

Wind energy is kinetic energy from moving air captured by large turbines. Turbine blades rotate in the wind to turn a generator that produces electricity. Due to the size and scale of turbines, wind energy is primarily a utility-scale practice used to add capacity to the electricity grid. In the United States, wind energy is responsible for around 10 percent of the electricity mix, with that share increasing marginally each year.









The United States has vast regions with regular and strong wind throughout the year, both onshore and offshore. Because wind energy is available intermittently, and turbines capture low energy density – only converting around 35 percent of the incoming energy – wind turbines are most practical in central plains and offshore. Over time, higher efficiency technology may marginally increase the proportion of wind energy that is capturable to generate electricity. While wind energy produces no emissions as a passive collection technique, the mining and manufacturing process to create turbines is highly energy and material intensive. Accordingly, wind power is a function of both unlimited energy from the wind and limited physical resources for developing, deploying, and disposing of turbines.



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