



## **Senate Environmental and Energy Resources Committee and Senate Transportation Committee Joint Hearing**

### **“The Transportation and Climate Initiative: A Market-Based Approach to Reducing Transportation Emissions in Pennsylvania”**

**January 29, 2020**

#### **Testimony of Drew Stilson**

Good morning and thank you very much to the Chairs of the Senate Environmental Resources and Energy Committee, Senator Yaw and Senator Santarsiero, to the chairs of the Senate Transportation Committee, Senator Ward and Senator Sabatina, and to the other members of the committees for the opportunity to speak to you today.

My name is Drew Stilson, and I am Senior Policy Analyst at Environmental Defense Fund. I am here today representing our approximately 75,000 members across Pennsylvania. EDF is an international environmental advocacy organization with about 2.5 million members nationwide. We are dedicated to finding innovative approaches to solving some of the most difficult environmental challenges. Whenever possible, we aim to collaborate with private-sector partners, state and federal leaders, and other organizations interested in capitalizing on market-based solutions to cost-effectively tackle environmental problems.

I've been invited today to provide EDF's perspective on the Transportation and Climate Initiative, or “TCI,” their efforts to address climate pollution from the transportation sector in the Northeast and Mid-Atlantic regions of the U.S., and specifically to provide an overview of the potential environmental and economic benefits of the program under consideration. The Transportation and Climate Initiative is a regional collaboration of 12 Northeast and Mid-Atlantic states and the District of Columbia that seeks to improve transportation, develop the clean energy economy and reduce carbon emissions from the transportation sector.

It is important to begin by pointing out that the TCI effort is still in the development process, and the conversation around the details of a potential program is ongoing. Most recently, the TCI jurisdictions outlined the core components of the program in a draft memorandum of understanding and are currently accepting input on this policy proposal before releasing a final version this spring. At that time, individual states will begin their own processes of determining whether to collaborate with neighboring states, and, if so, states would then move forward with the development of a model rule. By remaining involved in this development process,

Pennsylvania still has ample opportunity to provide input on the aspects of the program that hold the most significance to Pennsylvanians.

Before getting into the specifics of TCI, I would first like to briefly discuss the importance of putting a clear limit on carbon pollution for the Commonwealth. I will then talk about the benefits of using market-based programs to address environmental challenges, flexibility for Pennsylvania to fund and direct transportation investments under the TCI program, and opportunity for Pennsylvania to remain engaged in the program's development process.

### Mitigating Pollution Provides Environmental and Economic Benefits

Pennsylvania is the country's fourth largest emitter of greenhouse gases. It is estimated that transportation is responsible for about a quarter of Pennsylvania's total net emissions,<sup>1</sup> making it the second largest source of the Commonwealth's emissions overall. Emissions from transportation are expected to remain significant over the upcoming decade absent policy intervention. From a nationwide perspective, transportation surpassed the power sector to become the largest source of climate warming gases in 2017.<sup>2</sup>

Pennsylvania is already feeling the impacts of climate change. Global temperatures have increased by 2 degrees Fahrenheit since the beginning of the 20th century, leading to an increase in dangerous nor'easters and cyclones; extreme heat especially in urban areas; and coastal flooding as sea levels rise. Increased warming is likely to adversely impact agriculture, the state's number one industry, further deteriorate air quality, and threaten outdoor recreation, including winter sports.

The changing climate has direct consequences for Pennsylvania's transportation systems. A special report from the Pennsylvania Auditor General noted that climate-related costs to Pennsylvania totaled at least \$261 million, including \$125 million in infrastructure damage in 2018.<sup>3</sup>

Aside from the climate impacts, fuel combustion produces harmful air pollution in the form of particulate matter, air toxics, and ground level ozone, the main ingredient in smog. These pollutants all have adverse health effects for the people of Pennsylvania, which include exacerbating asthma symptoms and other respiratory illness, especially for those who live closest to busy roads and particularly for children and the elderly. Air pollution was found to cost the

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<sup>1</sup> Based on 2019 Pennsylvania Greenhouse Gas Inventory report. Available at:

[http://files.dep.state.pa.us/Energy/Office%20of%20Energy%20and%20Technology/OETDPortalFiles/Climate%20Change%20Advisory%20Committee/2019/12-20-19/FINAL%20Inventory%20-%202019\\_2019-12-20.pdf](http://files.dep.state.pa.us/Energy/Office%20of%20Energy%20and%20Technology/OETDPortalFiles/Climate%20Change%20Advisory%20Committee/2019/12-20-19/FINAL%20Inventory%20-%202019_2019-12-20.pdf).

