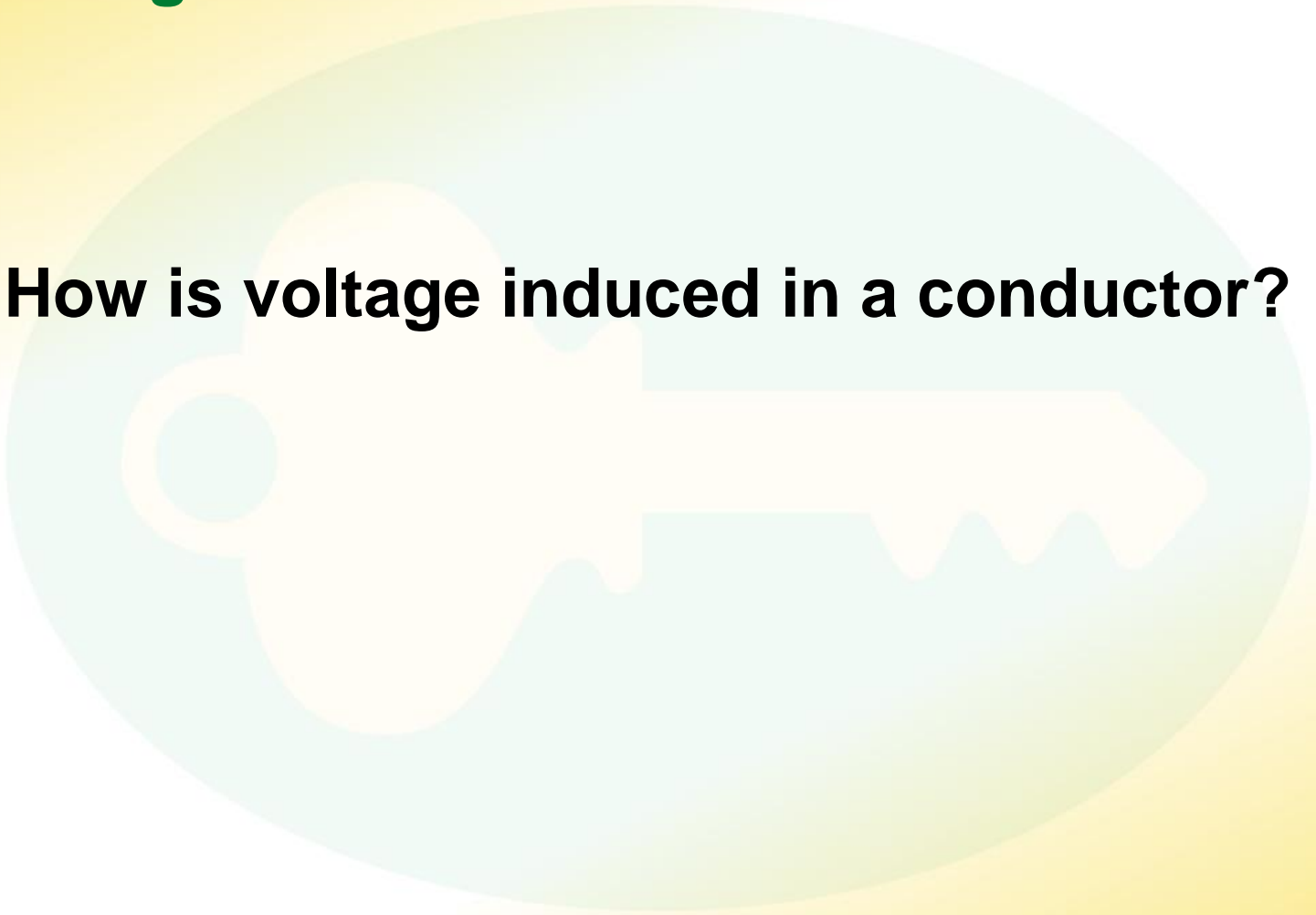


Generating Electric Current



How is voltage induced in a conductor?



