

Decarbonizing New York's Buildings



As New York's highest emitting sector, buildings are responsible for around one third of all greenhouse gas emissions statewide. Burning gas, oil, or other fossil fuels for space and water heating accounts for most emissions in buildings. New York's six million buildings also consume fossil fuel energy for cooking, clothes dryers and operating pumps and equipment.

Using fossil fuels for cooking and heating pollutes the air both inside and outside homes and businesses. New York's building stock is also vulnerable to the effects of climate change, such as flooding and extreme temperatures, putting livelihoods and safety at risk.

To reduce harmful emissions and improve public health from our buildings, investments are needed to increase resilience, reduce energy demand, and decarbonize buildings by switching to equipment powered by emissions-free energy sources, such as geothermal heat pumps or rooftop solar.

Redesigning Buildings to Stand Up to Climate Change

Though New York has demonstrated leadership and progress on building decarbonization, accelerated action is required. The Scoping Plan outlines several strategies to advance building electrification and efficiency to achieve the State's emissions reduction goals.

- **Adopt Zero-Emission Codes and Standards:** More efficient, zero-emissions equipment for heating and cooking is increasingly available. That makes replacing existing equipment and appliances with cleaner and healthier alternatives an easy choice for New Yorkers. New construction projects will be required to install zero-emissions equipment in 2025 for single-family and low-rise buildings and in 2028 for high-rise and commercial buildings.
- **Require Energy Benchmarking and Disclosure:** Starting with buildings larger than 10,000 sq. ft. in 2024, reporting on building energy consumption will inform decisions on upgrades and performance standards.
- **Scale Up Public Financial Incentives:** While many upgrades are cost-effective, increasing incentives will help with the upfront cost, especially for low- to-moderate income (LMI) New Yorkers. For example, a proposed "Retrofit and Electrification Readiness Fund" for LMI households, affordable housing, and Disadvantaged Communities would cover costs of necessary building improvements to install energy and efficiency measures.
- **Expand Access to Low-Cost Financing:** Financing products will be expanded, or created, to fund building upgrades and zero-emissions equipment purchases.
- **Market Development:** Expanding education, training, and job placement will create new employment opportunities and develop the local workforce to support quality installation and construction. Investing in local supply chains will elevate New York as a hub for future technologies while supporting the businesses and communities those products come from.
- **Transition Away from Hydrofluorocarbons (HFCs):** Research, education, and training will support the use of climate-friendly refrigerants in place of HFCs, which are a potent greenhouse gas conventionally used in refrigeration, insulation, heating, ventilation, and air-conditioning equipment.





Reimagining New York's Buildings

The Scoping Plan outlines a future vision for the buildings sector that prioritizes the health and well-being of New Yorkers while enhancing resilience to climate change and decreasing emissions.

Here's how New York's nation-leading building transition will look in practice:

- **All-Electric:** Millions of homes and businesses will use electric heat pumps for heating, cooling, and hot water by 2030, with most buildings converting by 2050.
- **Energy Efficient:** Investments in efficiency improvements, such as air sealing and insulation, will create thousands of jobs and reduce energy use in buildings.
- **Comfortable:** Cold climate heat pumps are already commercially available and able to keep homes and businesses comfortable year-round.
- **Affordable:** Electric and efficient buildings have lower operations and maintenance costs, saving New Yorkers money.
- **Resilient:** Integrating on-site renewable generation and energy storage can help withstand power outages and severe weather conditions.

Building Electrification in Action

Homeowners, businesses, and local governments across New York have made the move to lower their emissions and harness solar power to reduce their carbon footprint and utility bills. Here's a closer look at how our neighbors are leading by example.

Jamesville Farmhouse Switches to Solar and Geothermal

This 200-year-old rural farmhouse in Onondaga County received a 21st-century makeover with a ground source heat pump and solar array. Previously, the historic home was mostly closed off during winter due to the high costs of heating with a wood stove and propane furnace. Now, the four-ton ground source heat pump system and 10 kW solar array allows the homeowner to heat and enjoy the entire house at a fraction of the cost. The solar energy generated during the summer is net metered for use in the winter, reducing her electric bill to around \$20 a month. The ground source heat pump offers cooling for the first time in the home's history, providing affordable, year-round comfort. [Learn more](#) about how switching to geothermal and solar has improved this upstate homeowner's quality of life.



Pre-War Brooklyn Apartment Building Adds Heat Pumps

An eight-unit apartment building on MacDonough Street in Brooklyn's Bedford-Stuyvesant neighborhood had to overheat several apartments throughout winter to ensure adequate heating for all its residents. Motivated by high utility costs, tenant comfort, and the environmental impact of uneven heating, the building owner chose to switch from steam to heat pumps. Working with BlocPower, the owner chose to install a ductless variable refrigerant flow (VRF) heat pump, since the building was fitted with radiators to distribute steam heat rather than ducted pipes and vents to move hot air. This high-efficiency heat pump runs indoor units in multiple apartments on the same system—an ideal solution for this four-story, multi-family building. The VRF heat pump also provides air-conditioning, lowering tenant costs from operating window-unit systems.

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