<sup>2</sup> See EPA. 2017. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017. Available at:

<https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2017>.

<sup>3</sup> See Pennsylvania Auditor General Eugene Deqasquale's special report, "Climate Crisis: The Rising Cost of Inaction." Available at:

[https://www.paauditor.gov/Media/Default/Reports/RPT\\_Climate\\_crisis\\_111219\\_FINAL.pdf](https://www.paauditor.gov/Media/Default/Reports/RPT_Climate_crisis_111219_FINAL.pdf).

U.S. economy roughly 5 percent of its GDP in 2014, and transportation is one of the four highest contributing sectors of the economy to air pollution.<sup>4</sup>

Mitigating air pollution can produce significant economic benefits. In the power sector, as emissions have gone down, we have seen thousands of new jobs created in the booming clean energy industry, and ratepayers are saving money on electricity through improvements in building energy efficiency. The potential for cost savings also exists in the transportation sector, where investments in electric vehicles, clean transit options, and efficiency improvements can save Pennsylvanians money on fuel and vehicle maintenance costs.

Pennsylvania needs to tackle carbon pollution from the transportation sector by putting a limit on such pollution – just as we do for other harmful air contaminants.

### Markets Can Help Solve Environmental Problems

EDF has long been a proponent of market-based policies to address environmental problems. Market-based approaches under the right circumstances can reduce compliance costs and improve environmental outcomes compared to other more prescriptive regulations, using the flexibility inherent in the program design to allow for regulated entities to determine the most efficient and cost-effective ways to reduce pollution.

In a cap-and-trade or cap-and-invest program, such as is contemplated under TCI, a cap is set on total emissions to limit pollution, and the cap decreases over time. Companies buy and sell allowances that let them emit a certain amount under the pre-determined cap as supply and demand set the price of an allowance. Trading gives companies a strong incentive to save money by cutting emissions in the most cost-effective ways.

We have been successfully harnessing the power of markets for decades to solve our most pressing environmental challenges. In the 1990s as acid rain caused by sulfur dioxide emissions from power plants threatened our aquatic life and forests, a cap-and-trade program was put in place, requiring drastic reductions in sulfur dioxide emissions, but allowing each company to decide how to make the cuts. Plants that lowered their pollution more than required by the cap were able to sell extra allowances to other plants, creating a new market for allowances. This approach drove emissions down faster than predicted and for a fraction of the originally projected cost.<sup>5</sup>

### TCI as a Tool to Improve Transportation in Pennsylvania

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<sup>4</sup> See Tschofen ,P., Azevedo, I., Muller, N. 2019. Fine particulate matter damages and value added in the US economy. Proceedings of the National Academy of Sciences Oct 2019. Available at: <https://www.pnas.org/content/116/40/19857>.

<sup>5</sup> According to a 2015 discussion paper from Resources for the Future, cost savings of the program were estimated to be at least 15 percent and perhaps as high as 90 percent compared to a counterfactual command and control program. See Schmalensee, R. and Stavins, R. 2015. Lessons Learned from Three Decades of Experience with Cap-and-Trade. Resources for the Future. Available online: <https://media.rff.org/archive/files/document/file/RFF-DP-15-51.pdf>

TCI's cap-and-invest framework builds on this by generating additional funding for transportation programs through an allowance auction market. As noted above, companies, in this case fuel distributors, can buy and sell emission allowances that let them emit a certain amount, typically one ton of carbon dioxide for each allowance. States have a few different options for distributing allowances to covered sources, including by selling them in an allowance auction, which generates revenue as covered sources purchase allowances. Revenues generated by the auction can then be directed by the state to various transportation measures like incentivizing purchases of more efficient vehicles, funding transit projects, or mitigating costs for impacted communities through rebates or tax relief.

Another way states could distribute allowances is through a consignment auction in which allowances are provided at no cost to covered sources or certain entities, which are then required to consign those allowances for auction. In this system, the revenue is collected by the consigning entities rather than the state, but it can accomplish similar goals by directing program revenues in ways that promote desired outcomes. For example, some portion of the available allowances may be allocated to companies that develop clean transportation fuels, manufacture electric vehicle charging equipment, or produce electric farm equipment or other heavy machinery, and the revenue they receive helps lower the costs of deploying these technologies. Allowances could also be distributed to efforts that address the needs of rural communities, low-income communities, or other groups that may be impacted by the upfront costs of the program.

Because TCI leaves it to the states to identify complementary policies and determine how to direct investments, Pennsylvania has plenty of latitude to create policies that address the transportation needs unique to its communities. Many of these policies can provide cost savings directly to individuals within the Commonwealth.

