

# **MOAS Project: Wind Energy Demonstration**

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## **Project Scope**

### **Wind Energy Systems Inc.**

#### **Members**

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The Mary Brogan Museum of Arts and Sciences (MOAS) has decided to create a new set of exhibits to educate the public in energy and power generation. We were given the challenge of designing an exhibit that would educate the public about wind as an alternative energy source. Our group has decided on a wind turbine demonstration to convey this concept. To create an interactive exhibit, the input wind energy will be created by the observer when a hand crank is used. The wind energy will then be converted into electrical energy by means of a wind turbine system. The electrical energy will then be used to power a sequential lighting system to represent an increase or decrease in supplied power.

### **Problem:**

- Design a museum exhibit to demonstrate the abilities of wind energy to the general public of all ages.

### **Expectations:**

- Due to small children interacting with the exhibit, safety will be a high priority so that no one is hurt.
- Simple enough for people of all ages to comprehend.
- Durable enough to withstand the constant use of the public for long periods of time.
- Able to have people interact with exhibit and use it, not just look at it.
- Has to be able to put into the museum for display at the end of the school year, must not fail.
- Visibility of all moving parts, and able to view exhibit from a minimum of 270°.

### **Systems involved:**

- Gear train for hand crank system to provide wind energy
- Wind Turbine system
- Electrical system to visualize the power generated by wind turbine
- Velocity measuring system
- Angle of attack system to adjust the efficiency of the windmill