

New York Can Lead World in Fighting Climate Change

By Michael B. Gerrard





New York State now has one of the strongest climate change laws in the world, and if we succeed in implementing it, the state will have demonstrated that it is possible to defeat what may be the greatest threat facing humanity.

On July 19, 2019, Governor Andrew Cuomo signed the Climate Leadership and Community Protection Act (CLCPA), which requires total statewide greenhouse gas (GHG) emissions to be 40% below 1990 levels in 2030 and 85% below 1990 levels in 2050. As of 2015, the last year for which data are available, emissions were 8.5% below 1990 levels. There is also an aspirational goal of a 100% reduction by 2050.

The new law is not very specific about how these targets are to be met. The job of coming up with the plan is left to a new body established by the CLCPA, the Climate Action Council. Of its 22 members, 12 are the heads of state agencies, and 10 are appointed by state legislative leaders and the governor. It held its first meeting on March 3. The Council has until January 2022 to devise a draft “scoping plan” and circulate it for public review. The final plan is due in January 2023, and by January 2024 the Department of Environmental Conservation must issue regulations to enforce the plan. The Public Service Commission has less time – until June 2021 – to adopt rules to meet the new requirements for the power sector.

The largest source of GHGs in New York is transportation, which accounts for 33% of emissions. Buildings are second at 26% (16% residential and 10% commercial). Electricity is 13% (or 17% if one counts net imports of power from outside the state). All other categories, including industry, ozone depleting substances, landfills, incineration, and agriculture, are 5% or less.



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TRANSPORTATION

Drastically reducing transportation emissions will require the replacement over time of virtually all gasoline- and diesel-using passenger cars and SUVs with electric vehicles. (It is possible that some will use hydrogen or other zero-emission energy sources.) Heavy-duty vehicles such as trucks and buses will also need to move to cleaner fuel sources; that could be electricity (if battery technology improves considerably), biogas from municipal and agricultural waste, or hydrogen. Current vehicles will live out their useful lives, but increasingly their replacements will need to have zero emissions.

other kinds of assistance will certainly have to be on the table.

ELECTRICITY

Though producing electricity now generates only about 13% of the state's GHG emissions, the amount of power needed will go up – about 40%, by one estimate – as we electrify transport and buildings.

CLCPA mandates that 70% of electric power demand in 2030 be met by renewables, and 100% be from “zero emissions” in 2040. Thus the requirement for 2040, unlike that for 2030, may include nuclear. In 2018, 32%

Lawyers will be needed to handle the real estate, financing, construction contracting, environmental impacts, land use, and other aspects of the untold number of transactions that will be involved.

Fuel and emission standards for motor vehicles are under federal control. New York cannot mandate electric vehicles on its own except for publicly owned fleets. The Trump Administration is moving to relax the existing standards, but if a different president is elected in November, he or she may well strengthen them again. Meanwhile, states and cities will need to establish robust systems of electric vehicle charging stations.

Vehicle miles travelled will also have to go down. This will entail improvements in mass transit; more bicycle lanes; and, in time, land use patterns that are friendlier to transit, biking and walking.

BUILDINGS

Most of the GHGs from buildings are from burning oil and natural gas for heating, hot water, and cooking. Getting this down to near zero will require converting all of this to electricity; the heating part will probably be accomplished largely through heat pumps. More energy efficiency, such as through better insulation, will also be needed. Municipalities will play a central role through their building codes.

Moving aggressively in that direction, in May 2019 the New York City Council adopted a law, called Local Law 97, that set stringent limits on GHG emissions on most buildings larger than 25,000 square feet, of which there are more than 50,000. Buildings that do not meet these limits are subject to stiff penalties. A trading program may be established to allow buildings that can achieve these savings inexpensively to sell credits to those where the cost would be much greater.

Conversions to electricity can be very expensive, and there is great concern over how they will be paid for in low-income and middle-income housing. Subsidies or

of New York's power came from nuclear power plants. However, the two Indian Point units in Westchester County are scheduled to close in 2020 and 2021. The remaining four are all on the shores of Lake Ontario. Their operating licenses have all been extended; all but one of those will expire before 2040. Since there are no proposals to build new nuclear power plants in New York, it appears that nuclear power will make little contribution to New York's electricity supply in 2040, barring very rapid development and acceptance of new nuclear technologies.

Of the remaining sources of power for New York, 39% comes from fossil fuel; 23% from hydro; and 6% from wind and solar. The fossil fuel electricity is overwhelmingly from natural gas. (The two remaining coal-fired power plants in the state are closing in 2020, and oil is no longer used to make electricity except for emergency generators.) Since electric generating plants cannot use offsets, it looks like all the natural gas power plants in the state will need to close by 2040 (except perhaps for a few plants to meet peak loads a few hours or days a year), unless carbon capture and sequestration technology for such plants develops rapidly and is able to achieve zero emissions, something that is beyond current commercial capabilities. The environmental justice community played a major role in shaping CLCPA, and it has long complained that natural gas plants are disproportionately located in or near low-income and minority communities.

To make up for the added load and the loss of fossil fuel capacity, the new law contemplates a massive increase in renewables. It mandates a minimum of 6 gigawatts (GW) of distributed solar capacity (such as on rooftops) by 2025 (there is now 1.5 GW), and 9 GW of offshore wind capacity by 2035. There is currently no offshore



wind power generation, though the state is actively working to build several plants off Long Island. (To put these numbers in perspective, a large nuclear power plant has a capacity of about 1 GW.) There will be more onshore wind power as well, but CLCPA does not specify how much. The law further requires 3 GW of energy storage capacity by 2030 (there is now 0.039 GW). The storage does not itself generate electricity, but it helps provide power when the sun is not shining and the wind is not blowing.

These minimum numbers will not be nearly enough. A study by the McKinsey consulting firm estimated that by 2040, New York will need 17 GW of offshore wind capacity, 11 GW of onshore wind (we now have 2), and 23 GW of utility-scale solar. The state may also buy more power from HydroQuebec using a new transmission line that has been approved but not yet built, but that would only make a dent. A massive program is needed to build the new wind and solar capacity and the associated transmission lines.

This kind of new construction does not always go smoothly. Wind farms and transmission lines, in particular, are often unpopular in local communities. The state's process for siting new electricity generating units under Article 10 of the Public Service Law has not worked; approvals typically take years. Governor Cuomo has proposed legislation that would take this process out of Article 10 and create a new, hopefully much faster process in the Department of Economic Development.

These challenges also create great opportunities. A large workforce will need to be recruited and trained to build and maintain all the new facilities and equipment that will be required. Lawyers will be needed to handle the real estate, financing, construction contracting, environmental impacts, land use, and other aspects of the untold number of transactions that will be involved.

Major efforts will also be needed to cope with sea level rise and other climate impacts that will occur regardless of our best efforts.

The scale of the construction required for all of this is unprecedented since the mobilization that occurred during World War II. If the New York legal community can help make all of this happen, this effort will be a shining example for the rest of the world.



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