Sophia Festini
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Law and Policy

Carbon Pricing and Energy Consumption in NYC Buildings

In response to the growing need for sustainable city practices, New York City is pushing for significant environmental policy shifts, including the implementation of a carbon tax that specifically targets large buildings, with the aim to enhance energy efficiency while curbing carbon emissions within NYC's built environment. This proposed carbon tax on large buildings in NYC will mandate buildings larger than 25,000 square feet to reduce their carbon emissions starting January 2024. Buildings that do not do this will face fines up to $268 per ton of carbon over their limit, which will likely accumulate millions of dollars in fines yearly from the ones with the worst emissions. A review from NYC's Department of Buildings says that 11% of NYC's buildings may not meet the requirements of Local Law 97. This significant policy shift is very important in addressing the environmental impact of NYC's buildings since they contribute to over 70% of NYC's emissions. By enforcing these carbon reduction measures, NYC hopes to make significant changes in energy efficiency and to reduce their carbon footprint.

As background to the implementation of a carbon tax on large buildings in NYC, it's important to look at carbon pricing as a policy approach. Carbon pricing is the implementation of a policy that shifts the costs of carbon emissions from the people of NYC to the direct carbon polluter. This will incentivize these buildings to reduce emissions. This is usually achieved with 2 approaches: carbon taxes and emissions trading systems (also known as cap and trade). Carbon taxes, like this one for the large buildings in NYC, increase the cost of fossil fuels that emit more carbon, pushing businesses to shift to cleaner fuel options. This idea aligns with existing ideas on carbon taxes, which highlight its effectiveness in other regions by creating a cost-minimizing pattern of abatement. The economic agents that have lower abatement costs are incentivized to make larger reductions in emissions, contributing to static efficiency. This market mechanism created by carbon pricing makes sure that the cost of abatement equals the cost of polluting, pushing for cost-effectiveness and equitable distribution of emission reduction efforts. This introduction of a carbon tax in NYC will align with principles of carbon pricing, hoping to drive emission reductions and grow sustainability within the city area.

The scope of this issue revolves around the specific focus on large buildings in NYC, recognizing the substantial contribution from them of greenhouse gas emissions. Buildings contribute to approximately two-thirds of NYC's emissions, Mayor Adams and others are committed to helping the

environmental issues as part of larger plans to become carbon neutral by 2050. NYC's buildings are responsible for over 70% of NYC's greenhouse gas emissions, with mainly power/energy consumption in these buildings being the main source of it. Almost 40% of NYC's overall emissions are from burning fuels for heating. Given these alarming statistics, large buildings emerge as a main target for carbon reduction efforts. The focus on large buildings comes from the fact that a large proportion of the emissions come from energy use. By incentivizing these businesses to lower their carbon footprint, there is a strong potential to reduce not only their own emissions but also help contribute to the overall emissions reduction goals in NYC. This approach aligns with NYC's commitment to helping climate change and highlights the importance of addressing the problem of emissions to achieve environmental sustainability within the city.

Looking at the current energy consumption patterns in NYC's buildings shows issues shaped by many factors. In 2021, total emissions from large buildings demonstrated a 24% decrease since the original assessment in 2010. However, a rise in emissions from 2020 to 2021 was observed, mainly due to the closure of the Indian Point nuclear power plant, which created an increase in the use of gas for electricity generation in the city. Also, the 2021 energy data highlighted the impacts of the pandemic, showing reductions in energy use, especially in offices and hotels. NYC's overall emissions are mainly influenced by energy consumption in buildings; larger buildings contribute 35% of emissions and other buildings contribute 32% to the city's emissions profile. In contrast, transportation contributes to only 28%, and waste contributes a mere 4%. This data proves the critical role of addressing energy usage in the city, focusing on the need to focus on their buildings as a target for efforts in emissions reduction. By directing attention to the biggest contributors (buildings), NYC can make a big change in its hope for a more environmentally conscious city area.

The proposed carbon tax on large buildings, outlined in Local Law 97, introduces a comprehensive strategy to address carbon emissions in New York City. This legislation establishes carbon caps for buildings exceeding 25,000 square feet and is scheduled to take effect in 2024, aiming to propel the city towards net-zero emissions by 2050. The law offers multiple compliance pathways, accommodating diverse structures, including provisions for affordable housing. Notably, buildings failing to adhere to the stipulated carbon caps face significant fines. Local Law 97's graphs illustrate how current energy use in covered buildings aligns with the law's initial emissions limits in 2024 and the subsequent target for 2030, utilizing benchmarking data from 2019 and 2021. Given the ongoing pandemic's influence on building energy use, the 2019 data provides a benchmark consistent with full building occupancy, although pandemic-induced alterations to energy consumption patterns may persist. Uniquely

positioned as the most ambitious building emissions legislation globally, Local Law 97 incorporates recommendations from Urban Green's 80×50 Buildings Partnership, emphasizing its innovative and influential character. Additionally, the legislation places emissions limits on individual buildings, tailored to factors such as size, property type, and compliance year. Complementing this, NYC's Building Energy Grade Law strives to enhance energy efficiency by annually assigning Building Energy Efficiency Ratings based on ENERGY STAR scores. This program informs New Yorkers about differences in building energy use, fostering a culture of awareness and accountability in the pursuit of a more sustainable urban environment.

