2019 Climate Leadership and Community Protection Act - An Example of Putting the Cart Before the Horse

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Background on the Climate Act

In "N.Y.'s Energy for Change," published in the Albany Times Union on November 28, 2021, having just returned from the international climate change conference in Glasgow, Basil Seggos, the New York State Department of Environmental Conservation Commissioner, and Doreen Harris, the New York State Energy Research and Development Authority President and CEO, correctly outline New York's Climate Leadership and Community Protection Law. They assert that New York, as the world's 9th largest economy, is or may be the first to achieve a near zero-carbon society. The actual credit (or blame) goes to the New York State Legislature and Governor Cuomo, who enacted New York's 2019 Climate Leadership and Community Protection Act and established the framework for transforming our day-to-day lives to a low/zero-carbon existence, no matter what the impact on community sustainability (or healthful environment).

The Climate Act establishes 1990 carbon emissions levels as the baseline for each person's carbon footprint. In 1990, New York State had a population of approximately 18,000,000, resulting in 409.78 million metric tons of carbon dioxide equivalent. As an outcome, the average New Yorker had an annual carbon footprint of 22.7 tons per person. By 2030 and 2050, the Climate Act requires the total carbon emissions from the New York State population to be no more than 60% and 15%, respectively, of the 1990 carbon emissions (or 61.47 million metric tons of carbon dioxide equivalent in 2050). If the population of New York remains the same in 2030 and 2050 as it was in 2020 (20,201,249), the average New Yorker's annual carbon footprint would be reduced to 13.6 (by 2030) and 3.0 tons per person per year (by 2050). If there is a 12% increase in the New York population by 2050 (using 2020's population as a base), the average New Yorker's carbon footprint would be reduced to 2.7 tons per person per year.

In order to determine how to ration energy from fossil fuels among different regions and populations, we need to know the sources of carbon. According to the Draft Scoping Plan (defined below), in 2019, in New York State, the sources breakdown as follows:

Transportation (mostly travel over land)	28%
Buildings (mostly heating buildings)	32%
Electricity	13%
Waste (mostly methane from landfills)	12%

Industry	9%
Agricultural and Forestry (mostly livestock)	6%

The Climate Leadership and Community Protection Act delegates to an appointed council of 22 individuals, the responsibility to develop a plan to reduce the average New Yorker's carbon footprint to near zero. The New York State Climate Action Council (the "Council") gets assistance from the Public Service Commission ("PSC"), New York State Department of Environmental Conservation ("DEC"), New York State Energy Research and Development Authority ("NYSERDA"), and private consultants. In December 2021, the Council issued its Draft Scoping Plan on how the state would reduce the average New Yorker's carbon footprint to near zero (i.e., 3 tons/year). A finalized version of the Draft Scoping Plan is expected to be issued by December 31, 2022, with implementation (in terms of laws and regulations) to occur in 2023.

The Draft Scoping Plan mandates over a hundred (if not several hundred) different measures affecting all aspects of our daily lives and community setting. The following four conversions are responsible for the majority of the reductions:

1. Conversion of building heating to electric power
2. Conversion of land travel to electric power
3. Conversion of the electric grid to renewable and zero-emission sources.
4. Transformation of the solid waste management system

Each of these conversions is going to fundamentally change the daily life of a typical New Yorker.

BUILDING

The conversion that may have the largest impact on New Yorker's daily activities is the conversion of building heating and appliances to all electric power. The Draft Scoping Plan mandates the conversion be implemented over the next 13 years (beginning in 2024 for new homes; and in 2030 for existing homes). The Draft Scoping Plan acknowledges the challenge: "New York's residential and commercial building sector encompasses over 6 million buildings, which are home to 7.4 million households." "Nearly half (48%) of household statewide are low- and moderate-income households."

Below are excerpts from Chapter 12 (entitled: Buildings) of the Draft Scoping Plan describing the mandates being recommended:

1. "[M]aking energy-efficient improvements in all buildings, with the emphasis on **improvements to building envelopes** (air sealing, insulation, and replacing poorly performing windows) to reduce **energy demand by 30 to 50%.**"

2. "[B]uildings to adopt **smart controls**, energy storage, and other load flexibility measures."

3. By "2023: adopt **highly efficient state energy code** for new construction (and additions and alterations as applicable) of residential and commercial buildings, to require **highly insulated thermal performance and airtightness**; electric readiness for space conditioning, hot water, cooking, and dryers, **EV readiness** when parking is provided, and **solar where opportunity exists and is feasible.**"

4. By "2024: adopt **all electric state codes that prohibit gas/oil equipment** for space conditioning, hot water, cooking, and appliances in new construction of **single-family and low-rise residential** (and additions and alterations as applicable)."

5. By "2024: the PSC **should prohibit utilities from providing new gas services to existing buildings.**"

6. By "2025: require owners of all single-family and multi-family residential and commercial buildings to obtain and publicly disclose, as part of the sale or lease listing of a building..., the prior year energy consumption of the building... [And by] 2027: require owners of single – family buildings to obtain and disclose an energy performance rating (such as a home energy rating system index) as part of sale listing."

7. By "2027: adopt **all electric state codes that prohibit gas/oil equipment** for space conditioning, hot water, cooking, and appliances for new construction of **multi-family buildings over four stories and commercial buildings** (and additions and alterations as applicable)."

8. By "2030: adopt zero-emission standards that **prohibit gas/oil replacements (at the end of useful life) of heating and cooling and hot**

water equipment for single-family homes and low-rise residential buildings up to 49 housing units."

