

Why New York State Needs a Clean Transportation System

A Plan Is Needed to Reduce Emissions, Boost Revenue, and Ensure Reliable Transit

HIGHLIGHTS

Transportation accounts for an increasing share of emissions from our economy and is critical to achieving the state and region's ambitious climate goals, improving the health of residents, and making our infrastructure more resilient to the ravages of extreme events such as Hurricane Sandy. One way to help reduce emissions and simultaneously bring in money to modernize this ailing system is through a cap-and-invest program for transportation. The first multistate cap-and-invest program in the United States has proven to be a success in the power sector of nine Northeast and Mid-Atlantic states: it raised more than \$4 billion for the region in the 2009–2017 period. Extending this program to the transportation sector in New York would raise revenue to invest in the clean transportation system we need for a more livable, equitable, and climate-friendly state.

Burning fossil fuels from cars, trucks, and buses is responsible for the largest share of emissions from New York State. This share of emissions from transportation has been going up for at least three decades (see the figure, p.2). So without clean transportation, it will be very difficult for New York to reduce emissions to meet the state's economy-wide climate target, which requires going back to 40 percent of the 1990 emissions level by 2030. To reach that target, the state needs to cut transportation emissions by almost half in the next 12 years.

Pollution from transportation is a leading environmental threat to our health. As in many large cities, New York City has high concentrations of particulate matter emissions in the air, dangerous pollutants that originate in the combustion of gasoline and diesel. The state's health department has estimated these pollutants cause at least 3,000 deaths in the city every year from heart and lung disease, not to mention 2,000 hospital admissions for heart and lung problems and 6,000 emergency room visits for asthma (NYC Health n.d.).

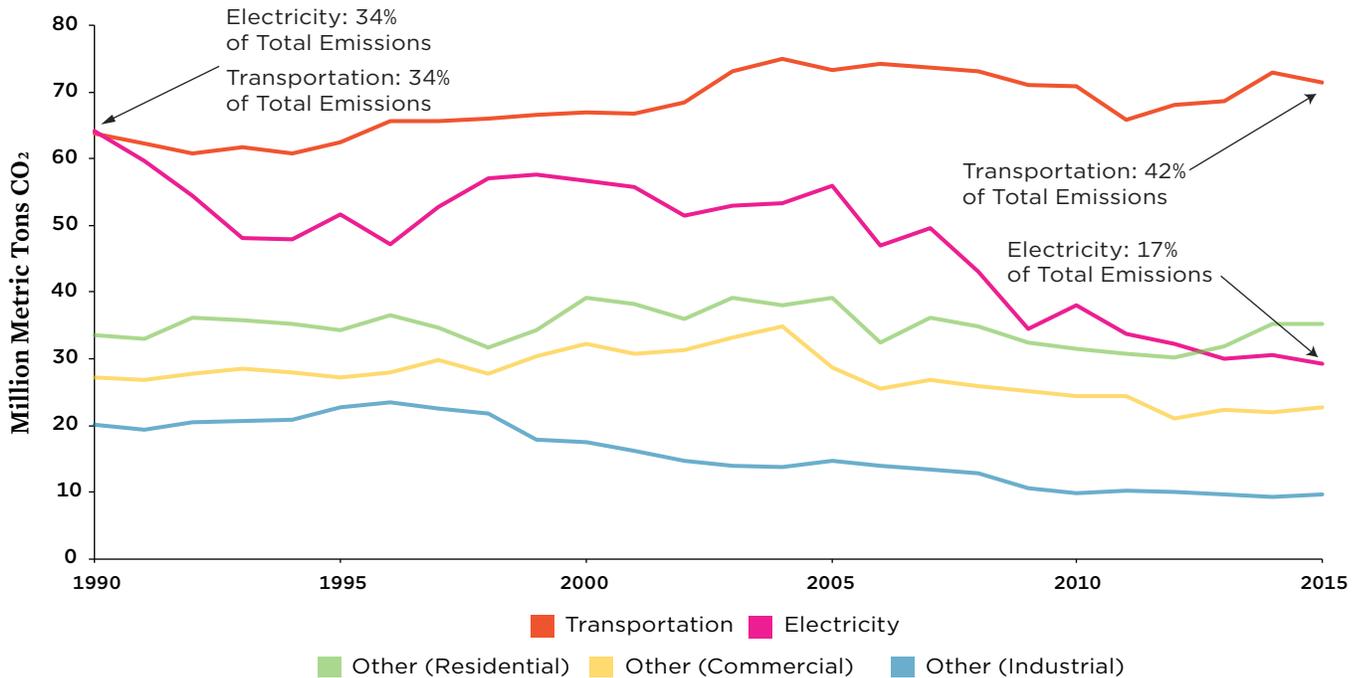
Low-income households suffer disproportionately from transportation-related pollution and also spend a larger proportion of their income on transportation than higher-income households. In the largest metropolitan areas in the United States, families with incomes in the \$20,000 to \$50,000 range spend an average of 30 percent of their income on transportation and 28 percent on housing (Lipman 2006). The vast majority of low-to moderate-income workers in the United States—almost 90 percent—drive to work in private vehicles and typically spend more on fuel over the lifetime of their vehicle than on its price at purchase (NYC Health n.d.), so any money saved on fuel costs has a disproportionate savings benefit to their budgets.