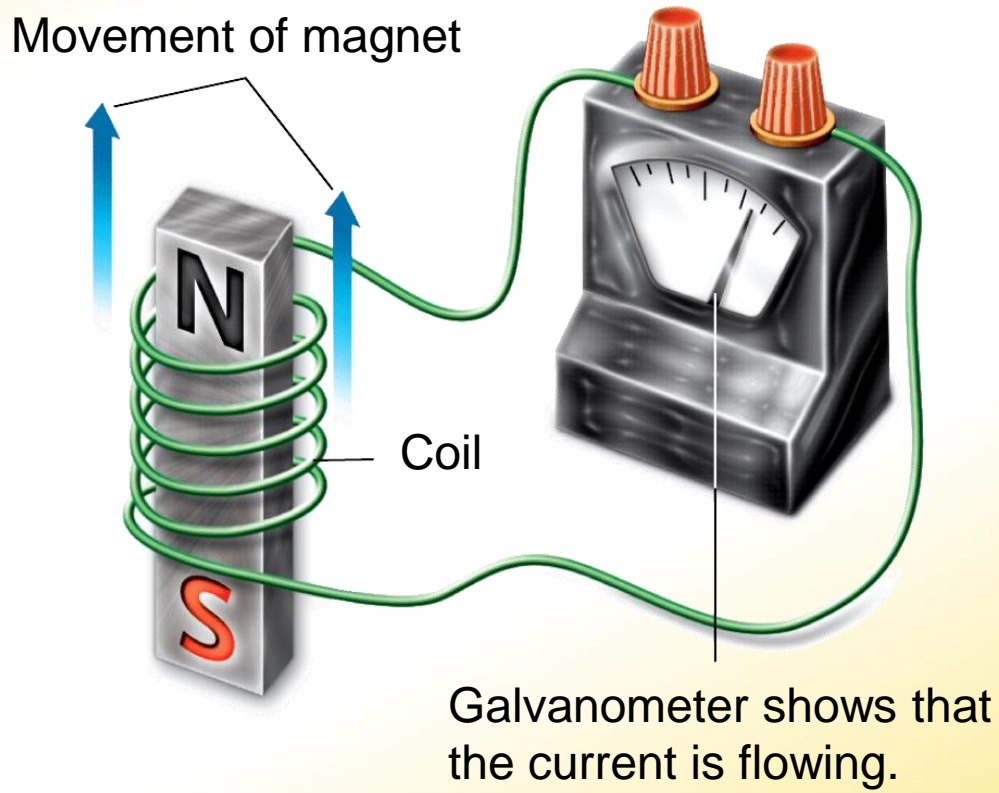
Generating Electric Current

A magnetic field can be used to produce an electric current.

