4-H Grab and Go:
Community Wind Project

Concept:
The feasibility of a wind turbine project is dependent on a variety of issues, including community consensus after arguing for and against it. Realize that a variety of issues determine the feasibility of a wind turbine project, and there may be valid arguments for and against the project.

Age Level:
Middle School: Grades 5-8

Education Standard: NSES—Science in Personal and Social Perspectives

SET Ability: Communicate, observe, interpret/analyze/reason

Life Skill: Acquiring and evaluating information, Wise Use of Resources, Communication

Success Indicator: Youth will work together as a group to research issues related to implementing a wind turbine project and present the results of their research in a town hall meeting format.

National 4-H Curriculum:
The Power of the Wind (www.4-H.org/curriculum/wind)

PREPARATION

Time: 10 minutes
Space: meeting room
Materials:
- access to internet and/or research materials
- local news articles related to windpower
- local zoning information

Background Information

There are various sizes of wind projects, and various sizes of turbines. A utility-sized wind farm could have thirty turbines or several hundred, with each turbine having 1—3 MW power capacity. A community project might consist of two to four turbines. These turbines could be utility-size or smaller. Community wind projects are owned by the people who live near the turbines and use the electricity. The community could be a town, a municipal utility, a school, a business, or any group that works together to develop the project for the benefit of the whole group.

Small wind turbines typically produce electricity for a single home or farm. These turbines may operate alone in areas where utility supplied electricity is not available, but more commonly they are part of a grid connected system of electricity supply that also includes a local utility. The federal government as well as several state and local government agencies have policies that are favorable to producing electricity with wind power. Wind is a renewable resource and wind turbines do not burn fossil fuels or emit carbon dioxide. Yet, there are challenges to increasing the percentage of electricity generated by wind and disadvantages to relying on wind power.

Research the possibilities and impacts of installing wind turbines in your state or near your community. Investigate the feasibility of a community wind project for your school or town.

Plan a Project

Investigate issues associated with building and operating wind turbines in your community.
Research topics such as:
- available wind resource
- economic feasibility
- noise
- aesthetics
- habitat protection
- construction of the turbines
- economic impact of the turbines
- local electricity supply needs

Elbow Creek Wind Farm in Texas Courtesy of DOE/NREL, Credit - NRG Energy

Support for this resource was provided by the 3M Foundation.

Community Wind Project

RESEARCH TIPS

There are many sources for information. You can find good information about almost any topic on the internet, but you need to remember that the internet is public, and almost anyone can post information. Be sure to investigate the credentials of the author and the sources of the information. For example, a government website may supply facts while information supplied by a company may be biased toward the company's view. Being aware of possible biases and investigating a variety of viewpoints will help you form your own opinions.

RESOURCES

- U.S. Department of Energy Frequently Asked Questions about Wind Energy www1.eere.energy.gov/windandhydro/faqs.html
- American Wind Energy Association www.awea.org
- Windustry www.windustry.org
- Wind Powering America www.windpoweringamerica.gov
- Center for Energy Efficiency & Renewable Energy, University of Maryland www.ceere.org/rerl/about_wind
- Information on state, local, utility, and federal incentives and policies that promote renewable energy and energy efficiency. www.dsireusa.org

Work with your group to address concerns with regard to each issue and use relevant facts to write logical arguments in your notebook that support or oppose a turbine project.

Town Hall Meeting

Set up a town hall meeting. Assign various members of your group the community roles listed below or make up your own. Decide whether that person is for or against the project. Research the facts about wind energy that might inform this person's perspective. Organize the meeting in such a way that each person has an opportunity to state their position and present the facts that support that position. Determine whether a wind turbine project is desirable for your community and if so what type of project is best.

- A local game warden
- An environmental activist
- A representative of a national wind power association
- A state legislator
- A local real estate developer
- A highway engineer
- A PTA parent
- A member from the zoning commission
- A reporter from the local newspaper
- A local resident
- A local farmer

Courtesy of DOE/NREL, Credit - Andy Swapp/PIX14995

Milford Elementary School, Milford, Utah