

# Wind Turbine Simulator

Re-Energy

Activity

Grade Level 7-12



## Main Objective

In this activity, learners will use an interactive simulator for a hands-on experience with a wind turbine.

## Learning Outcomes

By the end of this activity, learners will:

- Understand how wind can be harnessed to generate electricity
- List causes of wind
- Describe the benefits of wind energy as a renewable energy source

## Length of Activity: 1-1.5 hours

**Step 1:** Use the simulator to learn about wind turbines

## Materials List

- Internet-enabled device per learner
- Wind Turbine Simulator
- Harnessing the Wind Webinar

## Activity

### Step 1: Use the Interactive Wind Turbine Simulator

Explore wind energy with this simulator by GreenLearning:

 [Interactive Wind Turbine Simulator](#)

- The first part of the simulation explores how a wind turbine works. Learners will change the wind direction and wind speed to complete the statements.
- Learners will then continue inside the turbine where they will drag and drop the name to match the correct part of the wind turbine.

### Discussion Questions

1. In a few sentences, explain how a wind turbine works.
2. What happens to the electricity output if the wind speed increases from calm to stormy? Explain what happens and why.
3. What happens to the electricity output when the wind speed decreases from stormy to calm? Explain what happens and why.
4. What happens to the electricity output when the wind direction changes? Explain what happens and why.
5. Why is there a maximum electrical output at a certain wind speed for a wind turbine? What determines this maximum electrical output and how can we find it?

### Extension Activity

Visit our Wind Energy Unit to build your very own wind turbine!

 [Build Your Own Wind Turbine Activity](#)