- **Electromagnetic induction** is-

Generating Electric Current

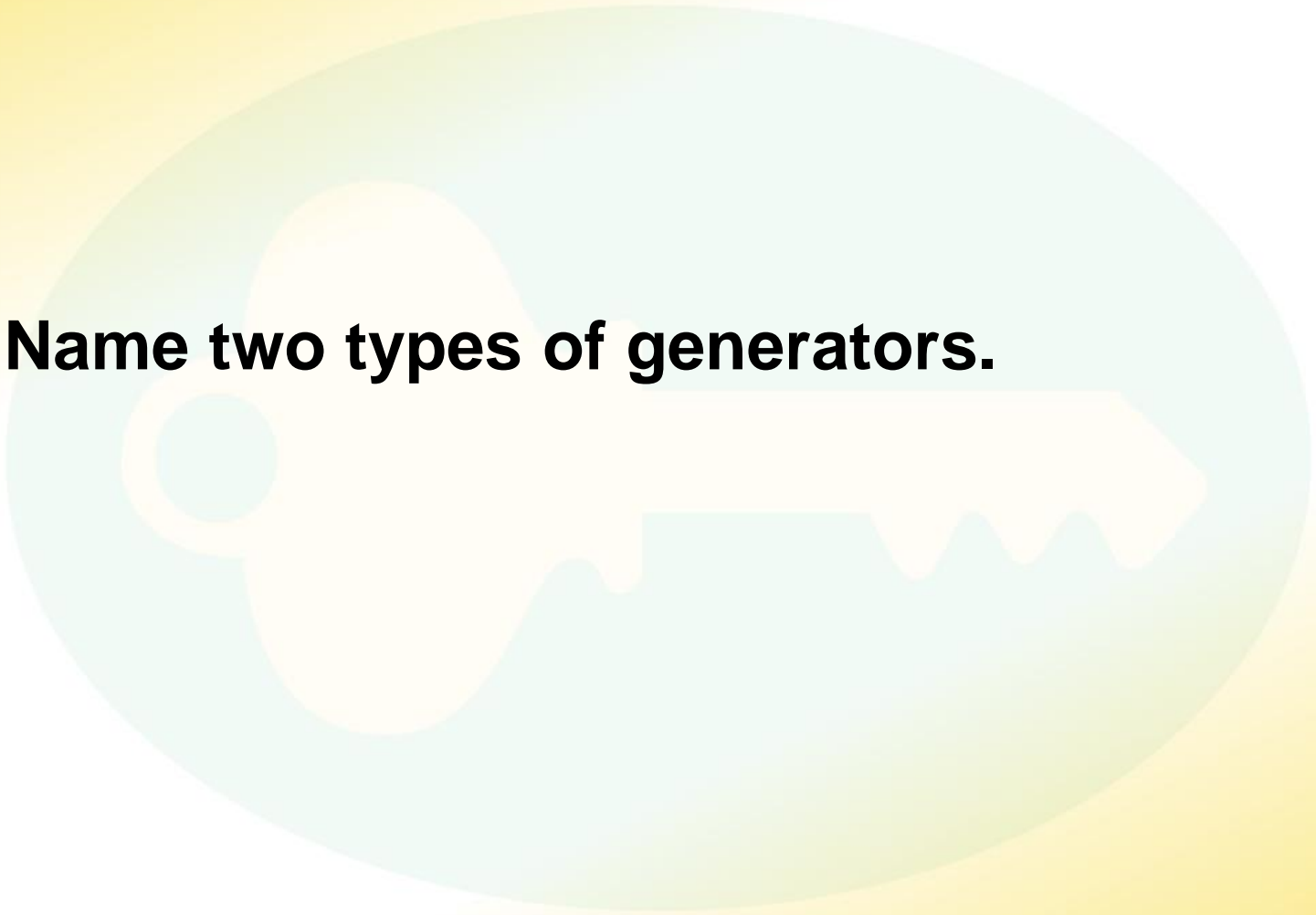
According to Faraday's law -



Generators



Name two types of generators.



Generators

Most of the electrical energy used in homes and businesses is produced at large power plants using generators.