The Draft Scoping Plan acknowledges that the capital costs of these mandates might not be feasible for many homeowners: "For most existing homes and buildings… the current upfront cost of building electrification upgrades can be significantly higher than costs for replacing fossil fuel equipment. For example, for an older single – family home that is otherwise in good condition, the typical installation cost for a heat pump for the whole–home space heating and cooling, paired with an air sealing/insulation upgrade is about $21,000 for a cold climate ASHP and $40,000 for a GSHP system. Comparatively, it would cost roughly $10,000 or less to replace a fossil fuel boiler/furnace and air conditioner (with no envelope work)".

Additionally, the Draft Scoping Plan acknowledges that the operating costs of these mandates may also not be affordable. It states: "low relative costs of fossil fuel gas compared to electricity is a major barrier to building electrification." It states further that "[o]ver time, the cost of operating high efficiency electric heat pumps will need to become more attractive compared to heating with fossil gas. Chapter 17 … explores options for a … policy that would price carbon emissions …. Such policy actions are expected to increase consumer energy prices for fossil fuels."

In order to get an idea of the cost differential between natural gas and electricity (i.e., the necessary price increase for natural gas to address the differential), compare the price for a therm of natural gas to a therm of electricity on your last utility bill. One therm is equivalent in energy to 29.3 kilowatt hours (KWH) of electricity. On my last utility bill, the usage charge for gas was $1.05 per therm; the usage charge for electricity was $.19 per KWH (or $5.57 per therm). Today, natural gas heaters are 95% to 98% efficient (which means that 95% to 98% of the chemical energy in the gas is turned into heat in your home). An ASHP can have efficiencies significantly greater than 100%; but they lose efficiency in colder temperatures (i.e., below freezing). Assuming a heat pump has an efficiency of 100%, 200% and 300%, using those energy prices, natural gas prices would have to increase by a factor of 500%, 250% or 167% for electricity to be comparable in costs. The Draft Scoping Plan downplays that differential stating: "[A] modest single – family home that switches… from gas heating (but maintains gas service) sees only a modest annual cost decrease (NYC) or cost increase (upstate) with an ASHP...".

TRANSPORTATION

The conversion of land travel to electric power is mostly beyond the state's control. Under the Federal Clean Air Act, only the federal government (Congress and EPA) and California can regulate emissions from cars and trucks. The most that New York State can do is to adopt the California standards if they are more stringent than the federal standards, adopt measures that discourage vehicle miles and place a carbon tax/tariff on gas or other fee to make using a gas vehicle not affordable. The Draft Scoping Plan focuses on measures needed to allow for an electric transportation sector to function and measures to encourage/force the drivers to reduce vehicle miles by using public transportation and to purchase EV vehicles. It provides as follows:

1. Provide direct rebates on zero-emission vehicles supported by **new fees on purchase of fossil fuel vehicles.**

2. Adopt mechanisms to discourage vehicle use and generate funds for public projects, including congestion pricing, variable cost parking, **increased registration fees on carbon intensive vehicles, adoption of a per mile vehicle user fee system,** and increase municipal use of special assessment districts to fund public transportation investments.

3. Adopt California's Advanced Clean Car 2 Regulations, expected to require one hundred percent light-duty zero-emission vehicle sales by 2035;

4. Adopt California Advanced Clean Truck Regulations requiring increase percentage of zero-emissions Micro Hybrid Drives through 2035;

5. Require use of zero-emission vehicle equipment by state contractors;

6. Implement incentives and policies for businesses and localities for development located adjacent to public transportation services;

7. Incorporate public transportation factors into economic development incentive programs;

8. Update the Smart Growth Public Infrastructure Policy Act to avoid investment in infrastructure that would promote "sprawl."

The major impact on a typical New Yorker is that they will have to convert to an electric vehicle sooner than the rest of the country because gas vehicles will no longer be cost effective or sold in New York and because of other measures to make vehicle use less convenient than other forms of transportation.

The Electric Grid Challenge – 2040 Mandate

Another principal challenge posed by the Climate Act is the conversion of all fossil fuel generated electricity (plus the anticipated electricity demand growth of 65% to 80%) to renewables or zero emission by 2040. Significant new hydro in New York State is not possible. Due to lobbying efforts, biomass is no longer considered a renewable energy source in New York and is treated the same as fossil fuel. As a result, all the electricity generated by fossil fuels and the anticipated demand growth will have to be provided by wind (onshore and offshore), solar, hydro from Canada and other renewable sources. The critical question is whether this mandate is feasible, affordable, and sustainable.

The New York Independent System Operator ("NYISO") – which manages New York's energy grid – divides the state into two distinct areas – Upstate Energy (Zones A-E) and Downstate Energy (Zones F-K). The Upstate Energy zones currently use about 1/3 of the total electricity generated each year. According to the NYISO 2021 Report of 2020 usage, the upstate sources of electricity are 90% zero-carbon emission:

	Amount in terawatts hours	Percentage of Load
Hydro:	27.5	43%
Nuclear:	26.6	47%
Fossil Fuel:	5.1	8%
Wind	4.1	<1%
Other Renewables:	.7	<1%

With respect to the Downstate Energy zones, which represent two-thirds of the state electricity consumed, the story is quite different. According to the NYISO 2020 Power Trend Report of 2019 usage and the NYISO 2021 Power Trend Report of 2020 usage, the downstate sources of electricity were 69% fossil fuel in 2019

and 77% fossil fuel in 2020 (and as explained below, are projected to be well over 90% fossil fuel in 2022):

	Amount in terawatts hours		Percentage of Load	
	2019	2020	2019 (%)	2020 (%)
Fossil Fuels:	45.4	51.3	69%	77%
Nuclear:	16.7	11.9	25%	18%
Hydro:	2.6	2.0	4%	3%
Other Renewables:	1.5	1.5	2%	2%

However, the total generation does not tell the whole story. Another key factor is the "effectiveness" of the particular type of energy source. According to the NYISO 2020 Power Trend Report, the effectiveness of each energy source is as follows: wind (29%), solar (14%) , hydro (81%) and nuclear (95%). In other words, a plant with 1 megawatt capacity of solar generates on average .14 megawatt hours of electricity while the same capacity of nuclear power generates .95 megawatt hours of electricity.

