

## **ENGINEERING CHALLENGE ACTIVITY**

Conventional tower wind turbines require 0.13 square mile of unobstructed land.

Communities that have sufficient wind for power generation may not have sufficient land.

Some communities may have the space but need to find the optimal location to power the turbine.

Your challenge is to design a wind turbine for power generation in your community. Base your solution on criteria and constraints on your specific community. Consider noise and safety in your design. What are the challenges you face at certain stages in implementing wind energy?

- Describe the problem you are solving.
- Identify the environmental, social, and economic benefits of your design.
- Identify any possible drawbacks (intended or unintended).
- State your design criteria and constraints.
- Identify two or three possible design solutions, and state the pros and cons of each design (sketches or descriptions).
- Provide specifications for your final design, including materials and dimensions.
- State the instructions for assembling and using your wind turbine.