- A **generator** is-

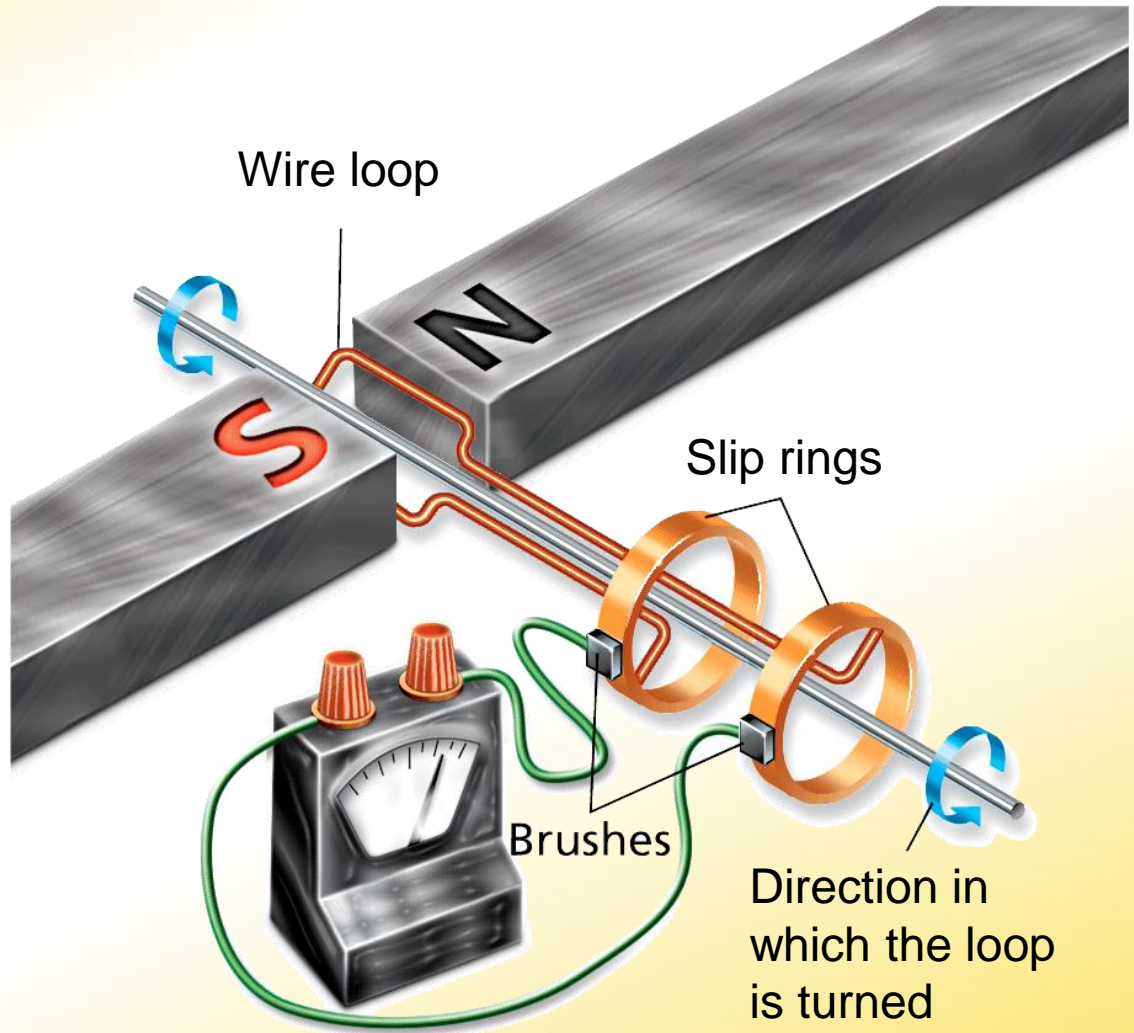
Generators

AC Generators

An AC generator produces -

Generators

In a simple AC generator -



Generators

