Baruch College

Policy Brief

May 07, 2021

The Future of New York City

By: Shana Persaud, Vika Tambaeva, Lauren Snyder, Lisa Kehr, and Lady Masopeh

Executive Summary:

In 2019, 29% of all Greenhouse Gas (GHG) emissions produced in the United States (US) came from the public and private transport sector, making transportation the single highest producer of GHG emissions across all industries. For New York City (NYC) specifically, the *transportation* sector is the second highest and fastest increasing source of GHG emissions. To help reduce emissions in this vast sector, we propose expanding the providing infrastructure support and expanding programs that promote Electric Vehicles (EVs).

- EVs account for 60% less carbon emissions during use on average compared to cars with internal combustion engines
- EVs can further reduce emissions through their life cycle.
- EVs can help NYC achieve its aims of advancing equality by building the needed infrastructure to insure accessibility for all New York residents.
- Expanding E-vs would help transition NYC to cleaner energy and provide

higher air quality and health equity to those in marginalized communities, and thereby realize social justice.

This policy brief outlines the methods of expanding EV programs to help NYC reach net-zero emissions by 2050. It will examine strategies implemented in other cities such as Los Angeles, London, and Shenzhen, and describe various methods which could be employed to encourage the use of EVs. Overall, we will demonstrate that investing in EVs and its associated infrastructure will enable NYC to reach net-zero faster than without this vital component.

Highlights:

The largest source of climate pollution in the US is transportation. One way to chip away at the climate crisis is to make the vehicles on our roads as clean as possible. “Automation and shared mobility will play a key role in this transformation, changing the ways that people commute in cities” (Scalise and Herger). Not only are emissions bad for our planet, they are also bad for our health. Especially now, as COVID-19 continues to spread around the world, respiratory health is a critical global issue.

“Reducing transportation emissions is one of the most vital steps in fighting the climate emergency, and solutions to the transportation problem are already available. Our nation needs to shift away from fossil fuel-powered vehicle dependence and toward zero emissions in all transport sectors” (Transportation and Climate Change). Electric vehicles have

around an 18% smaller carbon footprint compared to gasoline-powered cars. The electricity that charges and fuels battery-electric and plug-in hybrid vehicles come from power grids, which rely on a range of sources — from fossil fuels to clean renewable energy. Infrastructure, health, and the pledge of NYC to reach net-zero by 2050 are why EVs can play a role in combating climate change and achieving a healthier society. A change in purchasing behavior of our mindset can significantly impact how we live and function as a society.

Key Ideas:

- Increased use of EVs would reduce NY's greenhouse gas emissions and congestion and help it meet its air quality goals.
- "Even without significant changes in the sources of electricity generation — primarily coal, natural gas, and renewables — an EV can still reduce CO2 emissions by 60 percent compared with internal combustion engines. With more than 20 percent of emissions coming from light-duty vehicles in the U.S., EVs could be a major factor in improving air quality and the health of urban residents" (Scalise and Herger).
- New York has supported several initiatives to increase EV charging infrastructure availability, including the ambitious $250 million Evolve NY initiative.
- Infusing the uptick use of electronic vehicles can help reduce greenhouse emissions and contribute to the pledge of NYC reaching net zero by 2050
- With New York City being hit hard by the pandemic, making it a model city for Electric Vehicles will help rebuild its image and infrastructure.

Significance and Value of Electric Vehicles:

NYC is striving for zero emissions, and EVs will play a significant part in achieving this goal. Currently NYC has two million registered vehicles, but only 56,000 are fully electric. EVs are vital because they do not rely on fossil fuel. Additionally, even though electric cars are known to be more expensive to own, electricity is cheaper than gasoline. Hence, in the long run, they are more affordable and easier to maintain. For example, on the KIA's Motor Corporation's website, it states, "No oil to change, no gaskets to replace, no valves to clog up, electric cars do not have internal combustion engines, so these costs disappear" (KIA).

Incentives to Reduce Emissions:

One option to reduce emissions is a traditional regulatory approach: by applying specific standards across polluters. However, using economic incentives or market-based policies that rely on market forces to correct producer and consumer behavior is potentially a better alternative. In particular, financial incentives are one of the best ways to change NYC's emissions production. Appropriately applied,

they can help motivate individuals and businesses to reduce emissions to the best of their abilities.

Incentives influence and motivate people to make better choices. To influence people to purchase EVs, NYC could:

- Create tax rebates for EV manufacturers. As is similarly available for landlords under the Property Assessed Clean Energy (PACE Financing Program
- Provide easily accessible charging stations.
- Buy older used cars with high emission rates, turn them into scrap, and give carbon credit to EVs.
- Mandate and subsidize the local bus system (MTA) to use only EVs. Help the MTA transition and depreciate its current bus fleet to an EV version within a couple of years.
- Implement a tax on new non-EV cars (which can help pay for the subsidies).

A Glance at Other Cities:

Los Angeles is famous for implementing EVs in their city following a California mandate that "by 2035, all new cars and passenger trucks sold in California will be zero-emission vehicles" (Takahanshi). This commitment demonstrates the state's seriousness in achieving a green future.

London is another city striving for more electric vehicles. It is currently trying to add "300 more EV charging points before the end of 2020" (London City Hall). This commitment shows how London is setting short-term goals to achieve a greener future. London has also implemented incentives such as free meter parking for EV drivers.

