

**September 30, 2020 Caiazza Response to the Invitation for Public Input
Transportation and Climate Initiative**

I have prepared these comments in response to the Transportation Climate Initiative (TCI) to the latest invitation for public input. I have general comments on the public input numbers, carbon pricing relative to the TCI, and environmental justice. Finally, I want to comment on the difference between weather and climate that presenters on recent webinars do not understand.

I am a retired air quality meteorologist with extensive relevant experience. I became familiar with transportation planning and modeling when I modeled the air quality impacts of transportation projects including the Ted Williams tunnel in Boston. I have extensive experience with air pollution control theory and implementation having worked every cap and trade program affecting electric generating facilities in New York including the Acid Rain Program, Regional Greenhouse Gas Initiative and several Nitrogen Oxide programs. The opinions in these comments do not reflect the position of any of my previous employers or any other company I have been associated with, these comments are mine alone.

Public Input

I am very concerned that the proponents of the TCI are operating in a bubble. The scale of the TCI opportunity slide presented at the September 16, 2020 webinar stated:

- 72 million people
- \$5.3 trillion in GDP
- 52 million registered vehicles
- Modeled TCI cap would cover more than three times the carbon pollution currently covered by the RGGI cap

To date there have been between 4,000 and 5,000 comments received but the presentations claimed that around 10,000 people have responded. The majority of those comments were in favor of the proposal. My concern is that even if an order of magnitude more people are aware of this initiative that still represents 0.14% of the population in the region. There is no reason to believe that the majority of the 52 million registered vehicle owners are in favor of a program that will increase the cost of fuel as you have proposed. If the costs are higher than you propose or the cap becomes binding and limits the fuel available then the public backlash will likely undo much of what you have accomplished.

Carbon Pricing

I recommend Bjorn Lomborg's latest book titled "[False Alarm: How Climate Change Panic Costs Us Trillions, Hurts the Poor, and Fails to Fix the Planet](#)" and agree with most of his arguments. His first recommendation for fixing climate change is to "effectively implement a tax on CO2

emissions. He notes that “Most economists agree that the most effective way to reduce the worst damage of climate change is to levy a tax on CO₂ emissions.” The basic theory is that the true costs of CO₂ emissions are not reflected in the cost to the consumer so the solution is to incorporate those costs with a carbon price. In this instance the only thing I want to discuss is his description of the carbon tax. He states that the optimal climate policy requires a globally coordinated carbon tax. In other words, he advocates a tax on all sectors that emit CO₂ across the world.

I have been following the concept of [carbon pricing](#) for quite some time. While I agree that the theory that setting a carbon price could lead to the least-cost decarbonization, I also believe that there are a whole host of [practical problems](#) that mean it won’t work as suggested by the theory. That is especially true if the carbon price is not implemented globally across all sectors. Those concerns include the following: leakage, revenues over time, theory vs. reality, market signal inefficiency, control options, total costs of alternatives, and implementation logistics. In addition, The Regulatory Analysis Project (RAP) recently completed a study for Vermont, [Economic Benefits and Energy Savings through Low-Cost Carbon Management](#), that raises additional relevant concerns about carbon pricing implementation.

I will discuss only one of my concerns in more detail here. Pollution leakage refers to the situation where a pollution reduction policy simply moves the pollution around geographically rather than actually reducing it. Ideally you want the carbon price to apply to all sectors across the globe so that cannot occur. Lomborg notes “that is possible only in a fairy-tale world” and that it won’t happen in real life. As a result, a carbon price in one jurisdiction and not others will very likely cause leakage. The TCI carbon price proposal is proposed for just the Northeastern New York. Any significant carbon price just in this region will incentivize purchasing fuel outside the region simply moving the CO₂ pollution elsewhere.

I don’t think any of the modeling you have done completely addresses the concerns I have raised. I am particularly concerned that the state fuel suppliers have no experience with carbon trading, have limited options to reduce carbon emissions, and few reasons to bother trying to reduce carbon emissions. As a result, modeling that presumes the affected sources will act rationally don’t represent what is going to happen. This means that this will be treated exactly like a tax by the affected state fuel suppliers. As a result, any reductions that occur will have to come from other programs. If Federal programs are the only source for reductions then why bother? Therefore, it is incumbent on the TCI to develop programs that effectively produce reductions to meet the reduction trajectory chosen.

Environmental Justice

The Ensuring Environmental Justice and Equity in a Regional Low-Carbon Transportation Program webinar is concerning relative to emission reductions. Carbon pricing proposals are based on the presumption that the funds received will be spent effectively. I have evaluated the results of the [Regional Greenhouse Gas Initiative](#) (RGGI). The RGGI states have been [investing investments of RGGI proceeds](#) since 2008 but their [investments to date are only directly responsible for less than 6%](#) of the total observed reductions. Furthermore, from the start of the program in 2009 through 2018, RGGI has invested \$2,775,635,415 and reduced annual CO2 emissions by 3,091,992 tons. The resulting cost efficiency, \$898 per ton reduced, is remarkably inefficient compared to the Integrated Working Group Social Cost of Carbon of ~\$50.

There is no doubt that there are transportation environmental justice issues. However, unless the TCI attempts to address those issues while at the same time reducing CO2 emissions as effectively possible the cost per ton reduced will be even less effective relative to the social cost of carbon. I have no objection to supporting the environmental justice concerns but I suggest that this be factored in when the cap and reduction targets are chosen.

Weather and Climate

Finally, I have a comment about the introduction at the Ensuring Environmental Justice and Equity in a Regional Low-Carbon Transportation Program webinar. Vicki Arroyo's introduction made the obligatory comments that climate change is here and an imminent threat to civilization. The problem is that she is incorrectly conflating climate effects with weather events.

I have two degrees in meteorology, am a retired certified consulting meteorologist accredited by the American Meteorology Society, and have over 40 years experience as a practicing meteorologist. The introductory comments suggest that we are seeing climate change now when in reality every example she gave was weather. Weather is not climate! [One way](#) to think of it is: Climate is what you expect, weather is what you get.

One example given was the wildfires in California and Oregon. The headlines made the same claims as Arroyo. California [Governor Newsom vows to face climate change head](#) on fighting the wildfires. [CNN claims](#) that the warming climate is going to make things worse. Of course in this politically charged year [others claim](#) climate change is not the primary factor and [argue for other causes](#). As a meteorologist I can only argue with any kind of authority about the climate data. The [satellite observations show a decreasing trend](#) in global wildfires and the data show [high temperatures in the past](#) too. Ultimately, [wildfires have always been a problem in California](#). Finally another meteorologist looked at what caused the [fires in Oregon and](#)

[Washington](#) and concluded that climate change was not a factor. In my experience, every time ([here](#), [here](#), and [here](#) for example) I have looked at some weather event that is claimed to be related to climate change I have been unable to find any real evidence supporting the claim and plenty of evidence to argue otherwise.

The constant refrain that every extreme weather event is “proof” that climate change is happening now bothers me because the claims are used to justify the need to change the transportation sector. In fact, were it not for the climate emergency do we really need to change the energy system? Worse is the fact that the transition to a green economy diverts resources better spent to adapt and strengthen infrastructure for extreme weather observed in the past. For example, if a storm exactly like tropical storm Sandy were to occur again would we be able to weather the storm with minimal impacts? If not then we are doing something wrong.

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