

# Wind Power

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AP File / JEFF HORNER

A study commissioned by Governor Carcieri identifies several areas off the coast of Rhode Island that are suitable for one or more wind farms that could generate enough electricity to supply 15 percent of the state's power demands.

RIWINDS, as it's called, would be comparable in scope to the proposed Cape Wind project in Nantucket Sound, and could cost \$900 million to \$1.9 billion, depending on where the turbines would be located, how many were erected and several other variables.

Last year, Carcieri announced a five-part plan to help bring down energy prices, including a proposal to develop a wind-energy project that would generate about 150 megawatts of electricity, or about 15 percent of Rhode Island's electricity usage. The state commissioned a wind study in June, and the governor is expected to release the findings today.

Perhaps the most important finding of the study is that the project would be economically feasible. That is, the cost of the electricity generated by the wind turbines over the next 20 years would be competitive with the projected costs of electricity in Rhode Island, the study said.

"The economics are right in line with what we are hoping for," said Andrew C. Dzykewicz, commissioner of the state's Office of Energy Resources. "With a technology that doesn't need to escalate prices based on fuel, I think we're in really good shape. It's a first step toward energy independence."

The biggest unknown is how Rhode Islanders will view a wind-farm project of this size. The proposed Cape Wind project is widely supported by Massachusetts' residents, according to the project developer. Yet a strong and powerful lobbying group that opposes the wind farm has slowed the permitting process.

If the Rhode Island wind energy project is well-received by the public, Dzykewicz said it could be operational in as little as four to five years.

The 132-page study, which the Providence Journal obtained, was prepared by Applied Technology & Management, a coastal, environmental, marine, and water resources engineering firm headquartered in Gainesville, Fla. The report cost about \$380,000 and the state paid for it with money from a monthly surcharge collected from utility customers, as well as a \$150,000 grant from Florida Power and Light, a major owner and operator of wind farms.

Applied Technology said it determined the best sites to place wind turbines by a process of elimination. The firm looked at the entire state as well as surrounding Rhode Island and federal waters, extending about 10 miles from Block Island, said Daniel L. Mendelsohn, the company's Northeast regional director.

The company said it constructed models to estimate how much energy could be generated by the wind based on 20 years of historical data from a National Oceanic and Atmospheric Administration wind-monitoring station in Buzzards Bay.

Potential sites deemed “difficult” to develop were eliminated. Those included environmentally sensitive sites, those likely to generate public opposition and others that would be too expensive to build.

The company ended up with 10 offshore sites and one onshore site — a 3,060-acre parcel in Little Compton, where Applied Technology said producing wind energy would be economically feasible .

Not all the sites would need to be developed to reach the governor’s 15-percent goal, said Dzykewicz, and the 11 areas could produce five times the amount of energy needed to meet that goal.

“We’ve got so much, we can essentially dispense with 80 percent of it,” he said.

That leaves many options, from developing just one site — a 22.3-square-mile area off the coast of Little Compton and Newport — to developing several smaller sites.

The option that would produce the cheapest electricity appears to be developing two adjacent areas near Block Island. A 13.1-square-mile site just south of the island is in Rhode Island waters, and a 13-square-mile site southwest is in federal waters. Wind projects in federal waters would have to go through a federal permitting process, while those in state waters would need only state approval.

Both sites could each contain 56 wind turbines and could generate a total of 220 megawatts of electricity – enough to power 220,000 homes, the study said. That’s about 1½ times the power needed to reach the 15-percent goal.

The study estimated that the cost to generate electricity from these two sites, averaged out over 20 years, would be about \$96 per megawatt-hour in today’s dollars. Under a conservative forecast of energy prices, that would be at or slightly above the market price, according to the study. Under a forecast of higher energy prices, the cost is well below a projected market price of \$140 per megawatt-hour.

The total cost of developing the two sites near Block Island, Mendelsohn estimated, would be about \$1.9 billion.

One of the most expensive aspects of any offshore wind turbine development is running transmission lines underwater or underground from the site to a distribution line on land. Electricity utility National Grid estimated that connecting one of the large projects to the 115,000-volt transmission line in southern Rhode Island would cost \$25 million.

The study considered three ways that RIWINDS could be paid for: all-equity financing in which private investors pay for the project with their own internal resources; equity plus commercial debt, in which a long-term owner uses his own money and borrows the rest; and bond financing in which a public sector entity issues long-term bonds, to be repaid by cash flows from the project.

The equity-plus-commercial-debt scenario would produce the lowest cost to produce the electricity, the study said, because it could take advantage of federal tax incentives.

In any of these scenarios, the risk lies with the investors or bond holders, not with taxpayers, Dzykewicz said.

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