The transition to clean transportation is an opportunity to modernize our poor road and public transit infrastructure and make it more resilient. One-third



New York City and other large cities have poor air quality due to the high number of cars, trucks, and buses powered by gasoline and diesel. Clean transportation solutions are available today to help move people and goods around in a cleaner, more reliable way.

Carbon Dioxide Emissions from Fossil Fuel Combustion in New York State, by Sector



In the last 25 years, carbon dioxide emissions from burning gasoline and diesel in New York’s transportation sector have gone up. In the meantime, the electricity sector significantly reduced its carbon dioxide emissions from burning fuel by phasing out coal and petroleum products in favor of natural gas.

SOURCE: EIA 2018.

of the state’s major highways are in poor or fair condition, half of its bridges are at least 75 years old, and its transit systems are stretched way beyond capacity.¹ New York City is the third most congested city in the world (Los Angeles is first and Moscow is second) with residents spending 91 hours every year in traffic (INRIX 2017).

Transportation infrastructure has a very large role to play in cities’ capacity to respond to extreme events. In its 2015 report, the New York City Panel on Climate Change found that average sea levels in the city have risen 1.2 inches per decade, about *twice* the global rate per decade (NPCC 2015). New York City is one of the most vulnerable cities in the United States in terms of value of exposed assets. In a study that assessed the average annual economic losses in 136 coastal port cities, ranking them according to potential flooding risk and existing protection, New York City ranked as the third worst, after Guangzhou, China, and Miami (Hallegatte et al. 2013).

Electrification is the most cost-effective way to clean and modernize our vehicles. With electrification, more of the dollars spent on energy resources will remain in the state, rather than being spent on oil imports. Indeed, in 2015, the state

imported \$9.6 billion worth of gasoline and \$6.7 billion worth of other petroleum products (NYSERDA 2017). While much of the state’s electricity is still produced from fossil fuels, the cost per mile is much lower for electric vehicles (EVs), and New York’s commitment to increasing renewable power (NYSERDA n.d.) means the share of fossil fuels used in the state will fall over time.

Electrification also helps drivers insulate themselves from the fluctuating price of gasoline. In the last decade, the price of gasoline in the state fluctuated from less than \$2 per gallon to more than \$4 per gallon (gasbuddy.com n.d.). This volatility is particularly burdensome for low- and middle-income families. The average price of electricity as vehicle fuel, on the other hand, has remained relatively constant for the last 15 years, around \$1.30 per gallon based on a standard rate and as low as \$0.30 for a time-of-use rate, such as in nighttime charging (Reichmuth 2017, Figure 1). This is because the average residential electricity rate in the United States has not changed much, with the exception of small and predictable seasonal variations.

From reducing emissions to meet climate targets, to cleaning the air our children breathe, to channeling money

from oil imports into job creation in the clean energy industry, to shielding the most disadvantaged residents from the unpredictability of gasoline prices, all the way through lessons learned with Hurricane Sandy, there are more than enough reasons why New York needs a clean and modern transportation system.

How Do We Get to a Clean and Modern Transportation System?

Cap-and-invest is a proven model for reducing emissions and generating revenue for states. It works by placing a limit on emissions from polluters such as power plants and oil companies, and requiring them to purchase allowances—or rights to emit carbon dioxide (CO₂)—from the state, which then invests the revenue in energy efficiency, clean transportation, and many other benefits for the public. Cap-and-invest gives regulated parties the incentive to switch to less polluting products and processes, often minimizing consumer costs while giving them the flexibility to comply in a manner that best suits their circumstances.

In 2009, New York and nine other Northeastern and Mid-Atlantic states² collaborated to implement a power sector cap-and-invest program known as the Regional Greenhouse Gas Initiative (RGGI). Here are some of the many benefits cap-and-invest has brought to the power sector of the nine-state region:

- **It generated much-needed revenue.** Over the 2009–2017 period, RGGI generated more than \$4 billion in economic value to support the region’s investments in clean energy, energy efficiency, and various public benefit

Cap-and-invest has been successful in the power sector of nine Northeastern and Mid-Atlantic states, as well as in California.

programs and helped create more than 40,000 job-hours. It funded important energy policies in New York, including the Cleaner, Greener Communities Program that provides grants to local government for sustainable development programs.