Small generators provide power -



Generators

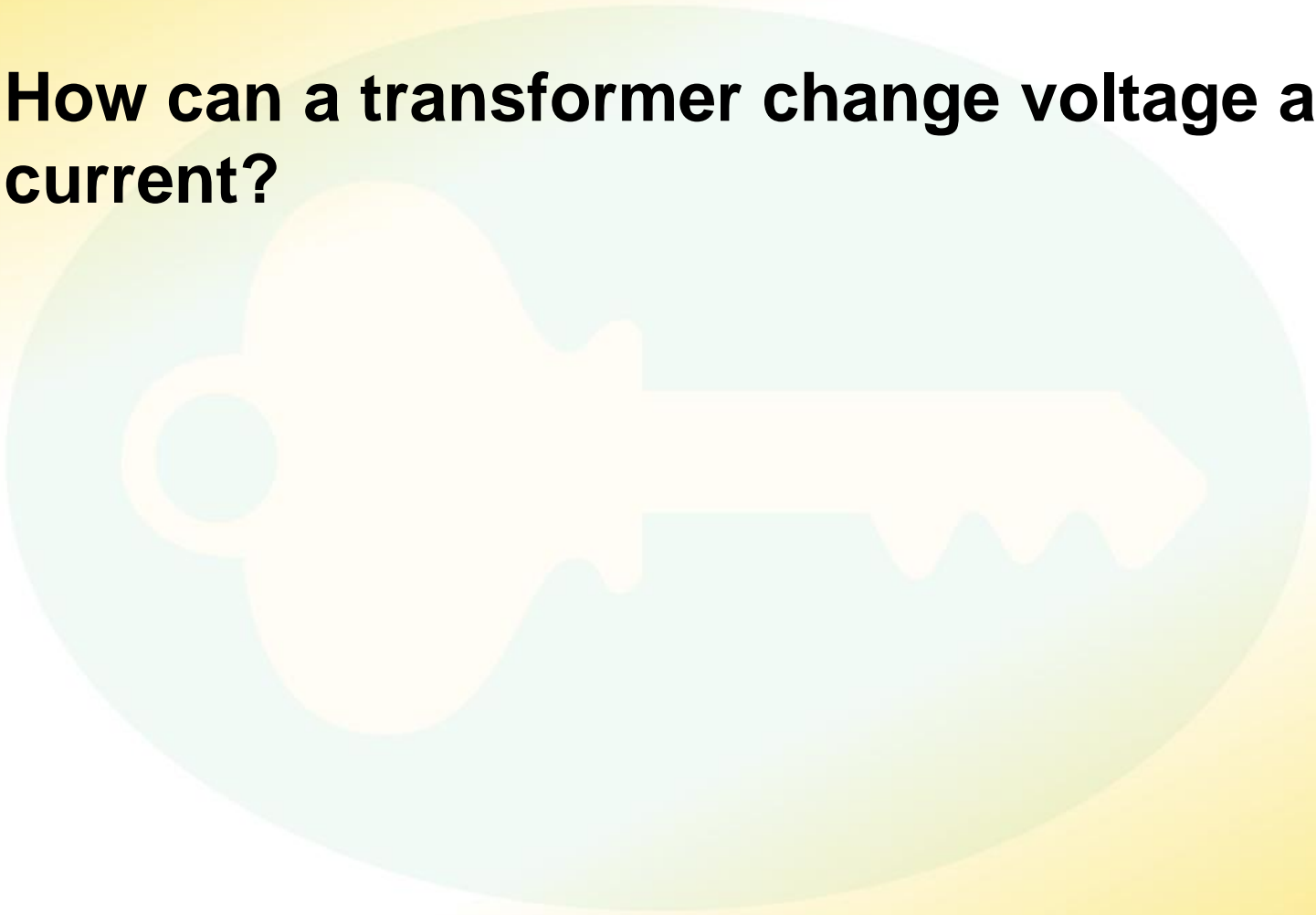
DC Generators

A DC generator produces -

Transformers



How can a transformer change voltage and current?



