other criteria pollutants common to both gasoline and diesel combustion. In addition to direct harm to human health, diesel particulate includes black carbon, a known warming agent.

Any differentiation between gasoline and diesel should be done with a broad brush.⁵ For example, CO₂ emissions from diesel volumes could be multiplied by 1.1, and emissions from gasoline could be multiplied by a factor of less than 1 to yield a corresponding diminution. Such a system would selectively dis-incentivize diesel combustion while reducing any burden on the many individuals who are currently dependent on their gasoline vehicles.

Enforcement Coordination

The draft MOU appropriately recognizes that implementation and enforcement of programs created under each participating jurisdiction's law is a task for each jurisdiction. Nevertheless, because many reporting entities will be enterprises that supply fuel in several jurisdictions, the authorities tasked with ensuring that emission reports are timely, complete, and accurate will need to coordinate and share information. The final MOU should ask signatory jurisdictions to commit to that coordination and information sharing. There is a significant side benefit to enforcement coordination: as different jurisdictions discuss their enforcement strategies and activities, the tendency will be toward a more level playing field. In that way, no business in one jurisdiction is in a better or worse position simply because that jurisdiction is more or less effective at identifying and deterring violations.

Strive for Simplicity

Under the MOU, the participating jurisdictions will use a Regional Organization to carry out many program functions. That collaboration could be extended to administering spending and investment programs (while still recognizing each jurisdiction's separate proceeds and separately-determined spending priorities).

⁵ Accounting for pollutants other than CO₂ would immediately become complicated. In fact, criteria pollutant emissions defy precise measurement at an upstream point of regulation due to differing engine technologies and even changing atmospheric chemistry.

That suggestion stems from complaints we occasionally hear from businesses here in California. California invests in carbon reduction and clean transportation through numerous state agencies (sometimes through numerous programs within just one agency), 35 regional air quality regulators, four investor-owned utilities and numerous publicly-owned utilities. Each program has different rules, deadlines and public communication channels. Thus, there is a likelihood that incentive funding goes disproportionately to businesses and organizations resourceful enough to simply find the grants, sometimes by hiring consultants to do so.

Ideally the administrative burden for both funder and recipient should be minimized at every turn. Moreover, reducing complexity reduces the need to expand government, depriving program critics of ammunition. Already in the Northeastern and Mid-Atlantic states some are warming up a misguided critique, calling the TCI -- a regulation that will protect health and the environment -- "another tax." Ideally the MOU should provide generally for each state to determine its spending choices, but employ an efficient way to administer any grants or other programs; that may be a central administrator.

Begin Work on a Low-Carbon Fuel Standard

As part of TCI or as a complementary separate program we strongly recommend adopting a low-carbon fuel standard (LCFS). Such programs in California, Oregon, and British Columbia have begun to build a much-needed bridge from petroleum to cleaner fuels. The sooner a similar bridge is built in the TCI jurisdictions, the easier it will be for the TCI to succeed.

An LCFS program would complement a cap. Under an LCFS, the economy can use as much fuel as it needs. The *type* of fuel changes. Such programs favor fuels with lower associated life-cycle emissions (lower 'carbon intensity') compared to petroleum. The government collects and spends no money; rather producers of high-carbon fuels must buy credits from innovative low-carbon fuel suppliers to comply with an annually declining carbon intensity standard.

In practice, LCFS programs have reduced emissions in the short term and laid the foundation for even deeper reductions in the future. For example, California looked at its ambitious long-range emission reduction targets and realized that those targets were unachievable with a petroleum-based transportation system. California developed a regulation and software to support a robust LCFS program. The price of California LCFS credits has remained reasonable, modestly raising petroleum prices while generously supporting innovators and new industries. Cleaner fuels are emerging from a marketplace of competing technologies.

Each year roughly two billion dollars flows toward clean fuel producers without the government raising or expending any revenues. Gradually middle eastern petroleum refined by Texas-based companies is giving way to biofuels and electricity, fuels that can be produced in almost every state.

The staff who implement California's LCFS have a demonstrated record of sharing their experience and software with interested jurisdictions. We encourage you and the participating states to tap that resource.

Sincerely,

/s/

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