

## Module 2 Energy Lessons 1-5

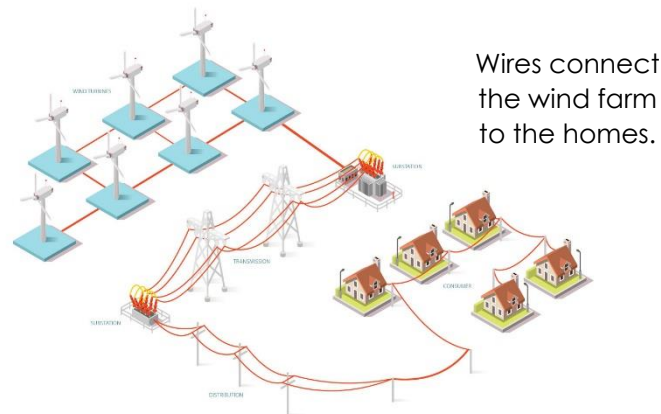
Anchor Phenomenon: Windmills at Work

Essential Question: How do windmills change wind to light?

Focus Question: What is energy?

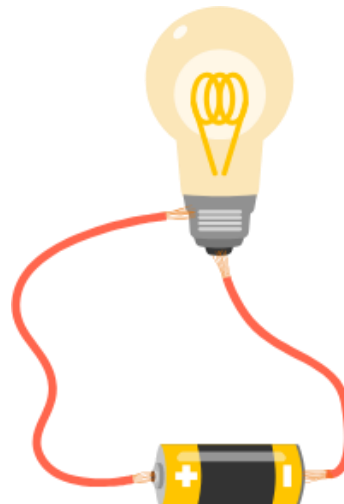
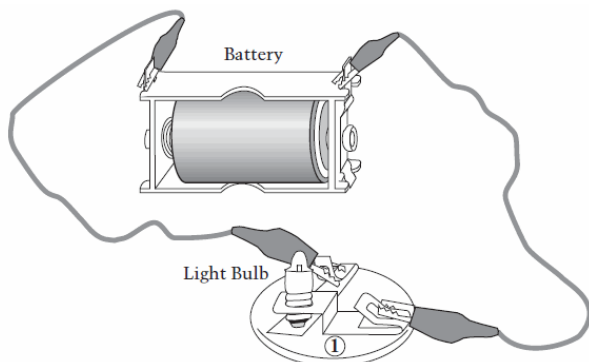
- Energy is needed to make everything happen. Wind power is energy, such as electricity, that is generated directly from the wind.
- In order to make electricity from wind, energy companies use large windmills called wind turbines.
- A wind turbine produces electricity by spinning huge blades which in turn spins a generator to make electricity.

Wind Farm Diagram



### Circuit Model

For an electric current to happen, there must be a **circuit**. A circuit is usually made by linking electrical components together with pieces of wire cable. In an **open circuit**, or broken circuit, there is a break along the line and the current stops. In a **closed circuit**, or complete circuit, electric current can flow and can be used by electrical appliances.



**Energy** is present when we observe something moving or happening.

Visible signs that energy is present:

- Light: flashlight shines, LED lights up, lightbulb lights
- Heat: Light bulb gets hot, hands get hot when rubbing them together
- Motion of objects: car moves, blades spin, objects move faster
- Temperature change: object gets hot, heats up or cools down
- Sound: music plays, wheels turn, cars crash, hands clapping