Renewable energy options are further limited by several factors. Onshore wind farms must be positioned mostly in the western part of the State, because that is where the wind resource is located. Moreover, wind and large-scale solar facilities require large quantities of inexpensive land area. As a result, the overwhelming majority of these facilities must be sited upstate, creating a disconnect between downstate demand and upstate supply and necessitating an expansion of transmission capacity.

Also, the electric grid effectively has no storage capacity, as electricity must be continuously fed into the grid and immediately taken out. For natural gas and nuclear, it is possible to provide a steady stream of electricity every day of the year, minimizing the need for storage. However, for wind and solar, the generation is limited to when the wind is blowing, and the sun is shining. As a result, it is necessary to add a significant amount of energy storage to the grid to supplement whenever neither of the two aforementioned events are occurring.

2040 Mandate is Not Feasible

A. Depends on a fuel source that does not exist.

In the two years since its enactment, the Climate Council, DEC, PSC and NYSERDA have made enormous efforts and significant progress in the planning. Unfortunately, as explained below, the task is not achievable, and their decisions and dissemination of information have been affected by private preferences (against nuclear energy and biomass combustion and using climate change to support marginally related environmental objectives such as smart growth, wetland protection, open space, food reuse, mandatory recycling, and waste/package reduction).

In Section 2.4, the Draft Scoping Plan acknowledges the need for "new technologies... to replace ... fossil fuel resources." The Draft Scoping Plan states:

> "Through its Climate Change Impact and Resiliency Study, which analyzes the Climate Acts 2040 zero-emission electricity target, NYISO has made it clear that innovation is critical to accelerating the development of **new flexible and dispatchable resources** to replace the existing reliability service capabilities of the fossil fuel resources (see Figure 1)."

Figure 1 (referenced above) is from NYISO's Climate Change Impact and Resiliency Study (September, 2020) and is entitled: 2040 Projected Climate Act Winter Energy per Production by Resource Type. In that figure, NYISO provides its best estimate of the winter energy (electric) production contributions that are consistent with the State's plan for transmission improvements, the 2040 Mandate and the maximum capacity renewable energy use. The production and capacity breaks down as follows:

Source	% Production	Upstate Capacity (MW) Zone A-E	Downstate Capacity (MW) Zone F-K
Land-Based Wind	33%	35,200 (100%)	0
Offshore Wind	20%	0	21,063 (100%)
DE Resource ("DEFR")	10%	3,334 (10%)	28,888 (90%)
Nuclear	9%	3,364.2 (100%)	0
Solar (Grid Connected)	7%	24,514 (62%)	14,748 (37%)
Hydro	7%	4,104	1,509 (27%)
Imports	7%	1,500	1,310
Storage	3%	13,876 (89%)	1,724 (11%)
Solar Behind The Meter	2%	4,520	6,355

Price-Responsive Demand	2%	1,455	2,003

In the table above, DEFR (or DE Resource) refers to the dispatchable emission-free resources. They are defined as "backstop resources to cover any circumstances where the resource sets are insufficient to meet identified demand." The DE Resource generally needs to be "dispatchable and compliant with emission requirements." The NYISO does not make "any assumptions about what technology or fuel source can fill this role 20 years hence." The study states that under "baseline conditions (before layering in climate disruption events), there are periods of low output resources during periods of demand when resources need to be available to meet the bulk of the systems and energy requirement. During such periods the need for the DE Resource climb very high – at times more than 30,000 MW." Second, the "resource needs to be highly flexible – it needs to be able to come on quickly and be able to meet rapid and sustained ramps and demand." The DE Resource is currently a role filled by natural gas, however, in the future under the 2040 Mandate, it must be filled by an emission-free resource (which currently does not exist). In order to meet the reliability requirements applicable to the grid with zero-emission electricity, even after maximizing our onshore and offshore wind capacity and storage capacity, we will need a DE Resource with a nameplate capacity of 30,000 MW. According to the Draft Scoping Plan, the total fossil fuel nameplate capacity in New York as of 2019 was 26,371 MW. In other words, in order to have a reliable grid that meets regulatory standards in 2040, we would need to convert the entire natural gas fleet to some non-CO2 fuel (like green hydrogen) and add about 4,000 MW of nameplate capacity.

B. Requires a renewable energy growth rate that is more than 30 times the existing growth rate.

The NYISO study calculates the pace of development required for the 2040 nameplate capacity identified above for wind and solar as follows:

Required 2020 – 2040 Nameplate Capacity Growth Rate (MW/year) for wind (land-based and offshore): **"2714 MW"**
Required 2020 – 2040 Nameplate Capacity Growth Rate (MW/year) for grid connected solar: **"1960 MW"**

The study compares that future growth rate to the historic nameplate capacity growth rate for the period 2012 through 2020 (i.e., wind **71.4 MW** and solar **3.1 MW**).

C. Requires as much as 3,000,000 acres of land to meet onshore wind capacity.

The National Renewable Energy Laboratory has estimated how much land is needed for a modern windfarm in the United States. The report from August 2009 found that the answer is about 85.2 acres per megawatt of nameplate capacity, plus or minus a standard deviation of 55 acres. This figure includes land that is impacted directly as well as land that is needed to surround the turbines. Using that figure, the 35,200 MW of onshore wind capacity in the Upstate Region (Zone A-E) will require approximately 3,000,000 acres. In comparison, Albany County is about 341,120 acres. Solar is more energy dense and only requires about 5 to 10 acres per megawatt of capacity. The 39,262 MW of grid connected solar capacity will likely require between 200,000 to 300,000 acres.