The anticipated impact of the proposed carbon tax on large buildings in New York City extends beyond emissions reduction to potentially positive effects on energy efficiency and public health. By imposing a carbon tax, there is a foreseeable reduction in CO2 emissions, contributing to cleaner air and, subsequently, improved public health. Furthermore, the tax is poised to elevate motor fuel prices, prompting a decrease in traffic congestion and accidents as individuals adjust their vehicle usage. Notably, a carbon tax serves as a catalyst for research and investment in low-emission alternatives, fostering the development of more cost-effective and efficient solutions for various sectors, including car batteries, electricity, and transportation infrastructure such as subways and aircraft. However, it is crucial to acknowledge concerns and criticisms regarding the effectiveness of this approach. Taxing the carbon content of coal may elevate its price, potentially decreasing its use over time. The broader impact involves increased fuel prices, necessitating significant investments for certain buildings to modify aspects of their infrastructure to emit fewer emissions. Additionally, the regressive nature of a carbon tax on fossil fuels raises concerns about its disproportionate impact on lower-income individuals. Even in cases where the tax is designed to be progressive, there remains a potential welfare loss for poorer individuals as rising prices make their consumption basket more expensive. These considerations highlight the need for a nuanced evaluation of the potential benefits and challenges associated with the implementation of a carbon tax in the pursuit of enhanced energy efficiency and environmental sustainability.

The proposed carbon tax on large buildings in New York City is intricately woven into the broader fabric of carbon emission reduction goals, particularly the overarching objective of achieving net-zero emissions by 2050. Aligned with a multifaceted approach, the carbon tax sets a trajectory that progressively tightens emissions standards over time. This involves a systematic reduction in the allowable carbon emissions from buildings, accompanied by evolving goals to ensure increasing stringency. By imposing these measures, the city aims to propel itself towards the net-zero emissions

target in a gradual and impactful manner. The proposed tax not only reflects a commitment to environmental sustainability but also signifies a strategic alignment with broader environmental targets. These measures are designed not only to meet the city's individual emission reduction goals but also to contribute significantly to global sustainability objectives, particularly those striving for net-zero emissions by 2050. In this way, the proposed carbon tax emerges as a pivotal instrument in the city's comprehensive strategy, not only addressing the immediate concerns of large building emissions but also fostering a trajectory conducive to achieving long-term environmental sustainability goals.

In comparison to NYC, many other cities are actively pursuing carbon tax initiatives for large buildings, showing a trend in environmental policy. San Francisco, for instance, has set a goal of achieving zero greenhouse gas emissions from large buildings by 2035. This city plans to implement fines for non-compliance starting this December. Buildings that fail to meet these requirements will face daily fines of $100 per day (capped at 25 days over 12 months). Their hope to achieve net-zero emissions by 2035, is a target 15 years earlier than New York City's goal. However, even though San Francisco is ahead of NYC in this timeline, NYC stands ahead of many cities in the US and is moving up as one of the most sustainable cities. In comparison, some cities like Peoria, AZ, lack significantly in sustainable practices, with their residents having a high risk for droughts, heat, and flooding. Looking at these comparisons shows that NYC is a global leader in sustainability, but acknowledging that there is more to be done is important to continuously advance environmental work. Though a lot of progress has been made, the city still emits a significant amount of emissions, proving their need for more environmental efforts.

The public view of the proposed carbon tax on large buildings in NYC (Local Law 97), shows a large range of opinions. While some members of the public view it as a necessary step to achieve clean energy goals, others think that it either isn't enough or is too much. These mixed opinions prove the complexity surrounding this environmental policy. With the compliance period for the law set to start in January 2024, a clearer assessment of the effectiveness/ public opinion will emerge eventually. Stakeholders, like building owners, environmental groups, and policymakers, contribute further complexity to this issue. The Mayor of NYC is a strong supporter of this law and emphasizes his commitment to a successful implementation of this policy. But, environmental groups, for example, hold differing views on whether the law is enough to actually reduce emissions. The New York Times stated, “New York’s New Anti-Pollution Law Is Here. Even Supporters Don’t Like It. Rules for Local Law 97, which curbs carbon emissions from large buildings, have come under fire as too lax or not lax enough.” Meaning for many this isn't meeting what they hoped whether it was more laid back or stricter laws. The New York Times also stated that a lot of the criticism focused on an option that allows buildings to apply

for “a two-year, extension if they would not be in compliance by the time the law goes into effect on Jan 1.” This can also cause many issues as many major contributors may not be contributing to this for another 2 years, possibly setting the goals back. City Councilman James F. Gennaro believes that the two-year extension will be a good thing and that Local Law 97 is a good compromise between their environmental goals and the potential cost of compliance. These differing views show the complexity of public opinion and the considerations of stakeholders in the opinions surrounding Local Law 97.

