

Study: Wind energy could power up temps

Researchers cite potential drawback of a full expansion

The Associated Press

WASHINGTON — Ramping up wind power in America would also dial up the nation's temperatures, a new study out of Harvard found.

While wind energy is widely celebrated as environmentally friendly, the researchers concluded that a dramatic, all-out expansion in the number of turbines could warm the country even more than climate change from burning coal and other fossil fuels, because of the way the spinning blades disturb the layers of warm and cold air in the atmosphere.

Some parts of the central United States are already seeing nights that are up to 2 degrees Fahrenheit warmer because of nearby wind farms, said study

lead author Lee Miller, an environmental scientist at Harvard.

"Any big energy system has an environmental impact," said Harvard engineering and physics professor David Keith, a study co-author. "There is no free lunch. You do wind on a scale big enough . . . it'll change things."

The researchers and other scientists stressed that climate change from greenhouse gas emissions is clearly a far bigger threat globally and over the long term than turbine-caused warming, which is temporary and stops when the blades aren't turning.

Despite the potential drawbacks, wind energy still makes more sense for the environment than fossil fuels, Keith said. It's just that advocates of wind power have been ignoring growing evidence of a downside.

Overall, the Harvard study, published Thursday in the journal *Joule*, found that in the unlikely event that the United States switched massively to



AP / CHARLIE NEIBERGALL

Some parts of central United States are already experiencing warmer nights because of wind farms, the Harvard study showed.

wind to supply nearly all of its electricity, there would be so many turbines that on average the nation's temperature would go up about 0.4 degrees. Some central areas would see localized warming around 2.5 degrees, though there would also be some cooling in places, such as

the East Coast.

Right now, wind provides 6.3 percent of the nation's electricity, according to the American Wind Energy Association.

The study, which looked at just the United States, said that the turbines would cause more warming in the short term this

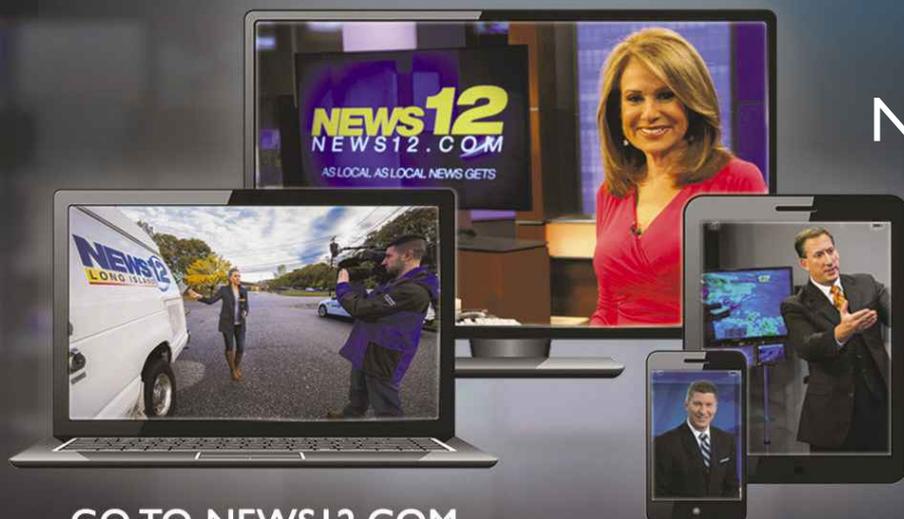
century than the carbon dioxide America spews into the atmosphere would.

The reason for this effect: Normally the air is more still at night, with cold air staying near the surface and warmer air resting a little higher. But turbines bring the warm air down and cool air up, making the ground a bit toastier. The effect is seen less during the day but is still there.

Still, the effect from turbines is different from human-caused climate change. It mostly consists of warming, it's local, and it's temporary. When the turbines are still because the air is calm, there's no warming.

Climate change, in contrast, is a global effect that involves many more elements than temperature, such as sea level rise, extreme weather, melting glaciers and shifts in the jet stream. Even if a country stopped emitting greenhouse gases, it would still experience climate change if the rest of the world kept on polluting.

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