In other words, it would take 8.7 counties the size of Albany County to meet the onshore wind nameplate capacity of 35,200 MW and more than half to three quarters of Albany County to meet the 39,262 MW of grid connected solar. Note the efficiencies of wind and solar are 29% and 14%, respectively.

The 2020 NYISO Study demonstrates that the 2040 Zero-Emission Grid Mandate is not feasible and would result in an unreliable (and thus unsafe) electric grid. Simple math calculations show that the onshore wind expectation is also unrealistic from a land consumption viewpoint and that the needed nameplate renewable capacity is an order of magnitude beyond what is realistically achievable. Simply put, the 2040 Mandate and 2050 Mandate are fantasies.

The Climate Act Sections 7 and 12, 2030 Mandate, 2040 Mandate and 2050 Mandate, when taken together, are a Recipe for Complete Uncertainty.

The 2030 Mandate and the 2050 Mandate limit the average New Yorker's annual carbon footprint (from 22.7 tons in 1990) to 13.6 and 3.0 tons per person, respectively.

The Mandates (which are a form of rationing), put all New Yorkers (and their communities) in competition for the affordable energy needed for a sustainable community (and/or "healthful environment").

The Climate Act Section 7 requires all state agencies to evaluate and make a rationing determination on whether each and every funding and/or approval

decision will be inconsistent with the 2030 and/or 2050 carbon footprint mandates. If inconsistent (or will interfere with the attainment of the mandates), determine whether it is necessary and, if so, require alternatives or greenhouse gas mitigation measures. If not, deny/terminate.

The Climate Act Section 12 provides any person aggrieved by the agency determination, standing to challenge that determination and to commence an Article 78 proceeding to enforce compliance with the Climate Act including compliance with the mandates and Section 7.

In an Article 78 proceeding, the Court will review the agency's determination and determine whether it was arbitrary and capricious or effected by an error of law. The scope and potential misuse of Sections 7 and 12 creates tremendous uncertainty and a risk to every infrastructure decision. Either a government official (e.g., DOS, DEC, DOT, PSC, Agriculture & Markets, Parks, Corrections) and/or wealthy aggrieved person (or competitor) can use Section 7 (together with Section 12) to kill and/or create uncertainty for any infrastructure or development project or even the renewal of an existing permit.

The Mandates (together with Sections 7 and 12) will exacerbate the upstate/downstate divide; the urban (including their Disadvantaged Sectors) versus rural divide; the wealthy versus the working-class divide; the divide between municipal officials struggling to provide critical services and the environmental organizations. DEC has recently used Section 7 authority to deny the repowering of two natural gas power plants in Orange County. There is pressure on DEC to deny a permit renewal to a crypto currency facility under Section 7 because some feel the fossil fuel energy should not be rationed to that product. DEC is holding up numerous Title V air permits due to its inability to make a consistency determination under Section 7. DEC's difficulty in deciding under Section 7 is understandable because the Legislature completely failed to provide any guidance or clarification of what constitutes consistency (or inconsistency) with the mandates.

Upstate communities struggling to comply with the changes/reductions required under the Climate Act (including hosting and providing real property tax discounts to new renewable facilities or hosting and funding of new transmission lines) may feel aggrieved by a State agency's decision to subsidize or approve 10 new buildings in the vicinity of Penn Station or new high-rise luxury apartment and office buildings in New York City (whose grid is more than 90% fossil fuel). Others may feel aggrieved by the State's decision to ration GHG emissions to a

new Global Foundry Chip Plant or new Plug Power Forklift Plant, or to an indoor cannabis growing facility, the proposed Buffalo Bills Stadium or to three new downstate casinos. Each decision that an agency makes can be used as precedent against or in support of a different project (i.e. renewal of a crypto facility permit is inconsistent but the new chip factory is consistent; the renewal of a mining permit is inconsistent but a new battery plant using cobalt mined in the Congo and refined in China is consistent; an extension of a natural gas pipeline is inconsistent but the construction of new subsurface electric transmission is consistent; closing a nuclear power plant in order to reduce aquatic impacts is consistent; but a new natural gas plant to replace that electricity is inconsistent). In the end, nobody (other than some wealthy donors, some bureaucrats, politically powerful municipalities, and many attorneys) will be better off.

Ultimately, if the 2030, 2040 and 2050 Mandates are not achievable, under Sections 7 and 12, the compliance measures to achieve those mandates (including critical climate/social/economic policy) have the potential to be made by the courts in private litigation. Given this potential, the Climate Act must be amended to delete the 2030, 2040 and 2050 Mandates, Section 7 and 12.

Premature Closure of Indian Point Nuclear Power Plant Is An Example of the Type of Disruptive Political Decision Possible under Climate Act Section 7.

More than a decade ago, the DEC made it its mission to shut down Indian Point Nuclear Power Plant. The DEC's sole weapon was the plant's non-contact cooling water, which each day since the 1970s was drawn from the Hudson River, used for non-contact cooling, and discharged back into the Hudson River. The DEC asserted that under the Clean Water Act, Indian Point was required to install the best available control technology for non-contact cooling and that technology required the construction of two massive cooling towers (the largest in North America) costing billions of dollars. After years and years of litigation, in 2017, Commissioner Seggos decided, and Indian Point agreed, that the best available control technology was the early termination of the plant – the closing of the plant.

In April, 2020, Indian Point was required to shut down Unit 2, and in April, 2021, Indian Point was required to shut down Unit 3. According to the NYISO 2020 Report of 2019 usage, when Indian Point was in full operation, it provided 25% of the downstate electric load, while fossil fuel provided 69%. According to the NYISO 2021 Report of 2020 usage, after Unit 2 was closed in April 2020, Indian Point provided 18% of the downstate electric load and fossil fuel provided 77%. As of 2022, it is expected that all of the **16.7** million megawatt-hours of

nuclear power are being replaced by natural gas, increasing the downstate fossil fuel dependency to potentially as high as 95%.

