

Decarbonizing Electricity Generation

Electricity generation currently accounts for about 13% of New York's GHG emissions. However, by 2050, our electricity needs in New York will double, as we electrify our buildings and transportation sectors. Therefore, we not only need to decarbonize our generation capacity, but we also need to add significant amounts of new carbon-free generation capacity.

I wholeheartedly support the plan to zero out emissions from electricity generation by 2040 and the use of regulatory options and market mechanisms to carry out this plan while maintaining reliability and affordability. I am concerned that (1) some proposals to address long-term storage and peak demand involve using **processes that emit GHGs** or are produced with significant embedded carbon. I am also concerned that (2) in the absence of a better **balance between utility-scale and distributed renewable energy generation**, we may not meet our renewable electricity goals in a timely and cost-effective manner. My final and most serious concern is that like Germany and California, (3) we will find ourselves in a position with no viable and timely path to reach our electricity decarbonization goals if we fail to recognize the **role of nuclear energy** in our carbon-free electricity future.

Decarbonizing New York's Electricity Generation

Decarbonizing and expanding electricity generation in NY is critical to decarbonizing the buildings, transportation and industrial sectors. As we transition our homes, businesses, and private and public transportation to electrical power, affordable, reliable and clean electricity is essential for achieving our net-zero goal.

I strongly support NYSERDA's renewable energy procurement targets, and we need targets for siting of renewables. I strongly support building renewable energy capacity and shutting down gas-fired power plants while maintaining reliability and affordability. I believe in easing opposition to siting of renewables through public education and other methods. We must have targets to expand roof top and parking lot solar, and pair solar with electrification of low-income housing and opportunities for low-income participation in community renewable energy. The plan should also consider otherwise unusable areas (e.g., highway rights of way and brownfields) for siting of renewables, grid enhancements, and related infrastructure. It is important that local governments have more control through the use of siting tools. Innovative siting such as agrovolatics should be encouraged.

New York should set a year-by-year target for permitting new wind, solar, and battery storage. State agencies should fully leverage tools like community workforce agreements, community benefit agreements, first-source hiring, and project labor agreements to increase access to construction jobs and permanent jobs for disadvantaged communities; work with the capacity of people and develop agreements in partnership with frontline communities, industry, and organized labor; and further emphasize green worker-owned cooperatives. It is crucial that this point is stressed to continually call attention to the state to address barriers to renewable energy siting. All work to this end requires full staffing of relevant state agencies, including the Office of

Renewable Energy Siting, engagement with Indigenous Nations in NY, and a comprehensive public education and information push on the benefits and opportunities of clean energy

Since New York State is situated near two of the Great Lakes, pumped storage hydropower should be considered in addition to battery storage technology. I support investment in R&D for long-term energy storage, grid technology, and novel zero-emissions electricity sources.

More Emphasis on Distributed Energy Resources Needed

Distributed energy resources (DERs) like parking canopies are not only essential for NY State to meet its emissions targets, but they will play a critical role in keeping consumer energy prices low as the state transitions to carbon-free electricity. Electricity generation at or near the point of consumption helps reduce the supply charges that customers pay, especially during peak summer demand, and it helps reduce the frequency and duration of curtailment events.

Buildings and transportation together account for more than 60% of New York's greenhouse gas emissions. It is widely accepted that electrification is the only viable way of substantially decarbonizing these sectors, which means that in the coming years, urban electricity consumption will increase dramatically. DERs such as solar parking canopies will play an important role in keeping long-term delivery rates low during this transition by reducing the amount of expensive transmission infrastructure that will be required to meet future urban electricity demand. I strongly urge the Council to heed the report [*Decarbonizing New York Through Optimizing Distributed Resources*](#) by Vibrant Clean Energy and recommend **significantly higher DER generation targets** than the current ones in the Final Scoping Plan.

