WIND POWER

Wind turbines can capture the energy in the winds that blow one to three hundred feet above the ground. With their tall towers and long blades, wind turbines can reach above the still air that settles near the ground into the fast moving air above.

Each turbine can generate up to 3 megawatts - enough to power a few thousand homes. Because winds are strongest in the night and in the winter, wind power is a great source of energy for New York as we shift to electric heat pumps to keep our homes warm in the winter.

BATTERY STORAGE

After decades of development driven by demand for portable electronic devices and then electric vehicles, lithium ion batteries have become extremely cheap and powerful.

Industrial-scale batteries are widely used to store energy for electrical grids, smoothing out spikes in demand. Battery storage also allows solar power generated during the afternoon to be stored for the peak in demand in the evening.

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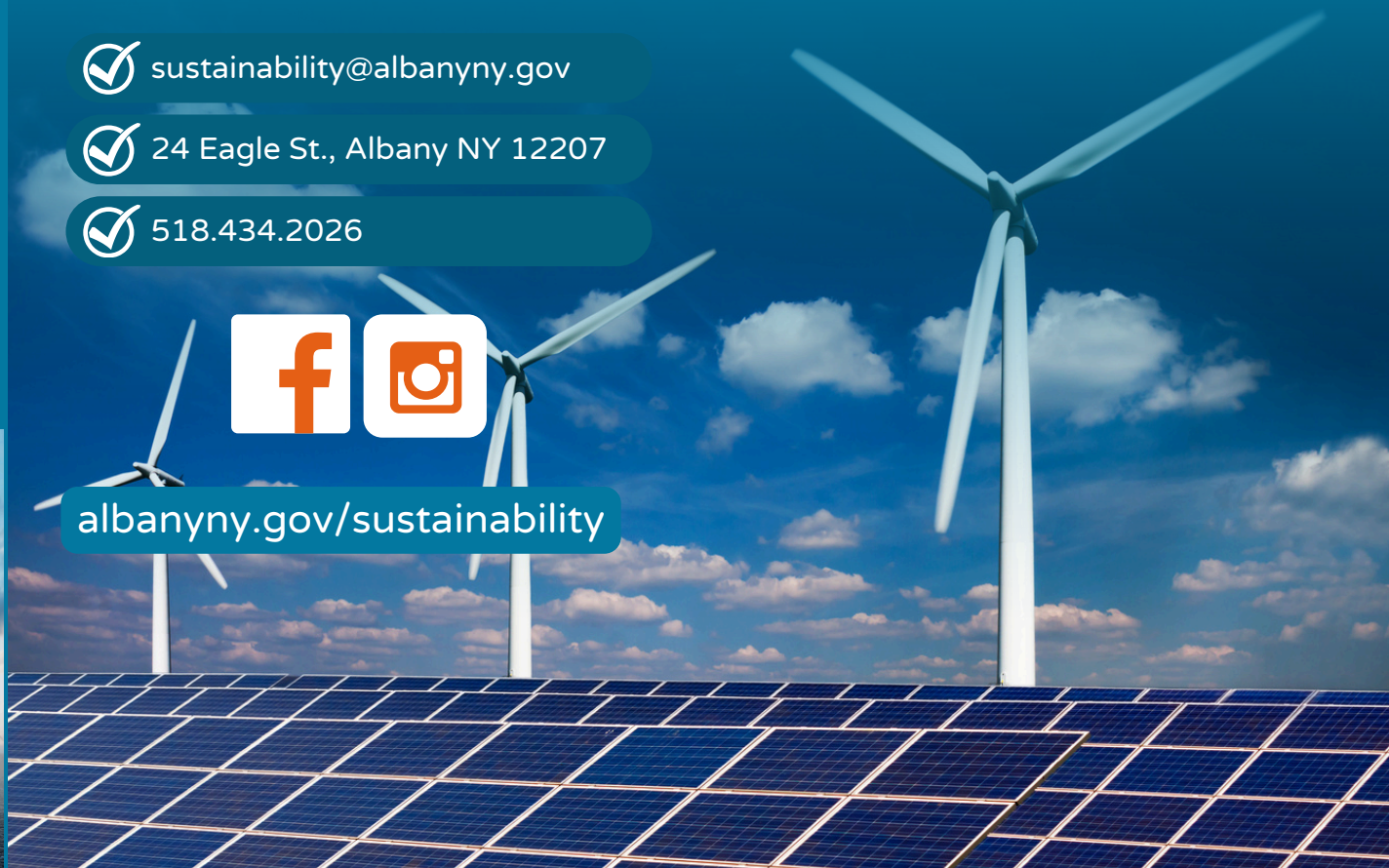
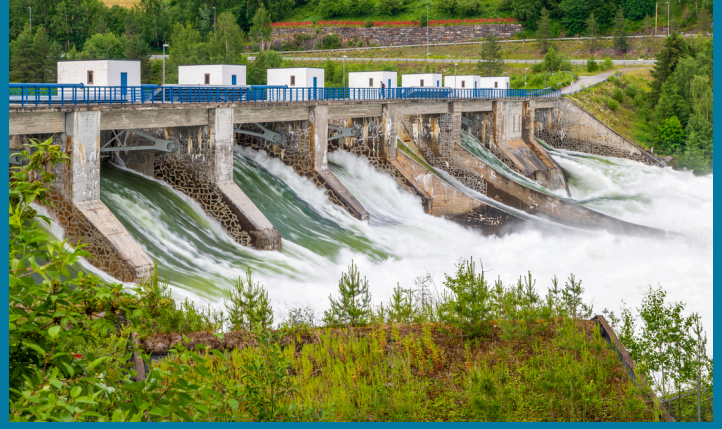