Transformers

Electrical energy from power plants is -

Transformers

Changing Voltage and Current

A transformer has -

Transformers

The number of turns in-

Transformers

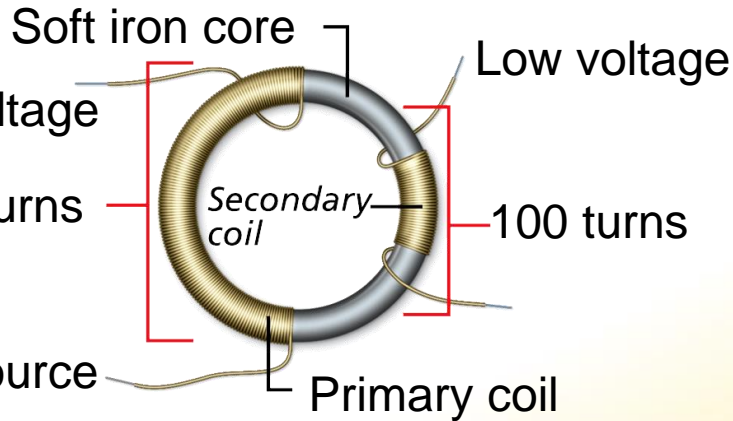
Transformers are-

Transformers

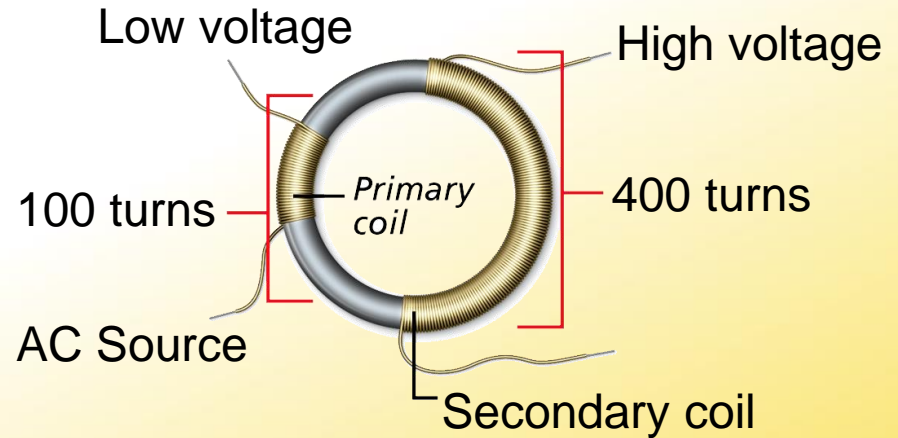
Transformers -



A Step-down Transformer



