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Atop the Ocean, a Sea of Untapped Energy

By **JIM DWYER**

Bobbing in the Atlantic, about nine miles from the sandy beaches of the Rockaway peninsula, a [yellow buoy](#) clangs and blinks, rising and dropping on the ocean swells. Fixed to the nose of the buoy are two anemometers that spin in the wind. They read the direction and speed of the wind 24 hours a day, like a [dog with its head out the window](#) of a car on an endless highway.

This is Buoy 44065, and it sits at the entrance to New York Harbor. Attention must be paid, as the events of recent days have shown.

On Wednesday, the federal government [gave its approval](#) for an energy company to plant a grove of giant windmills in the waters off Cape Cod. If they are built — and the plan still faces opposition from people who say, among other things, that they are too expensive or too intrusive — they could replace the electricity made by more than 100 million gallons of [oil](#) annually.

The United States does not have a single offshore wind turbine, though there are more than 800 off the coast of nine European countries. So what do the wind gauges outside New York Harbor tell us?

“There is a lot of power out there,” said [Brian A. Colle](#), a professor at the [School of Marine and Atmospheric Science at Stony Brook University](#). “We are in a pretty nice location for the winter and for the warm seasons.”

[The city and Long Island](#) are now speaking to manufacturers and developers about building a

wind park in the ocean about 13 miles from Rockaway, producing enough energy to power 250,000 homes.

At least in the short term, electricity from wind would be much more expensive than what we are now billed for nuclear, gas and oil power, and New Yorkers already pay some of the highest prices in the country.

But utility bills tell only part of the story; no one knows yet what the costs will be to clean up the oil that has been pouring into the Gulf of Mexico since a rig exploded on April 20, creating a slick that has become a toxic country of its own.

Much of the price will surely be paid by the general public. Each source of power comes with its own risks and off-the-books costs.

Wind energy, for instance, is clean but not steady.

After studying nine years of wind readings along the coast, Mr. Colle and David Novak, a scientist with the [National Oceanic and Atmospheric Administration](#), found that the [New York Bight](#) — the area of the Atlantic off New Jersey and Long Island — experiences prolonged jets of air, three or four times a month, usually in the late afternoon and early evening in the spring and summer.

During those jets, the wind speeds slowly climbed from about 10 miles per hour and reached 15 to 25 miles per hour. The increases are caused, Mr. Colle said, by the inland heat from the continent at the warmest time of the day meeting the relatively cool ocean waters. Their findings will be [published](#) next month.

“You don’t get that every day in the summer,” Mr. Colle said. “It dips downward every week or so. You’re going to have periods of time when there’s high pressure sitting over, and very little wind.”

If the wind doesn’t blow, turbines will not spin. When it blows harder — as in the jets identified by Mr. Colle’s study — they will spin faster and make more electricity.

In December, Mayor Michael R. [Bloomberg](#) visited [Denmark](#), which makes more of its power from wind than any country and often sells it to its neighbors. Balancing wind production with

demand is devilishly complicated; at times, when Danish wind production has been high, the price for power has [dropped to zero](#), according to Nord Pool Spot, the regional electricity exchange.

“Wind is an expensive source of energy, but you don’t just buy the low-cost source,” said Rohit Aggarwala, Mr. Bloomberg’s chief adviser on sustainability.

Oil and gas may not look as cheap if a national carbon tax is enacted, and wind “would not fluctuate like the cost of natural gas and oil,” Mr. Aggarwala said. “It’s zero carbon, and it’s zero pollution.”

And there’s a way around the inconsistency of the wind, according to [another study](#) that Mr. Colle worked on.

The wind is always blowing somewhere along the Atlantic coast — so if coastal wind parks were linked from Florida to Maine, it would mean that the turbines were always spinning somewhere.

The world has enough wind to supply “the total energy need of humanity,” the study said.

“On paper,” Mr. Colle added.

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