There are other very good reasons for encouraging rapid adoption of urban solar canopies:

- Solar canopies ameliorate urban heat-island effect by shading the paved surface, which is prone to overheating.
- These solar arrays boost comfort and reduce pollution and energy wasted in cooling the cars by shading them in the summer. They also provide protection from rain and snow. Shoppers would prefer a solar carport to an uncovered parking lot, boosting business activity.
- These solar canopies could provide pollution-free electricity to co-located electric vehicle charging stations.
- They would contribute to the local property-tax base.
- Parking lots and large rooftops are ideal locations for solar electricity generation from a land-use perspective; they help reduce the use of farmland or wilderness areas for solar development.
- DERs add geographical diversity to the overall solar generation portfolio, thus reducing the overall variability in the total combined solar output of DER and utility-scale projects.
- A large open parking lot is one of the most unaesthetic urban sights and one of the worst uses of urban land. Solar canopies redeem some of what a city has already lost to this

poor land-use. They help extract more value from this land and ameliorate some of the aesthetic and environmental damage.

- Every driver prefers a covered/shaded spot to an uncovered one.

The Role of Nuclear Energy Must be Recognized

In order to meet its climate goals with sufficient, reliable, and affordable electricity, New York must recognize the current and future role of carbon-free nuclear power. The Draft Scoping Plan anticipates electricity demand to grow 65% to 80% by 2050, depending on the scale and timing of electrification. It also demonstrates that extending the operating licenses of existing nuclear plants from 60 years to 80 years has a net present value benefit to New Yorkers of \$9 BILLION (Appendix G: Integration Analysis). America's nuclear plants are among the best in the world. With good maintenance and replacement of reactor system parts, there is no technical reason they cannot operate for many decades to come.

In addition to helping realize effective and affordable decarbonization, protecting the existing and deploying new nuclear generation capacity would also help realize the Just Transition Working Group's Principles. Communities are built around stable employment and tax revenues from hosting nuclear power plants. Of all U.S. energy industries, nuclear has the highest [level of unionization](#) and [highest pay](#). These multi-generational, well-paying jobs enable vibrant, healthy, and prosperous communities.

Nuclear is also the perfect energy source for communities that have to find new industries due to offshoring; it generates tax revenue and employment. Nuclear has a Made-in-America, Made-in-New York supply chain. New York has a proud history of pioneering nuclear technology, for electricity, medicine, and propulsion. New York belongs at the forefront of nuclear innovation, not on the sidelines.

Finally, nuclear energy has the lowest land use and material use per unit of electricity generated compared to any other energy source. Nuclear power plants produce an order of magnitude more electricity per unit land compared to renewables like solar and wind. Of course, wind and solar energy have a critical decarbonization [role to play](#). However, beyond the logistical limits to the deployment of wind and solar, there are technical challenges that rise [exponentially](#) as their share of generation increases. [Firm sources like nuclear have a critical role](#) in a reliable and cost-effective 100% carbon-free electric grid. Additionally, using more land area for electricity generation than necessary harms the goal of conservation of forest & wildlife land, as well as takes away potential carbon sinks to mitigate GHG emissions already in the atmosphere.

Misinformation and False Solutions

I strongly oppose blending "green hydrogen" and "renewable natural gas" for wintertime use. Such alternatives are entirely unacceptable because they serve mainly as an excuse for fossil

fuel interests to maintain their pipeline infrastructure. This is the reason why despite their gross inadequacies, these are being heavily promoted by the fossil-fuel industry.

Hydrogen combustion emits nitrogen oxides (NO_x), a precursor to ozone, particulate matter, and nitrogen dioxide (NO₂) at levels that may be higher than those from natural gas combustion because of hydrogen's high combustion temperature. RNG combustion also results in pollutant emissions similar to fossil gas combustion. The scoping plan must hold firm to the commitment for zero emissions in the electric sector by 2040, and account for the cumulative impact of pollutants on disadvantaged communities.