How do windmills store energy

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This process is more complicated than simply storing electricity in batteries. Instead, excess electricity is fed into the power grid, where it is stored. This article explores how wind turbines store energy and how that energy is used to power homes and businesses.

Contrary to popular belief, electricity itself can"t be stored. Instead, it"s converted to other forms of energy, like heat or chemical energy, which can be stored and used later to generate electricity.

This is the most common form of energy storage on the grid. It works by using excess electricity to pump water into a reservoir. When there is an electricity demand, the water is released back down through turbines, generating electricity.

Compressed air storage uses excess electricity to compress air stored in an underground cavern or tank. When there is an electricity demand, the cold, compressed air is released through a heating system, spinning a turbine as it expands, generating electricity.

Excess electricity is used to split water molecules into hydrogen and oxygen. The hydrogen is then stored and used in fuel cells to generate electricity, or it can be combusted to generate heat.

Excess energy is used to generate a magnetic field, stored in a superconducting coil. When there is an electricity demand, the magnetic field is released and generates an electric current, which powers homes and businesses.

If you"re interested in pursuing a career in the wind industry, Universal Technical Institute offers the 30-week Wind Turbine Technician program. At UTI, the training can help you gain the skills needed to install and service wind machinery.1

When electricity is generated from the wind, there are two places the energy from the wind turbine goes to. The first option would be to directly transmit the energy to a power grid that provides electricity to communities. Nowadays, that is the more common way wind energy is processed.

However, there is a second option, and that is to store the wind energy. There are a handful of different processes used for wind turbine energy storage. There is battery storage, compressed air storage, hydrogen fuel cells, and pumped storage.

Wind power is an amazing source of renewable energy. But because the wind is not constant, the amount of power generated changes often based on the time of day and the seasons. This isn"t a negative factor because typically, we can generate a lot more electricity from wind than is demanded.

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Wind turbines on farms connected directly to an electrical power grid are modified to rotate slower so they don"t produce more energy than required. Other wind farms, though, can store the excess energy that is typically produced. It is possible to store that energy through these methods:

Compressed Air Energy Storage (CAES): These systems use excess power to compress air and are stored in underground caverns or above-ground tanks. When more electricity needs to be produced, the compressed air is released, which causes the turbines to move and generate power.

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