



New York State Virtual Wind Contest



Middle- and high-school students are invited to participate in a contest to design the most efficient virtual wind farm using the *School Power...NaturallySM Virtual Wind Tool*

Contest Components

Wind Energy Concepts Research – Instructors can facilitate activities in their classrooms from a list of recommended resources, or the students can complete a worksheet that requires them to explore related websites

Virtual Wind Farm Design – Using the *School Power...NaturallySM Virtual Wind Tool* students optimize wind farm output and cost-effectiveness efficiency by adding and modifying wind turbines to meet the contest specifications

Design Synopsis – Students explain the design decisions and influencing factors that contributed to the final result

Outreach Component – Students conduct an activity (poster, website, presentation, letters, etc.) that raises awareness of wind power generation in their communities

Wind Farm Energy Summary

Number Of Turbines	Wind Farm Area (km2)	Power Capacity (MWh)	Yearly Energy Output (kWh/Yr)
NA	NA	NA	NA

Wind Farm Emission Offsets

Sulfur Dioxide	Nitrogen Dioxide	Carbon Dioxide		
Kilograms per year	Kilograms per year	Kilograms per year	Equivalent number of cars removed	Equivalent number of trees planted
NA	NA	NA	NA	NA

Wind Farm Cost Summary

Turbine & Tower	Installation	Transmission Lines	Service Roads	Total	Cost To Energy Ratio (\$/kWh)
NA	NA	NA	NA	NA	NA



Contest materials will soon be available at www.schoolpowernaturally.org. They can also be obtained through the contact at the bottom of this page.

Contest Objectives

- Offer students an introduction to wind turbine technology and the wind farm design process
- Provide a platform for teaching renewable energy principles, as well as a proper intermediary into environmental and ecological studies
- Harness students' understanding of turbine concepts to increase awareness of wind power generation

Following participation in the NYS Virtual Wind Contest, students should:

- Be familiar with the factors that influence where a wind farm is located and what natural features would make an ideal site
- Understand how wind tower and turbine variables affect its performance
- Recognize that there are factors beyond the design of the wind farm and its economic viability that may influence whether it can be built

Contest Organization

- Instructor and student guidelines, concepts worksheets, and other materials outline the recommended procedure for easy implementation
- Design criteria such as the wind farm capacity, county where the farm must be located, turbine spacing, and wind farm area are specified

Participation Level II – Grades 5-8

- Optimize the wind farm design to maximize yearly energy output

Participation Level III – Grades 9-12

- Optimize the wind farm design to maximize cost-effectiveness

School Submissions

- One entry for each participation level per school is allowed, but teachers can conduct their own classroom contest to determine the best design

***Participation requires computer access. Internet availability is beneficial, however, CD versions of contest materials and the educational wind tool can be provided*

Awards

Wind education-focused awards are being considered and will be announced before the contest begins

Schedule

The contest is scheduled to commence January, 2010. The expected entry deadline is the end of February, 2010

NYSERDA's **School Power... NaturallySM** is a **New York Energy \$martSM Schools** Program designed to educate citizens about the role that renewable energy can play in providing clean energy to our schools, homes, and businesses. In 2004, 2kW Photovoltaic systems were installed on 50 schools and curricula were developed for students to use these systems as a learning tool. NYSERDA is enhancing the existing resources and expanding the program to cover other renewable energy sources, such as wind power. For more information, visit the **School Power... NaturallySM** website at: www.schoolpowernaturally.org



www.nwttech.com

Contact Christel Willson at New West Technologies for more information or to sign up for the 2010 Contest

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