More than a year after the enactment of the Climate Act, in an April 29, 2021, press release celebrating the closure of the Indian Point plant, the PSC Chairman and DEC Commissioner praised the decision and took credit for the closure.

Chair of the Public Service Commission, **John B. Howard,** said, "The Commission is pleased to have played a role in the successful shutdown of Indian Point. It has been a long effort, but well worth it in terms of the removal of the danger that the plant posed to New York State."

New York State Department of Environmental Conservation Commissioner, **Basil Seggos** said, "For more than a decade, New York State has worked to shut down Indian Point and today millions of New Yorkers living in this facility's shadow can breathe a sigh of relief .... I commend everyone who worked to close Indian Point ..."

In the Supplemental Environmental Impact Statement ("SEIS") and in the DEC's 2017 SEQRA Finding in support of the DEC's decision to shut down Indian Point, there was only one paragraph on the impact to the electric grid, which concluded that "the record demonstrates that Early Retirement will satisfy electric generating capacity needs and other electric system needs in a manner consistent with the State Energy Plan." There was no mention of GHG emissions or consistency with Governor Patterson's 2009 Executive Order No. 24 which set a goal to **reduce** GHG emissions by 80 percent below the levels emitted in 1990 by the year 2050.

In her April 29 press statement marking the closure of Indian Point, NYSERDA CEO **Doreen Harris** implied that the zero-emission electricity lost from Indian Point would be addressed stating that "New York State's electric grid is undergoing a transformative evolution in pursuit of the nation-leading goals of the Climate Leadership and Community Protection Act" including "developing a tremendous renewable energy project pipeline." As a follow-up to that press statement, in November 2021, NYSERDA submitted a petition to the PSC seeking approval and ratepayer funded subsidies for two massive transmission projects to bring non-fossil fuel electricity to NYC. The Petition states that "[t]he selected projects are expected to deliver **18** million megawatt-hours of renewable energy per year to Zone J (i.e., New York City), more than a third of New York City's annual electric consumption, from a diverse generation portfolio including onshore

wind, solar and hydroelectric power from Upstate New York and Québec. ...Total investment into both projects is expected to amount to **nearly $24 billion**."

In other words, four years after the decision to prematurely close Indian Point, NYSERDA quantified, in terms of public health, ratepayer dollars and GHG emissions, the impact of losing **16.7** million megawatt-hours of zero-emission energy to NYC. Under NYSERDA's Petition, ratepayers throughout New York State (both upstate and downstate) are being asked to fund two transmission projects "expected to amount to nearly $24 billion" bringing **18** million megawatt-hours of zero-emission energy to NYC. The Petition identifies the public health, ratepayer dollars and GHG emissions benefit of replacing 18 million megawatt-hours of fossil fuel energy with 18 million megawatt-hours of zero-emission energy as follows:

- Avoided **electricity system expenditures**, estimated at around **$19 billion**,
- the value of **reduced greenhouse gas emissions**, estimated at up to **$8 billion**,
- **regional public health benefits resulting from reduced exposure to harmful pollutants from fossil fuel resources** estimated at up to **$4 billion**.

If the public health, ratepayer dollars and GHG emissions benefits are adjusted from **18** million zero-emission megawatts to **16.7** million zero-emission megawatts, the **costs** from closing Indian Point are estimated as follows:

- **New electricity system expenditures**, estimated at around **$17.6 billion**,
- the damage from **increased greenhouse gas emissions**, estimated at up to **$7.4 billion**,
- **regional public health impacts resulting from increased exposure to harmful pollutants from fossil fuel resources** estimated at up to **$3.7 billion**.

The DEC's decision to close Indian Point notwithstanding Governor Patterson's Executive Order No. 24, and the failure of DEC, PSC and NYSERDA in April 2021 to acknowledge or explain the inconsistency shows the potential for Section 7 to be used by the Executive Branch to pick and choose winners or losers based upon politics – not science, or the public good.

Rural Upstate Counties' Perspective

A. The Climate Act Mandates are a political decision – not one based on science.

The Legislature's decision to mandate that the average New Yorker's annual carbon footprint be reduced from 22.7 tons to 3 tons no matter what the cost is a political decision – not one based upon science or feasibility. The long-term impact of an increasing CO2 concentration in the atmosphere on the average temperature of the earth is predictable within a certain range (estimated 20%). Given the realities of a world with 7.8 billion people (25% of which have little or no electricity), the increase in the average world-wide temperature due to greenhouse gases can only be delayed – not prevented.

On page 6 and 11 of the Draft Scoping Plan, under the heading "Global Climate Projections", the Council acknowledges the Legislature's political goal that "the Climate Act established New York as a leader in the critical effort to maintain a livable planet" and New York (and other sub-national entities) are "the durable backbone upon which global action can be built." On page 21 of the Draft Scoping Plan, the Council states: "The Climate Act solidifies New York's status as a climate leader. It establishes the country's – **and perhaps even the planet's** – strongest GHG emission reduction and clean energy requirements." In other words, the purpose of the Climate Act was to establish New York State and its elected officials as global leaders in the battle against Climate Change by requiring "perhaps even the planet's" largest per person carbon footprint reduction (22.7 tons to 3.0 tons) by 2050.

B. Climate change is here - the impacts of a rising temperature to New York State are known and, for the most part, will continue to the end of this century.

