

Lab Activity: Understanding Generators

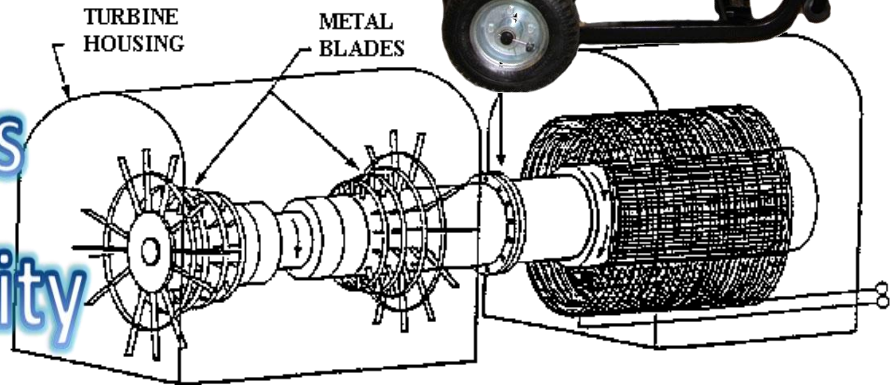


We can use generators when the electricity in our homes and buildings goes out. Generators operate by converting mechanical energy into electrical energy. We can use several methods to turn a turbine to provide a generator with the mechanical energy needed in order to change the energy into electricity.



Generators

Generate electricity



TURBINE

GENERATOR

Number of Washers Dropped	Brightness of Light Bulb 5=super bright, 4=bright, 3=visible, 2= dim, 1=flicker, 0=no light
1	
2	
3	
4	
5	
6	
7	
8	

When a turbine is attached to the electrical generator, the kinetic energy (i.e., motion) of steam pushes against the fan-type blades of the turbine, causing the turbine, and therefore the attached rotor of the electrical generator, to spin and produce electricity.

Objective: Observe and understand the energy conversions that occur in a generator.

Step 1: Your teacher will model for you how to conduct your investigation.

Step 2: Fill in the table as your group determines the brightness of the light bulb as washers are dropped from the motor pulley.

QUESTIONS:

1. What provided the mechanical energy for the generator to use? _____
2. What is the evidence that the generator produced electrical energy? _____
3. (Use the table) How did the number of washers dropped affect the brightness of the light bulb?

4. What are different methods that people use to turn a turbine in order to help a generator generate electricity?

5. What was the independent variable in the investigation? _____
6. What was the dependent variable in the investigation? _____