

## CASE STUDY

# ON-SITE POWER

Small Wind



## Wind generates 70 percent of this homeowner's electricity needs



Photo credit: Phil Coombe

**Customer**  
Phil Coombe

**Location**  
Sullivan County, NY

**Installation Date**  
2011

**Equipment**  
Gaia 11 kW wind turbine on a 120-foot tower

**Energy Generation**  
13,000 kWh annually

### Background

Phil Coombe owns 140 acres of farm land in Sullivan County, NY where the non-stop wind was a major irritant. While thinking about what he could do to solve this problem, Phil recalled another farmer in a nearby county who had installed a Gaia Wind Turbine. Suddenly he had a great idea – he could turn this wind liability into a powerful asset. With the amount of land he owned, he would have more than enough space to site a wind turbine.

### Challenge

A wind turbine built for moderate wind speeds was what Phil needed to achieve the goal of generating the majority of his own electricity. The Gaia was an ideal choice due to the very large swept area, perfect for the average 10.5-mph wind speed on Phil's property.

A 120-foot tower would be needed to allow the bottom of the turbine blades' arc to be 30 feet above everything within 500 feet of the tower. This would ensure that the turbine would produce as much energy as possible and minimize the turbulent wind the turbine would experience, helping to reduce maintenance costs.

Although Phil now had the answer, what he needed was a way to address the expense. The project's cost would not be economically feasible without some help.

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## Solution

Phil turned to the New York State Energy Research and Development Authority (NYSERDA) for help. Based on the predicted performance of the turbine, this project was eligible for NYSERDA incentives and federal tax credits. With a drastic reduction in a \$2,800 electric bill, Phil was able to justify the economics.

Phil carefully reviewed NYSERDA's list of eligible installers. He selected Roger Dixon from Skylands Renewable Energy, LLC. Phil stated that the company's style and philosophy would be the perfect match for his expectations. Roger knew Phil wanted to be involved throughout the installation and that it would be important for him to participate. Roger taught Phil the proper tower climbing technique and helped him pick out and properly adjust an appropriate safety harness.

Most wind turbine owners have no interest in climbing their tower, but as long as they know how to do it safely, Roger doesn't mind. "It's his tower."

Phil likes the climb, "The view from the top is spectacular – this is an investment I can really enjoy!"

## Results

The turbine was connected to the electrical grid on December 28, 2011. One year after the installation, the turbine has produced 13,000 kWh of electricity and Phil has achieved his goal of producing 70% of his needed electricity. He has also gained a new way to oversee his hilltop property.

## Get Started

Visit [nyserdera.ny.gov/small-wind](https://nyserdera.ny.gov/small-wind) or call **1-866-NYSERDA** to learn how you can reduce your energy consumption and costs.



Photo credit: Phil Coombe

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