For example, providing incentives to purchase electric vehicles and funding electric vehicle charging infrastructure will allow drivers in Pennsylvania to save money on fuel and on vehicle repairs, because electric vehicles require less maintenance. Investments in clean transit options and safe bicycle and pedestrian infrastructure across the state provide Pennsylvanians cheaper alternatives to driving, and drivers benefit from reduced traffic congestion, which costs Pennsylvanians in the form of lost time and productivity.

Complementary policies can also direct investments to support vulnerable communities that are most likely to be impacted by the upfront costs of the program. In rural communities that don't have access to alternative transportation options or low-income communities whose finances are more sensitive to changes in transportation costs, financial incentives for fuel efficient and electric vehicles, more access to reliable transit options, or rebates and tax relief can alleviate costs. Transportation pollution disproportionately impacts low-income communities and communities of color, which are often located closer to heavily trafficked roads where pollution from cars is concentrated. Improvements in air quality directly benefit these communities by reducing their exposure to hazardous pollutants.

Initial modeling results from TCI have shown modest net benefits to the economy. Depending on the stringency of the cap, the models show that the region might expect annual proceeds ranging

from \$1.4 billion up to \$5.6 billion region-wide that can be used to fund various transportation investments. More ambitious caps—meaning, securing greater pollution reductions in the next decade—will result in greater proceeds.

Businesses and individuals are expected to save money on fuel expenditures, lower congestion, and lower vehicle maintenance costs. By 2032, these savings produce an expected \$700 million to \$2.8 billion increase in GDP for the region compared to a scenario in which the TCI program is not implemented. The results also show a \$470 million to \$2 billion increase in disposable personal income and 1,900 to 8,900 new jobs depending on the stringency of the cap. Health benefits from improved air quality are estimated to total \$105 million to \$447 million in 2032, with up to 1,300 fewer incidences of asthma symptoms and up to 24 fewer premature deaths.<sup>6</sup>

Residents support this program according to recent polling data from MassINC, which found that 65 percent of residents polled in Pennsylvania support the policy. The poll showed broad and bipartisan support for an array of transportation improvements and financial incentives to purchase more fuel efficient and electric vehicles.<sup>7</sup> Another poll released by The Nature Conservancy found that 75 percent of small town and rural voters support the creation of a clean transportation fund. The poll also found that 63 percent of voters in Pennsylvania are willing to pay to fund clean transportation choices.<sup>8</sup>

#### Opportunities Remain for Pennsylvania to Engage in the Development Process

States that stay actively involved in the ongoing development process of TCI will have a say in the remaining details of the program and ensure that the unique needs of their residents are met. I encourage the committee members here today to consider the economic and environmental benefits this program can produce. This program presents a unique opportunity to reduce pollution and improve transportation at low cost.

To conclude my remarks today, EDF commends the committee for hosting this important discussion on the Transportation and Climate Initiative, and again respectfully suggests that Pennsylvania remain involved in the development process for the TCI program. Using tools like TCI, Pennsylvania can fund much-needed improvements and provide clean transportation to the people of Pennsylvania. Placing a firm limit on carbon pollution – and then letting that carbon pollution “limit” drive a price in the fuel market can help ensure the most cost-effective deployment of clean transportation and mobility options.

Thank you again for the opportunity to testify today.

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<sup>6</sup> A summary of TCI’s initial modeling results is available at:

[https://www.transportationandclimate.org/sites/default/files/TCI%20Modeling-Results-Summary\\_12.17.2019.pdf](https://www.transportationandclimate.org/sites/default/files/TCI%20Modeling-Results-Summary_12.17.2019.pdf).

<sup>7</sup> More details about the polling are available in MassINC’s polling brief, “Voters in largest Northeast, Mid-Atlantic states are open to new policy to reduce transportation emissions.” Available at:

<https://files.constantcontact.com/e6e14db6301/c92d1e91-6128-4e0d-9c37-fb3b28be67e6.pdf>.

<sup>8</sup> More details about the poll commissioned by TNC is available in the memorandum, “Small Town & Rural Voters’ Views of Investments Related to the Transportation and Climate Initiative a Clean Transportation Fund in the Northeast & Mid-Atlantic.”

[https://www.nature.org/content/dam/tnc/nature/en/documents/TNC\\_TCI\\_Survey\\_2019\\_Public.pdf](https://www.nature.org/content/dam/tnc/nature/en/documents/TNC_TCI_Survey_2019_Public.pdf).