



Photo: Oil barge at Kingston, Carolyn Marks Blackwood

Where Does Bronxville's Fuel Come From?

By Ellen Edwards

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Like people everywhere, residents of Bronxville are living through a time of major transition when it comes to energy. Climate change and other environmental concerns are forcing us to reconsider fossil fuels and move toward cleaner sources of energy. The power grid is being decentralized in an attempt to make the system more resilient—less vulnerable to storms, accidents and cyber-attacks—even as storms become more powerful and unpredictable. And digitization is allowing us to use energy far more efficiently. New York State is among the highest energy consumers in the country overall, but according to the U.S. Energy Information Administration, in 2015 our per capita use was the lowest. That's partly because 25% of our residents use mass transit—that's five times the national average.

Our state government has initiated an ambitious energy plan. In spring 2019 the state passed the New York Climate Leadership and Community Protection Act, which set challenging goals: 70% of the state's electricity must come from renewable energy by 2030 and 100% of the state's electricity supply must be emissions free by 2040. As of 2018, more than 50% of our energy needs came from out-of-state and Canada, and less than 25% came from renewable sources.

Natural gas burned at 64 power generating plants located throughout the state produces almost half of the state's electricity. Nuclear energy produced at four facilities supplies another 25%. New York is in the process of shutting down or converting to natural gas its few remaining coal-fired generating plants.

Petroleum is used for transportation and to heat homes. There are no petroleum refineries in New York; we access refineries in New Jersey and Pennsylvania. New York City harbor, with its terminals in both New York and New Jersey, is the largest petroleum hub in the northeast, with an ability to store up to 75 million barrels of oil. Petroleum for heating fuel and gasoline is distributed by truck to New England and

by barge up the Hudson River to upstate municipalities. We also access the Colonial Pipeline system, which brings petroleum from the Gulf Coast and was briefly shut down after Hurricane Harvey, and we import some petroleum from Canada. The proposed Pilgrim Pipeline, which would bring volatile crude oil produced by fracking from Albany, NY, to refineries in Linden, NJ, is being protested by dozens of communities and organizations.

Three fourths of the petroleum we import is used for transportation. The remaining quarter is used for heating homes and commercial property. Locally, fuel oil is supplied by a number of private companies.

One fourth of New York state homes are heated by fuel oil; one half are heated by natural gas supplied via pipeline from out of state and Canada. Increasingly our natural gas comes from Pennsylvania where it is produced by hydraulic fracturing (commonly called fracking) of the huge geological formation known as Marcellus Shale, much of which also underlies our state. Note that although fracking is now illegal in New York State, after a hard-fought battle, we rely on natural gas created by fracking processes that take place elsewhere. In 2012 the state became the first northeastern state to require that all heating oil be ultra-low sulfur diesel, a cleaner burning fuel. Such leadership has encouraged other Northeastern states to follow suit.

New York state generates more hydroelectric power than any other state east of the Rocky Mountains. The majority of our renewable energy comes from hydro power, especially from the Robert Moses Niagara Hydroelectric Power Plant, the fourth largest in the U.S. and one originally designed by Thomas Edison's rival Nikola Tesla.

The **New York Power Authority** is the largest state owned power organization in the country. First created by Governor Franklin Roosevelt in 1931, the NYPA promotes economic growth and energy efficiency through the power facilities it owns and operates, projects throughout the state promoting green energy, and its goal of becoming the first fully digitized utility in the country. The NYPA receives no tax revenue or state credit and finances its projects through bond sales.

As New York State works hard to reach its ambitious energy goals, every choice we make matters. According to the U.S. Energy Information Administration, for every gallon of gas your car burns (in which a gallon is 90% gasoline and 10% ethanol), 18.9 pounds of carbon dioxide are released into the air. Air travel is far worse, although some airlines are making strides toward lowering their carbon footprint. Have you ever considered limiting your plane travel, perhaps by choosing vacation destinations closer to home?

How efficient is your heating system? After transportation, it probably comprises your second largest use of energy at home. Is it time to investigate an upgrade? Are you sure your home is adequately insulated? Have you investigated installing solar panels on your roof? And if your roof is too shady for solar, you have the exciting option of Community Solar (see sustainablewestchester.org for more info).

State policy supports "electrifying the grid," in which we choose electricity instead of fossil fuels to heat/cool our homes and power our vehicles. Because we can now generate electricity using clean, renewable sources (such as wind, solar, and hydro) at competitive prices, we can significantly lower our state's greenhouse gas emissions by building more and more infrastructure for renewable electricity generation while at the same time we electrify our homes and cars. Electric vehicles (EVs) are now more practical and affordable than ever—especially with rebates. And the significant up-front costs of switching to air- or ground-source (also called geothermal) heat pumps to heat and cool your home can

be off-set by rebates and major efficiencies, resulting in significant savings long-term. Bronxville's village hall has run on geothermal for over fifteen years!

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