One more exemplary city is Shenzhen, China. Shenzhen's population is increasing rapidly, and as its population increases, so does the number of vehicles on its roads, and air congestion associated with them. Shenzhen is offering incentives to anyone who owns an EV and has road restrictions for vehicles with internal combustion engines.

The 2050 Vision for New York City:

NYC is known as the capital of the world. To maintain that status, we envision NYC as a leader and example of a carbon-free megapolis. Gradually switching to EVs will be a big step toward reaching that goal.

There are more than 13,500 taxis in operation every day in NYC. An electric-powered yellow cab would be a perfect opportunity to update this classic symbol of the City. #EVyellowcabNYC!

In 2018, the TLC licensed fleet produced 1,697,451 tCO2 (total carbon dioxide). With an increase of electric yellow cabs, a municipal policy can be directed to encourage New-Yorkers-(see below) and visitors to use iconic taxi cabs. This policy would contribute to emission reduction within the city and keep historical yellow cabs popular.

NYC can gradually replace the next fleet with electric vehicles:

1. Municipal transportation
    - Public buses
    - School buses
2. Business transportations
    - Delivery services
    - For-hire vehicles
3. Individual means of transportation.
    - Encourage New Yorkers to use bikes, scooters, and other types of “green” transportation, including electrical cabs, by offering carbon trade programs. (Each New Yorker who uses bikes or another “green” means of transport can sell collected miles to companies under the developed carbon trade program).

      We have an opportunity to rebuild a new avant-garde model of a world-class city. Electric vehicles demand specific infrastructure such as charging stations, and the timing for building this infrastructure is perfect for NYC, and aligns with a national infrastructure project launched by the Biden administration, including the renewal of the electric grid. Building charging stations will create new local jobs, and increased availability of convenient charging stations will invite New Yorkers to switch to Electric Vehicles.

      NYC should seize the current momentum to switch to Electric Vehicles as the Federal Government would welcome this policy. The Biden administration is proposing a $174 billion investment for the EV market in the USA, which also includes investment to transit yellow school buses and USPS fleet into electrical. We believe that the NYC government should not miss this opportunity for the future of our city.

Conclusion:

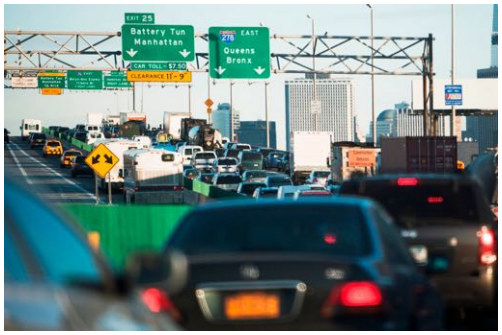
In conclusion, as NYC continues to plan for ways to improve energy mobility and accelerate the use of EVs, this proposal will help New York City, and even the entire nation accomplish its climate change goals.

Electric Vehicles are both significant and valuable in today’s society. EV’s give us the opportunity for a greener environment by reducing air pollution and also by being more efficient then the internal combustion vehicles.

Climate change is a global problem. Greenhouse emissions that we generate are the leading cause of the earth’s rapidly changing climate, and the volume of these gases has skyrocketed in recent decades. Transportation is one of the primary sources of human-generated emissions. If NYC both implements and enforces policies to help mitigate these emissions, it will be one step closer to a worldwide change and set an example for other cities on the path for a greener future.

Imagery:

Images Showing a Polluted NYC:



Images Showing Implementations for a Greener NYC:

1. Adding more Charging Stations

2. Incentives

3. Electric Vehicle Charging Station

4. Informing the Public about the "Future" of EV's

Work Cited:

A

"Are Electric Cars Cheaper to Maintain?" Web. 03 May 2021.

E

"Emissions from the Taxi and For-Hire Vehicle ..." Web. 5 May 2021.

"Energy." *New York City's Net-Zero Carbon Target for 2050 Is Achievable, Study Finds - Sustainability*. Web. 19 Apr. 2021.

F

"FACT SHEET: The American Jobs Plan." *The White House*. The United States Government, 08 Apr. 2021. Web. 19 Apr. 2021.

K

Kempf, Sebastian, Philipp Lühr, Patrick Schaufuss, Anna Strigel, and Andreas Tschiesner. "Leaving the Niche: Seven Steps for a Successful Go-to-market Model for Electric Vehicles." *McKinsey & Company*. McKinsey & Company, 29 June 2020. Web. 19 Apr. 2021.

L

"London Hits Electric Vehicle Charging Points Milestone." *London City Hall*. 21 Jan. 2021. Web. 19 Apr. 2021.

S

Scalise, Joseph, and Joseph Herger. "3 Ways That Cities Can Unlock the Benefits of Electric Vehicles." Web. 19 Apr. 2021.

T

Takahashi, Mark. "California Mandates Electric Cars for 2035 and Here's What That Means." *Edmunds*. 19 Oct. 2020. Web. 19 Apr. 2021.

"Transportation and Climate Change." Center For Biological Diversity. Web. 19 Apr. 2021.

Y

"Yellow Cab." *Yellow Cab - TLC*. Web. 19 Apr. 2021.