

# Wind power and distributed generation cases

What is distributed wind research?

The Wind Energy Technologies Office's (WETO) distributed wind research program is advancing wind energy technology as a distributed energy resource to contribute maximum societal, economic, and power system benefits. [What Is Distributed Wind?](#)

What is the distributed wind energy futures study?

The Distributed Wind Energy Futures Study, funded by the U.S. Department of Energy's (DOE's) Wind Energy Technologies Office, used highly detailed data and new modeling techniques to identify locations with the highest potential for distributed wind energy of all forms. The findings can help communities transition to a clean energy future.

What is distributed wind energy?

Distributed wind energy has the potential to diversify local energy sources to help provide clean renewable energy in your community. [Click on the interactive animation or read a text version of the use cases.](#) [Loading virtual tour.](#) Please wait... [View the full-screen version of the animation or read the text version.](#)

Will distributed wind play a significant role in the US energy future?

NREL's Distributed Wind Energy Futures Study informs wind developers, grid planners, utilities, policymakers, and other stakeholders about opportunities for widespread U.S. distributed wind deployment in 2035. Distributed wind could play a meaningful role in the U.S. energy future. Photo from David Nevala Photography for CROPP Cooperative

Are distributed wind assets a good investment?

Distributed wind assets are often installed to offset retail power costs or secure long term power cost certainty, support grid operations and local loads, and electrify remote locations not connected to a centralized grid. However, there are technical barriers to fully realizing these benefits with wind alone.

What is WETO's research in distributed wind systems integration?

WETO's research in distributed wind systems integration seeks to develop and validate wind technology as a plug-and-play resource with solar, storage, and other distributed energy resources to support grid system reliability and enhanced power system resilience.

This study addresses the integral role of typical wind power generation curves in the analysis of power system flexibility planning. A novel method is introduced for extracting these curves, integrating an enhanced K ...

Co-locating energy storage with a wind power plant allows the uncertain, time-varying electric power output from wind turbines to be smoothed out, enabling reliable, dispatchable energy for ...

The simulation of wind power generation used in this study has been carried out to verify the generating power and the correction of the electrical signal. In terms of power ...

In this case, wind speed was fixed at the 12.0 m/s. The overall simulation results are found satisfactory. ... (AVF) are implemented for power quality features in three-phase ...

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Distributed generation has been identified as one main solution capable of reducing pollution when solar and wind power are used and, hence, rejuvenating dilapidated infrastructures and redeeming ...

The development of distributed energy systems in China is one of the important measures to promote the revolution for energy production and its utilization patterns. First of ...

Distributed generation strategies based on renewable energy, involving what is referred to as Stand-alone system, have been successfully demonstrated in rural areas and ...

Wind power generation was selected as a distributed generation system based on the assumption that the area has wind potential and the recent commission plan consists mainly of wind farm. Wind power generation was ...

Distributed Generation in China: The Case of Natural Gas, Solar and Wind Resources Tian-tian Feng 1,2,3,\*, Yi-sheng Yang 4, Yu-heng Yang 5 and Dan-dan Wang 6 ... wind power with 3 ...

The most widespread distributed generation alternatives are: mini-hydros, wind generation, co-generation (CHP, combined heat and power) in industry or buildings, and small independent ...

