

Study finds people prefer wind turbines as neighbors over other energy plants

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A new UD study shows that people who live close to wind power projects prefer those over energy alternatives. Credit: University of Delaware

A new University of Delaware study examined the attitudes of people who live in close proximity to wind power projects to see if they prefer those projects to energy alternatives, such as a central power plant— fueled by either coal, natural gas or uranium—or a commercial scale solar installation.

UD's Jeremy Firestone and an undergraduate student, Hannah Kirk, used a publicly-available dataset from a Lawrence Berkeley National Lab study to assess the opinions of individuals who live within 8 kilometers of a wind turbine to gain insight into their energy preferences.

They found study respondents strongly preferred their local wind power project to any of the alternatives being located at a similar distance, regardless of the political, geographic or economic characteristics of the state in which those respondents lived.

Overall, the study showed that approximately 90 percent of respondents prefer their local wind

project to a central power plant sited at a similar distance regardless of fuel. Furthermore, of the approximate two-thirds who have a [preference](#), the local wind power project was preferred over a commercial-scale solar installation by approximately three to one.

The results of the study were published Monday, March 18 in the journal *Nature Energy*.

Firestone, professor in the College of Earth, Ocean and Environment's School of Marine Science and Policy and Director of the Center for Research in Wind, said that there have been studies of comparative preferences with regards to wind power before, but they focused on people who lived far away from wind turbines.

"Those studies measured opinions regarding generation facilities located 40 to 160 kilometers away," said Firestone. "At those distances, people are more likely expressing general attitudes regarding technologies rather than how those technologies affect them at the level of community."

State characteristics

The researchers considered state characteristics of a respondent such as level of coal production, location—whether coastal or southwestern—and proportion of farmland and rangeland as well as population density.

"Irrespective of living in geographically different locations with diverse economies, respondents exhibited a strong overall preference for their local wind power project," said Firestone. "Even respondents in coal-mining states would prefer their local wind power project by more than 10 to one over a similarly-sited coal-fired power plant. This suggests the energy transition that is underway in the United States may be embraced widely."

They also evaluated the effect of state voting

patterns on choice among energy technologies, characterizing a red state as those states whose populations voted for the Republican candidate for president in 2012 and 2016; purple for those who voted one way in 2012 and then switched in 2016; and blue for those who voted for the Democratic candidate in 2012 and 2016.

Kirk, the sophomore majoring in energy and environmental policy who helped with the research, said that they "did not find a significant difference among the respondents' preferences for wind power based on voting patterns, reflecting that preferences for wind power are bipartisan."

This overwhelming preference for one's local wind power project made Firestone think about how researchers are asking questions of the public with regards to local renewable [energy](#) projects.

Firestone said that researchers need to be more nuanced when it comes to characterizing results from studies and design them to fully capture public attitudes, preferences and opinions.

"We've looked at social acceptance of wind projects examining factors such as effect of landscape change, sound and place attachment. In those studies, the ultimate question is whether a community member supports or opposes a local project—that is, wind power or nothing. But that's not the societal choice, which is instead, among wind power, solar, coal or natural gas," said Firestone. "Even when residents might have less than positive attitudes toward a local project, the majority appear to conclude that their local [wind power](#) project is better than the alternatives."

More information: A strong relative preference for wind turbines in the United States among those who live near them. *Nature Energy*. doi.org/10.1038/s41560-019-0347-9

Provided by University of Delaware

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