The Draft Scoping Plan states the IPCC's latest AR6 predictions including the following:

- The global mean surface temperature will continue to increase until at least the mid-century under all GHG emission scenarios considered by the IPCC.
- Between 1.5°C and 2°C warming will be exceeded this century unless deep reductions in carbon dioxide (CO2) and other GHG emissions occur in the coming decades.
- Changes in precipitation show:

- Strengthened evidence since AR5 that the global water cycle will continue to intensify, leading to more variability in precipitation and surface water flows over most land regions (both seasonally and year over year);
- The portion of global land experiencing detectable increases or decreases in seasonal mean precipitation is projected to increase;
- There will continue to be earlier onset of spring snowmelt; and
- It is likely that heavy precipitation events will intensify and become more frequent in most regions with additional global warming.

- Over the longer term, there is high confidence that the sea level will continue to rise for centuries to millennia, due to ongoing deep ocean warming and ice sheet melt and will remain elevated for thousands of years. It is virtually certain that the global mean sea level will continue to rise over the 21st century. Even under the very low GHG emissions scenario, it is likely that the global mean sea-level rise by 2100 will be 0.28 to 0.55 meters (0.9 to 1.8 feet).

The critical lessons from the State's efforts to investigate climate change are (i) that we are already there – fossil fuels have already had a significant impact on temperature but the impact of CO2 on the rate of temperature rise will decrease and fade over time (adding black paint to a black window); (ii) the impacts of a rising temperature to NYS are known and, for the most part, will continue to the end of this century; (iii) New York adopting the planet's strongest GHG emission reduction (no matter what it costs) will not have a measurable impact on the temperature or its rate of change; (iv) NYS can and should adapt to the anticipated changes to the climate (rising sea level and more variability in precipitation); (v) globally, we need to find an alternative to fossil fuels (to supplement existing renewables) that will be abundant, affordable and that will allow the developing world population to have affordable and sustainable electricity; and (vi) the wealthy economies should reduce their use of fossil fuel to the extent affordable, achievable and sustainable in order to allow the poorer economies access to fossil fuels to develop and thrive.

C. Two Economies and Determining Affordable, Achievable and Sustainable.

The Legislature's objective is admirable – wealthy economies should do whatever is affordable, achievable, and sustainable to reduce their CO2 emissions to minimize the overall change in temperature (act locally – but think globally). But the Legislature (and the Climate Council) skipped a step – they never determined what is affordable, achievable, and sustainable. Moreover, New York State has two

economies – a very wealthy (maybe the wealthiest on the planet), downstate economy and a middle-class, upstate economy (with pockets of wealth). The down state economy (where the rents are in the $1,000s to $10,000s per month) can afford a utility bill in the high hundreds; while in the upstate economy (where the rents are in the 100s to the low 1,000s), a typical homeowner is going to be stressed at a few hundred dollars. The typical NYC resident can take public transportation. In rural areas, each family typically has its own home; has to travel long distances to work, doctors, and to the grocery store; the climate is colder, and the outdoor maintenance is substantial; in rural areas there is no Uber/Lyft or food delivery; cell coverage is sparse and broadband less available. Access to gas and fuel oil is more important to a sustainable existence. In other words, what may be doable (or even sustainable) in the downstate economy is less doable (or less sustainable) in the upstate economy.

D. Basic Human Right to a "Healthful Environment"

Two years after adopting the Climate Act, New York voters approved an amendment to the State's Bill of Rights mandating that all New York State citizens have a basic human right to a "healthful environment." In New York State in 2022, a healthful environment includes access to water, sewer, broadband, cell service, medical service, affordable electricity/energy, and emergency medical care. The State's Bill of Rights prioritizes a person's right to a "healthful environment" over the State Legislature's political objectives to establish the planet's biggest per person carbon footprint reductions. In the context of the Climate Act, a question now arises whether the Climate Act mandating a reduction in the average New Yorker's carbon footprint to near zero violates the constitutional right of many upstate communities and their residents to a "healthful environment." To answer that question, the Legislature (and the Executive Branch) must evaluate whether the 2040 Mandate and the 2050 Mandate are affordable, achievable, and sustainable. If not, then the mandates are unconstitutional.

The Draft Scoping Plan estimates that the net present value of direct costs from the low-carbon plan relative to the current energy system for the period 2020 through 2050 is $500 billion (or about $25,000 per New Yorker). The Draft Scoping Plan estimates that the **annual** net direct costs from the low-carbon plan relative to the current energy system is approximately $20 billion in 2030 and $70 billion by 2050. The Draft Scoping Plan estimates that the cost will be offset by global

benefits from reduced carbon emissions and public health benefits in urban areas due to improving air quality that currently meets Ambient Air Quality Standards for small particulate to even lower levels (no emissions from cars and buildings making clean air cleaner). Also, there are health benefits from improved public transportation (more walking). In other words, while the costs are local – the so-called benefits are mostly global.

E. Disproportional Impact on Upstate Rural Communities

Many, if not most, of the upstate communities consider renewable energy as an opportunity to address climate change, obtain some tax dollars, and have a local electric generation source. Others have a different opinion. No matter their opinion, all municipalities (or almost all) want the state and the developer to respect their home rule and they want the power plant (no matter what the fuel) to pay its full property tax (poor upstate communities should not be subsidizing the electricity serving NYC luxury apartments or Wall Street offices). Below are the minimum changes that need to be made to the Climate Act and the Draft Scoping Plan to ensure a healthful environment.

1. The Legislature should leave the decision in the upstate area whether to change to all electric homes or businesses to the homeowner and business owner.

The upstate rural counties support the Climate Council objective of promoting the transition to electric heating from fossil fuel heating. The upstate rural counties do not support (and vigorously object) to the mandate approach selected by the Climate Council to require all homes to install electric heating regardless of cost and feasibility. In lieu of a mandate, we suggest and encourage that the Climate Council develop a plan to make electric heat pumps the preferred and affordable technology when the homeowners need to replace their existing heating system.