- **It saved consumers money.** Just in the 2015–2017 period, it gave power consumers a net gain of almost \$100 million as electricity bills fell over time (Hibbard et al. 2018).
- **It helped reduce power sector emissions and made the air we breathe cleaner.** The program helped New York’s power sector CO₂ emissions drop by more than 5 million tons in the 2009–2015 period (EIA 2018). In the nine states, the program reduced “criteria” air pollutants such as fine particulate matter, sulfur dioxide, and ground-level ozone, which avoided up to 830 premature deaths, averted up to 9,900 asthma attacks, and saved an average of \$5.7 billion in health costs in the region between 2009 and 2014 (Abt Associates 2017).
- **It made our neighbors’ air cleaner, too.** States that are neighbors to the nine RGGI states, such as Pennsylvania, Virginia, and West Virginia, as well as the District of



Revenue from a transportation-based cap-and-invest system could allow New York to purchase more electric buses, install EV charging stations, add sidewalks and bike lanes, and other clean transportation infrastructure.

New York could raise more than \$1 billion each year for clean transportation projects if it expanded its cap-and-invest program to include transportation.

Columbia, have seen a decrease in mortality, respiratory and heart diseases, and loss of work days because of RGGI. In Pennsylvania, for instance, the valuation of avoided health effect due to RGGI amounted to anywhere from \$800 million to \$1.8 billion (Abt Associates 2017).

Other jurisdictions, including California and Quebec, have expanded cap-and-invest to transportation, resulting in billions in new funding for clean transportation. This year California will spend \$695 million on clean vehicle incentives, \$1.2 billion on public transportation and more than \$700 million on affordable housing and sustainable communities programs thanks to its cap-and-invest program (Gatti 2017).

Cap-and-invest could also be a success story for New York's transportation. Adopting this policy for transportation in New York could raise more than \$1.2 billion every year for clean transportation in the state (Gatti 2017).

How Can New York Use the Revenue from a Transportation Cap-and-Invest Program?

- **Invest in electrification and charging infrastructure.** We need electric passenger vehicles to help us reach our climate target. EVs are 3 to 4 times as energy efficient as an equivalent gas-powered car and produce about a third of the emissions of conventional vehicles. Incentives and subsidies can help make EVs more affordable for all. We can upgrade to cleaner bus fleets as well.
- **Invest in car-free alternatives.** Communities across the state need access to alternatives to driving, including walking, biking, and high-quality public transportation. Low-income communities, rural residents, the elderly, and disabled residents have limited access to affordable and clean mobility choices.
- **Repair our deteriorating transit systems.** Hurricane Sandy relief efforts reinforced the importance of having multiple modes of transportation such as subways, buses,

ferries and commuter rail. With devastating storms and severe climate impacts on the rise, this is an opportunity to harden our critical infrastructure and protect natural systems.

- **Build affordable housing near transit and promote compact development.** Transit-oriented development helps ensure that people who want to live in communities with multiple transportation choices, or who want to live car-free, can do so. It also helps reduce sprawl, which reduces the time and fuel needed for commuting or running errands.

The experience with cap-and-invest on both coasts of the United States has given us empirical evidence that carbon control can bring positive economic outcomes. The RGGI model has shown that a collaborative multistate framework that preserves state authority can be highly effective. California has shown that this policy works in sectors *beyond* the power sector. But most of all, this policy brings in funds that can be allocated creatively to support states' individual needs and benefit all state residents.

Maria Cecilia Pinto de Moura is a senior engineer in the UCS Clean Vehicles Program.

ENDNOTES

- 1 The American Society of Civil Engineers has given the state's roads, bridges, and transit systems grades of D-, D+ and C-, respectively (ASCE 2017).
- 2 Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont.

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NATIONAL HEADQUARTERS

Two Brattle Square
Cambridge, MA 02138-3780
Phone: (617) 547-5552
Fax: (617) 864-9405

WASHINGTON, DC, OFFICE

1825 K St. NW, Suite 800
Washington, DC 20006-1232
Phone: (202) 223-6133
Fax: (202) 223-6162

WEST COAST OFFICE

500 12th St., Suite 340
Oakland, CA 94607-4087
Phone: (510) 843-1872
Fax: (510) 451-3785

MIDWEST OFFICE

One N. LaSalle St., Suite 1904
Chicago, IL 60602-4064
Phone: (312) 578-1750
Fax: (312) 578-1751