The implementation of the carbon tax on large buildings in NYC definitely has its challenges and many potential drawbacks. One main concern is the readiness of businesses to comply with the new regulations by the set deadline of January 2024. Recognizing this big change, the city has introduced a two-year fee-free extension to provide certain businesses with more time to prepare so that they can actively contribute to emissions reduction. However, there remain issues about the overall effectiveness of the policy, with worries around the timeframe for achieving these significant reductions. Comparing this to other cities, like San Francisco, they aim for net-zero emissions from buildings by 2035. The goal of achieving net-zero emissions in NYC by 2050 may leave some people disappointed, especially if issues come up and the city has trouble meeting this target within the specified timeframe. Also, concerns about the pace of progress are on many people's minds, some people are advocating for a stronger/more immediate implementation. On top of this, another main consideration is the possible negative effects on lower-income individuals. An increased cost of living and energy, that may arise due to the carbon tax, may negatively impact those who are struggling financially. These many challenges and drawbacks focus on a need for careful consideration and planning in the implementation of the carbon tax to make sure there are equitable and effective outcomes.

In conclusion, A carbon tax (Local Law 97) is overall a good step forward in environmental policy. Considering the impacts and the goals to reach net-zero emissions and the specificities of these goals planned out to achieve that goal, this seems to be an overall successful and publicly accepted plan, this policy meets in the middle of those who aren't ready for significant environmental policies but also is a good start for those who are pushing for more policies like this. Creating this policy for buildings will create major changes considering that buildings are the largest contributors plus, giving time to those who need it and starting off slow and eventually making these terms stricter is also a good start to make everyone happy. This policy is proof NYC is a leading city in the process of creating a more sustainable planet, by creating a policy that’s favorable to the many different stakeholders.

Citations:

Bloomberg Law
Title: "NYC Buildings Complying With Emissions Law Faster Than Expected", Source: Bloomberg Law, URL: https://news.bloomberglaw.com/environment-and-energy/nyc-buildings-complying-with-emissions-law-faster-than-expected, Accessed: November 1, 2023

Rocky Mountain Institute
Title: "New York Emits More Building Air Pollution Than Any Other State", Source: Rocky Mountain Institute, URL: https://rmi.org/new-york-emits-more-building-air-pollution-than-any-other-state/#:~:text=In%20New%20York%20City%2C%20burning%20fuels%20for,the%20city's%20total%20greenhouse%20gas%20(GHG)%20emissions, Accessed: November 1, 2023

Center for American Progress
Title: "Carbon Pricing in a Fiscal Context", Source: Center for American Progress, URL: https://www.americanprogress.org/article/carbon-pricing-in-a-fiscal-context/#:~:text=To%20price%20carbon%20means%20to,known%20as%20cap%20and%20trade, Accessed: November 1, 2023

PubMed Central
Title: "The Environmental Efficiency of Well-being: A Cross-national Analysis", Source: PubMed Central, URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7050298/#:~:text=A%20carbon%20tax%20increases%20the,or%20use%20energy%20more%20efficiently, Accessed: November 1, 2023

International Monetary Fund
Title: "Carbon Taxation, Prices, and the Green Paradox", Source: International Monetary Fund, URL: https://www.imf.org/external/pubs/ft/wp/wp9873.pdf, Accessed: November 1, 2023

Urban Green Council
Title: "Exploring NYC Building Data", Source: Urban Green Council, URL: https://www.urbangreencouncil.org/what-we-do/exploring-nyc-building-data/, Accessed: November 1, 2023

NYC Sustainable Buildings
Title: "Local Law 97", Source: NYC Sustainable Buildings, URL: https://www.nyc.gov/site/sustainablebuildings/ll97/local-law-97.page#:~:text=Under%20this%20groundbreaking%20law%2C%20most,coming%20into%20effect%20in%202030, Accessed: November 1, 2023

Climate Check
Title: "Peoria, Arizona", Source: Climate Check, URL: https://climatecheck.com/arizona/peoria, Accessed: November 1, 2023

NYC Sustainability
Title: "Urban Sustainability", Source: NYC Sustainability, URL: https://www.nyc.gov/site/sustainability/initiatives/urban-sustainability.page#:~:text=New%20York%20City%20has%20firmly,big%20city%20in%20the%20world, Accessed: November 1, 2023

City Limits
Title: "Opinion: Mayor Adams, Don't Weaken Local Law 97", Source: City Limits, URL: https://citylimits.org/2023/09/25/opinion-mayor-adams-dont-weaken-local-law-97/#:~:text=We%20were%20part%20of%20the,to%20solve%20the%20climate%20crisis, Accessed: November 1, 2023

The New York Times
Title: "Even Supporters Don't Like Law 97. Either It's Too Lax or Not Lax Enough.", Source: The New York Times, URL: https://www.nytimes.com/2023/09/15/nyregion/law-97-building-pollution-nyc.html#:~:text=Even%20Supporters%20Don't%20Like,lax%20or%20not%20lax%20enough.&text=This%20week%2C%20Mayor%20Eric%20Adams,fuel%20emissions%20from%20large%20buildings, Accessed: November 1, 2023