To understand the objection and to develop such a plan, it is useful to consider the environmental setting. This paper will use Delaware County as the example. Delaware County has an area of 1,467 mi.^{2}, larger than the state of Rhode Island, with a population of 44,308 residents (down from 47,878 in 1997) accounting for a 7.5% decrease in population over the past 25 years. Delaware County's median annual household income is $49,544 per year ($19,304 less than the state average of $68,486) with a 13% poverty rate. A typical family owns their home; have to travel long distances to work, doctors, and to the grocery store; the climate is colder, and the outdoor maintenance is substantial; there is no Uber/Lyft or food

delivery; cell coverage is sparse (in particular along major state routes and in the hamlets), and broadband is less available. Access to gas and fuel oil is critical to a sustainable existence although many homes rely on wood because it is more affordable than gas and fuel oil. A law which forces these families to convert to a heating source that may not be either affordable, available, or feasible (or their choice to ensure a safe home) is, most likely, unconstitutional in that it would violate these families' right to a healthful environment.

The alternative approach is for the Climate Council to take an enabling approach – create the reality where the typical homeowner would select an electric heat pump system over a fossil fuel system to heat their home. A typical heat pump will require 220 volts service (which could require a new line from the street). The heat pump is outside, and the fluid has to be pumped to each room individually. Many will not be able to afford the $20,000 installation or the improvements to building envelopes (air sealing, insulation, and replacing poorly performing windows) to reduce energy demand by 30-50%. In many cases, the existing heater will fail during the winter where time is of the essence in restoring heat. There may or may not be available trained contractors. The heat pump's controls (remote) are more complicated than the traditional gas heater and may not be suitable for the technologically challenged. The average low temperature in Delaware County during December, January, February, and March are 16°F , 9°F, 11°F, and 18°F, respectively—which is below the temperature where heat pumps provide reliable and efficient heat. In many cases (in particular, if there is a vulnerable person within the home), a family will need a second source of heat (other than electricity) for the real cold days or when the electricity goes out due to a winter storm. Natural gas or propane heaters are 95% to 98% efficient and can be purchased and installed for about $4,000 and utilize the existing heat distribution system.

To enable electric heat pumps as a preferred heating solution, the Climate Council must find a cost-effective approach to compliance with New York Labor Law Article 30 (applies where work may disturb asbestos-containing materials). See also 12 NYCRR, Rule 56. In relocating families out of the flood plain, Delaware County has found that many of the existing homes have some level of asbestos (floor tile, siding, roofing, insulation, adhesive, pipe insulation). NYS Labor Law requires an asbestos survey prior to any work within a home regardless of the age of the home; if there is asbestos, the homeowner must retain a licensed asbestos designer and licensed asbestos contractor and pay an exorbitant fee to the State for the permit to perform the removal work. The installation of an electric heat pump will require punctures/disturbance to outside siding, floors, wall, insulation, and

piping. Article 30 could add weeks and thousands of dollars of additional cost to the replacement of a heating system with a heat pump.

On January 10, 2022, there was a fire in a multi-family building in the Bronx that resulted in 17 deaths (8 children and 9 adults). The fire was caused when an electric space heater apparently sparked. Two months later, in an effort to reduce the use of electric space heaters, like the one that caused the Bronx fire, the City Council proposed legislation to raise the minimum temperature in all residential units during the heating season. When the heating system fails, a family will do whatever is necessary to stay warm. In the absence of a quick replacement with a fossil fuel heater, the solution will be an electric space heater. Unfortunately, for families that cannot afford an electric heat pump, the electric space heater will be the permanent solution.

The Draft Scoping Plan acknowledges that the "low relative costs of fossil fuel gas compared to electricity is a major barrier to building electrification." The Draft Scoping Plan recommended solution is to make fossil fuel heat more expensive by adding a tax, however, that is not a solution. Note that there are many more deaths due to cold weather than hot weather; the typical cold-related death is often contributed to exposure over time, resulting in lower resistance to flu/viruses and heart issues. Making heat less affordable will only add to the number of deaths due to cold weather.

So, the challenge to the Climate Council is to come up with a program to make an electric heating system affordable, safe and available so that it becomes the preferred technology over replacing it with a propane/natural gas system.

2. The Legislature should leave the decision whether to change to all electric equipment to the homeowner and user.

Similarly, homeowners and users should have the choice whether to use gas fueled equipment and/or electric equipment – each has their own benefits and costs. For example, electric snow blowers may or may not be able to handle heavy snow. For many homeowners, adequate and reliable power is important to safety of use. Homeowners in New York State should have the same rights as homeowners in other states. Gas is mobile and is readily available; it allows a landscaper to move from site to site without stopping to recharge the battery; it allows the work to be performed where it is needed and in different weather. There is a role for both gas and electric power equipment and the decision should be left to the individual that is using the equipment – not to an elected official's political objective.

3. With respect to Transportation, the Legislature (and/or the DEC) should focus on enabling the transition to electric vehicles rather than trying to force the transition.

The transition to electric vehicles is beyond the control of New York State. The proper role for the State is to develop a plan/program so that electric vehicles become the consumer's preferred technology. Whether it becomes the only technology will depend on the market, the manufacturers, and the national government. The challenge for the electric vehicle transition is similar to the challenge for electric heat pumps. In upstate (and in particular) rural areas, a car or truck is a necessity – not a luxury. As a necessity, it must be affordable, available, and feasible to the vehicle owner. Affordability will depend mostly on the market; although it is critical that electricity remain affordable. Availability and feasibility will depend on whether the necessary infrastructure is available and affordable to meet the needs of the vehicle owner. In our cold climate, parents need to know that they will get to their destination, that the car will work in the cold, that there is enough charge to get back home; and that the car can meet the family hauling needs. There needs to be enough electricity in the local grid to manage the additional load; the charging station must be accessible, convenient, and not be inordinately time consuming. The Climate Council should focus on developing a plan/program that makes electric vehicles the preferred choice because they become affordable, available, and feasible.

