Are New York Yellow Vest Protests Inevitable?

The French "Yellow Vest" movement https://www.aljazeera.com/news/2018/12/happening-france-yellow-vest-movement-explained-181204153014250.html was triggered by high fuel prices. The following evidence suggests that a similar protest could occur in New York as the 2030 requirement to reduce greenhouse gas (GHG) emissions to 60 percent of 1990 emissions levels in 2030 included in the New York Climate Leadership and Community Protection Act is implemented. More at Pragmatic Environmentalist of NY blog https://wp.me/P8hgeb-ev.

The following table lists historical GHG emissions in New York.

New York State GHG Emissions 1990–2016 (MMtCO2e)

Category	1990	1995	2000	2005	2010	2015	2016	2030
Electricity Generation	63.02	51.28	55.68	53.58	37.31	29.13	27.72	
Residential	34.25	34.98	40.28	39.83	31.7	35.64	30.89	
Commercial	26.55	27.04	32.23	28.66	24.19	21.87	20.66	
Industrial	20.02	22.54	17.52	14.89	10.27	10.8	10.23	
Transportation	59.37	61.82	71.66	79.26	74.93	74.15	73.98	
Other	31.23	32.75	35.06	38.31	37.16	38.65	38.34	
Total	236.19	234.92	258.48	261.88	224.77	213.59	205.61	141.71

https://www.nyserda.ny.gov/About/Publications/EA-Reports-and-Studies/Greenhouse-Gas-Inventory

To meet the 2030 emission target in ten years all these sectors will have to reduce their emissions 30% lower than the emissions in 2016. Because this Workshop on Regional Approaches to Climate and Transportation addresses one sector let's only consider the transportation sector.

New York State Dept of Motor Vehicles Registrations in 2016

Excludes motorcycles, mopeds, ambulance, rental, and farm registrations

Region	Standard	Commercial	Bus	Taxi	Totals
NYS excluding NYC	7,523,171	672,377	17,173	22,136	8,234,857
NYC	1,913,663	74,379	8,487	85,197	2,081,726
Out of State	43,495	31,346	209	3,023	78,073
Total	9,480,329	778,102	25,869	110,356	10,394,656

https://dmv.ny.gov/about-dmv/archives-statistical-summaries

In order to meet a 30% reduction goal from this sector the plan could call for 30% electric vehicle conversions of each of these registration categories. For the standard category that means that we would need 2,844,099 electric vehicles on the road by 2030. According to the NYS Energy Research & Development Authority (NYSERDA) (https://www.nyserda.ny.gov/All-Programs/Programs/ChargeNY/Support-Electric/Map-of-EV-Registrations) there are 58,278 electric vehicle registrations in the state as of June 2019 and 35,296 were registered since January 2017. As a result, we need to have 2,808,803 more electric vehicles to meet the 30% reduction goal and sales would have to average 244,244 electric vehicles per year. That is over four times per year the total number of electric vehicles in the state in June 2019.

The transportation cap-and-invest program proposed would "cap emissions of carbon dioxide from the combustion of the fossil component of finished motor gasoline and on-road diesel fuel in the region". Owners of fuel at terminals would buy permits to sell the equivalent amount of fuel corresponding to the emissions cap and then New York will invest the money received in programs to reduce fuel use. One investment could be to fund the current $2,000 NYSERDA incentive for the purchase of electric vehicles. In the previous example that is

$488 million per year and would roughly add 9 cents per gallon. However, the $2,000 per car incentive is not working well enough to get many people to purchase them. If the incentive is kicked up to $10,000 per vehicle then the cap cost would go up to 43 cents per gallon. The cost per electric vehicle is just the start of the costs necessary to implement over two million electric vehicles. What is the plan for charging infrastructure particularly in cities where residents have to park in lots or on the street and how much will that cost?

A recent poll asked the public how much they were willing to pay to combat climate change http://www.apnorc.org/projects/Pages/Is-the-Public-Willing-to-Pay-to-Help-Fix-Climate-Change-.aspx. The poll found that "To combat climate change, 57 percent of Americans are willing to pay a $1 monthly fee and 23 percent are willing to pay a monthly fee of $40." Dividing the NYS annual gasoline sales of 5.73 million gallons in 2016 www.nyserda.ny.gov/-/media/files/publications/patternandtrends/appendix-c-1.xlsx by the 9,480,329 standard registrations averages 50 gallons per month so the nine cents per gallon equates to $4.29 per month but would rise to $21 a month for 43 cents per gallon to fund a $10,000 per vehicle incentive.

Advocates for the cap-and-invest program point to the Regional Greenhouse Gas Initiative (RGGI) as model of a program that works. I believe that RGGI has significant differences that make the approach unlikely to work well if at all. In RGGI, affected sources did not have viable options to install control equipment but could switch to a lower emitting fuel. I have calculated that fuel switching was the cause of most of the reductions and that reductions linked directly to investments from the auction dividends provided only 5% of the total reductions. The TCI proposed cap and dividend approach proposes to regulate state fuel suppliers. These affected sources do not have the option to put on controls or to switch fuels so they cannot use the control approaches that reduced emissions in RGGI If the cap is set to reduce emissions then there are no direct options for the regulated entities to meet the requirement other than to sell less fuel. As a result, the TCI price signal has to be high enough to force fuel users to reduce fuel use and TCI dividend investments have to give citizens viable options that use less fuel.

There is another problem. The RGGI dividend investment results did not reduce emissions enough to meet the cap. If the TCI investments don't reduce emissions sufficiently to meet the cap necessary to meet New York's CLCPA targets, then the inevitable outcome is that there will be more demand for fuel than the cap allows and the amount of fuel available will be limited. It is inconceivable to me that government-caused fuel outages would be acceptable to the citizens of New York.

Ultimately a cap-and-dividend program equates to a tax. Just as taxes are invested by government for services this approach takes in money that supposedly will be invested to promote cleaner transportation, improve public health, create economic opportunities, and enhance mobility. Before anyone can reasonably be expected to decide to support this program the State needs to provide their plan for specific programs and resulting costs. What is the expected increase to fuel prices for this new tax and how will it be structured so that the those least able to afford a price increase not be adversely affected in general and particularly the rural poor located beyond the availability of public transit?

Most importantly, this analysis looks only at one sector. The electric generation, residential, commercial, industrial and other sectors all have to make similar reductions. Given that the costs of just this sector fall between the amount 57% and 23% of the public are willing to pay I believe it is clear that there will be pushback similar to the French "yellow vest" movement in New York when the costs of the CLCPA become apparent. Roger Pielke Jr.'s Iron Law of Climate Policy states that "while people are often willing to pay some price for achieving environmental objectives, that willingness has its limits". New York will test that law.