WHY CLEAN ENERGY?

Not many of us think about how electricity gets to our home or where it comes from. We see power lines and transformers scattered around our neighborhoods, but where is the power generated? From its beginnings to now, our electrical grid has been powered by dangerous fuels like oil, coal, and radioactive elements. These power plant fuels have been cheap and abundant, but also create massive amounts of toxic pollution.

The dawn of clean energy marks a new beginning in our approach to power generation as communities around the world recognize the urgent need to replace traditional fossil fuels and risky nuclear power. With advancements in technology, developing large-scale renewable energy sources such as solar, wind, and hydroelectric is becoming more common. Harnessing the natural elements, clean energy strives to eliminate greenhouse gas emissions, combat climate change, and create a sustainable future.

Governments, businesses, and individuals are investing in innovative solutions, from expansive solar farms and towering wind turbines to small-scale residential solar panels. This transformative era not only fosters a greener energy landscape but also creates economic growth and job opportunities within the growing clean energy sector.



HYDROPOWER

Hydropower is a way to make electricity using water. We use the energy from moving water, like in rivers or dams, to turn turbines. These turbines then spin generators that create electricity. It's a clean and renewable energy source because it doesn't pollute the air, and we can keep using it as long as there's water flowing.

GEOTHERMAL

While not a source of electricity, geothermal energy can be used to heat and cool buildings. An electric heat pump can use the relatively constant temperature of the earth to draw in heat in the winter and cool air in the summer. Whole neighborhoods or communities can be heated and cooled this way, using underground loops of piping to connect homes and businesses to a central ‘thermal energy network.’

SOLAR POWER

Solar panels work by using sunlight to knock electrons in silicon out of place and into waiting wires.

Solar panels (made of little more than silicon and glass) are now able to generate electricity in New York for about $0.07/kWh when installed in large facilities in rural areas, and about twice that for rooftop solar. Every new solar farm and solar panel represents gas we don’t have to burn and emissions we don’t have to add to the atmosphere.

New York needs a lot of power on hot days in the summer when air conditioners are all on. This is also the time when we can harvest the most solar power.

As we build more solar we will also need to install batteries to store the extra power we make in the middle of the day to cover demand as the sun sets in the evening hours.