With respect to vehicle miles driven, at least with respect to rural communities, the Climate Council needs to develop a plan to ensure robust cell coverage and broadband coverage in rural areas. The pandemic demonstrated that the key to reducing vehicle miles driven is to avoid the need to travel to remote meetings.

4. The Legislature should not impose a carbon tax, a mileage surcharge, increased registration fee for gasoline powered cars, or any additional tax on gas, propane, natural gas or home heating oil or a tax on solid waste.

Section 17.3 of the Draft Scoping Plan, with respect to a tax on carbon fuels or GHG emissions, provides that the Council:

> "plans to make recommendations in the final scoping plan after considering input from the public, additional analysis that may be undertaken, and the adequacy of federal and other funding sources."

Section 17.2 of the Draft Scoping Plan, with respect to an economy-wide (or sector-wide) tax on carbon fuels or GHG emissions, provides that the Council:

> "have identified the need to ensure that an economy–wide program [does] not place the disproportionate burden on a particular geographic portion of the state. This would occur, for example, ... if particular areas have less access to technologies to reduce GHG emissions, or if residents of particular areas are more reliant on higher carbon fossil fuels to meet energy needs. Further analysis of the effect of any policy design, and methods to mitigate any adverse impacts, would need to be developed in the specific design of a particular program."

In developing its recommendations, the Council must consider that most rural communities are a "particular geographic portion of the state ... [that] have less access to technologies to reduce GHG emissions ... [and have] residents ... [that] are more reliant on higher carbon fossil fuels to meet energy needs." A carbon tax on the building heating sector and the transportation sector would simply make natural gas, gasoline, fuel oil and propane more expensive and thus make a vital necessity less affordable (transportation and heating) to residents. As stated above, rural counties are already losing population for a variety of reasons (weather, taxes, cost of living, aging). A carbon tax would not result in residents changing any quicker over to electricity unless, as stated above, the electric technology was available, feasible and affordable. While the wealthy can afford an all-electric car and home, and second home and third home, the working class (with their median family income of $49,544) will more likely rely on fossil fuel to heat their home or fuel their car. Our residents are more likely to have to travel day-to-day long distances and heat a home in a cold climate. The utility bills and gas bills are already too high and not sustainable on the median family income. As the use of fossil fuels decreases, the cost of maintaining the fossil fuel infrastructure will be spread over a smaller base increasing the costs to the remaining users. Rural communities are being forced to host the land intensive energy renewable projects and provide those projects a real property assessment that is only a fraction of their construction costs. Rural communities are also being forced to share the capital transmission cost ($24 billion) of bringing the upstate renewal energy to NYC (Zone J), and to replace the zero-emission electricity lost due to the closing of Indian Point. Even though our communities and their residents are significantly poorer than the typical downstate resident, 35% to 40% of the carbon tax funds will be directed to disadvantaged communities, which due to the formula/algorithm, are practically non-existent in rural communities.

The primary behavior impact of the carbon tax on the building heating sector and the transportation sector in rural communities will, most likely be less heat and less vehicle miles (both of which are a necessity). As a result, the only justification for the carbon tax on the building heating sector and the transportation sector in rural communities is to raise revenues. If the Legislature needs to raise funds to implement the Climate Act, it should rely on income tax proceeds – not a tax on necessities for the working class and poor.

The State Comptroller just announced a potential income tax surplus in NYC; the average annual bonus on Wall Street reached a record level of $257,500. Notwithstanding all of the bad news, luxury apartments in the City are at an all-time high and demand is rising. The primary financial beneficiary from the closure of the Indian Point nuclear power plant was the NYC real estate market (it was no longer a threat to their real estate). By imposing the carbon tax on the building heating sector and the transportation sector in rural communities, the Legislature would be imposing an additional punishment arising from the Legislature's efforts to be a world leader in GHG reductions (the Legislature is not only making its citizens starve for energy but is also making them pay for the privilege of starving).

In case there is any question on whether there is public support in rural communities for a permanent increase in energy cost to fund subsidies for electric cars, food composting, re-education on the benefits of recycling, reallocation of resources to the poor sections of the wealthiest communities and smart growth land use initiatives, the Legislature (or the Council) should commission a poll to obtain feedback from the public.

Conclusion

In adopting the Climate Act with its 2030, 2040 and 2050 Mandates, the Legislature made a grave mistake – the Legislature prioritized their goal of being recognized as a world leader in fighting Climate Change over the energy security of the State's residents. Under the recently adopted Green Constitutional Amendment, every New Yorker has a constitutional right to a "healthful environment". Available and affordable energy (i.e., "energy security") is a critical component (comparable to air, water, and food) to a healthful environment. Energy security is a constitutionally protected right. In the Climate Act, the Legislature effectively ordered the cessation of the use of fossil fuels; required all the state agency officials to enforce that mandate in each and every decision; and empowered every aggrieved, well-heeled donor/person the right to go to court to

enforce it. The Climate Act mandates are the law and are enforceable in court regardless of whether the alternative energy sources are affordable, achievable, and available. The Climate Council selected its wish list of lofty directives without determining the cost and funding for those directives. Reducing the use of fossil fuels for building heating, electric generation and land travel will reduce CO2 emissions, and it is an admirable goal. The Legislature can support that goal by enabling the availability, affordability, and the feasibility of the alternative energy sources so that the public/consumer selects those technologies over fossil fuel powered technology. The Legislature and the Climate Council should focus on enabling carbon reductions; not ordering those reductions against the will and at the expense of its citizens' constitutional rights to choose the technology that protects their families.

Major Supporting Documents

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