



# What level of tornado wind has a future in power generation





## Overview

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The immense energy potential of tornadoes offers a promising avenue for renewable electricity generation, surpassing the challenges posed by hurricanes' energy storage complexity. In "Twisters," a caravan of trucks led by Kate Carter, a fictitious physicist who works at the National Weather Service. Among the various methods of energy generation, solar, wind, and hydroelectric power are currently the most prevalent. Solar energy harnesses sunlight through photovoltaic cells, converting it into electricity. Wind power captures the kinetic energy of moving air through turbines, while. 'Twisters' would suggest that tornadoes can topple turbines, but are they a threat to wind farms?

Wind energy is among the strategies in the United States – and many other countries worldwide – meant to help with decarbonization through a transition to cleaner sources of electricity production. A. For reference, tornadic wind speeds for an EF-4 tornado range from 166 to 200 mph. Overall, 10 Wind Turbine Generators (WTGs) belonging to 3 wind farms were damaged or completely destroyed: 5 WTGs out of 243-WTG Orient Wind Farm (2 percent) owned by Mid-American, 1 WTG out of 140-WTG Arbor Hill.



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First, building a WTG that could withstand a direct hit by an EF-4 or EF-5 tornado would be nearly impossible and/or extremely expensive. Designing WTGs to withstand such rare ...



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Wind currently powers roughly 10 percent of U.S. electricity and could grow more than 200 percent by midcentury, according to the Energy Information Administration.

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