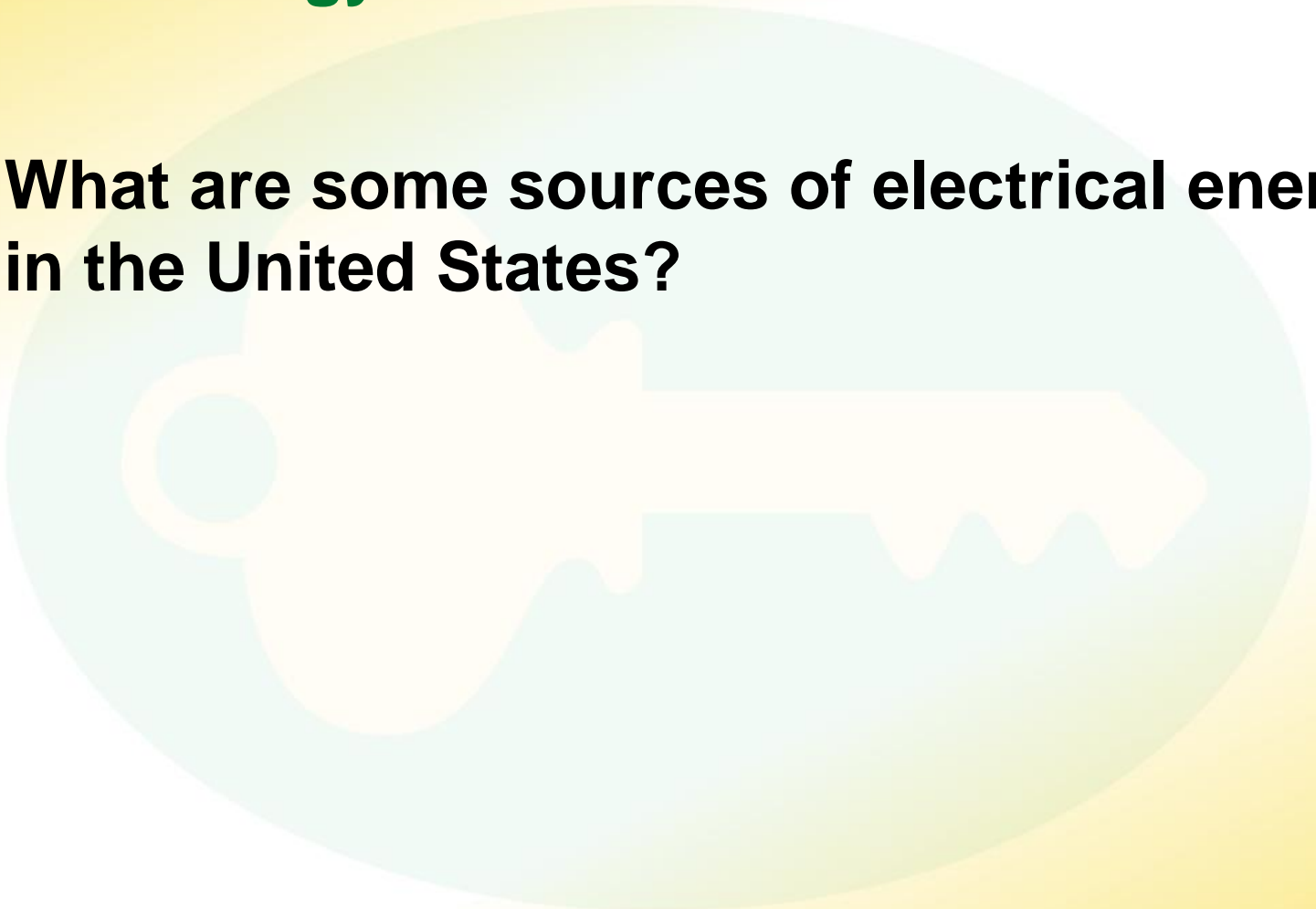
B Step-up Transformer



Electrical Energy for Your Home



What are some sources of electrical energy in the United States?

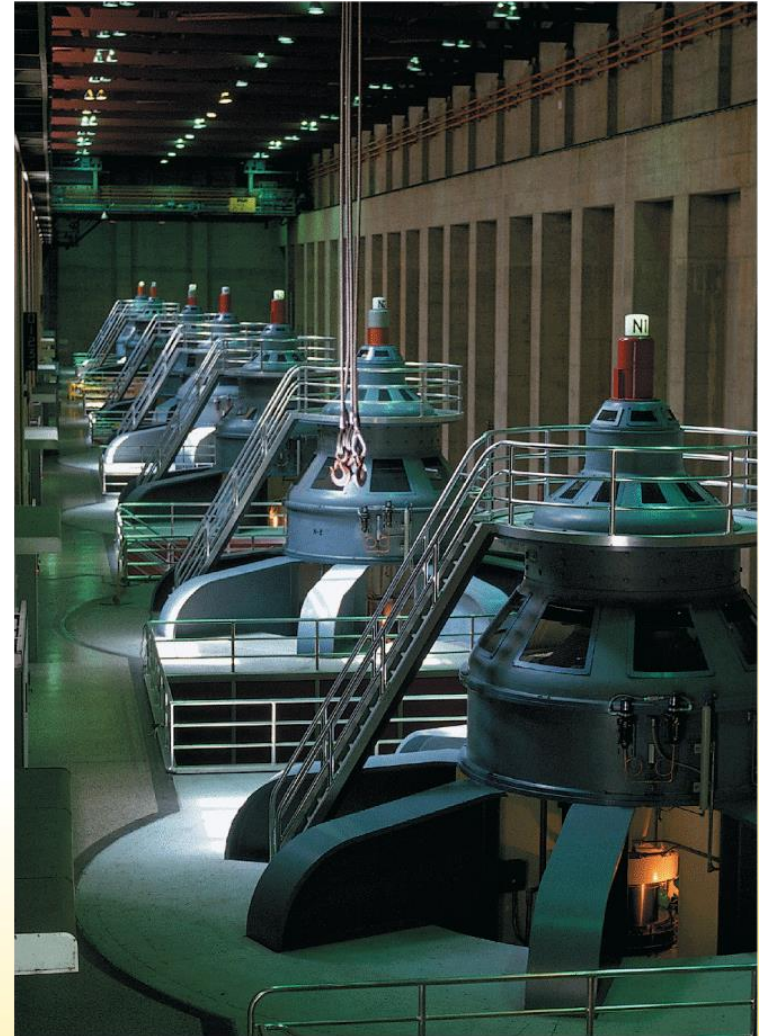


Electrical Energy for Your Home

A **turbine** is -

Electrical Energy for Your Home

A turbine turns -

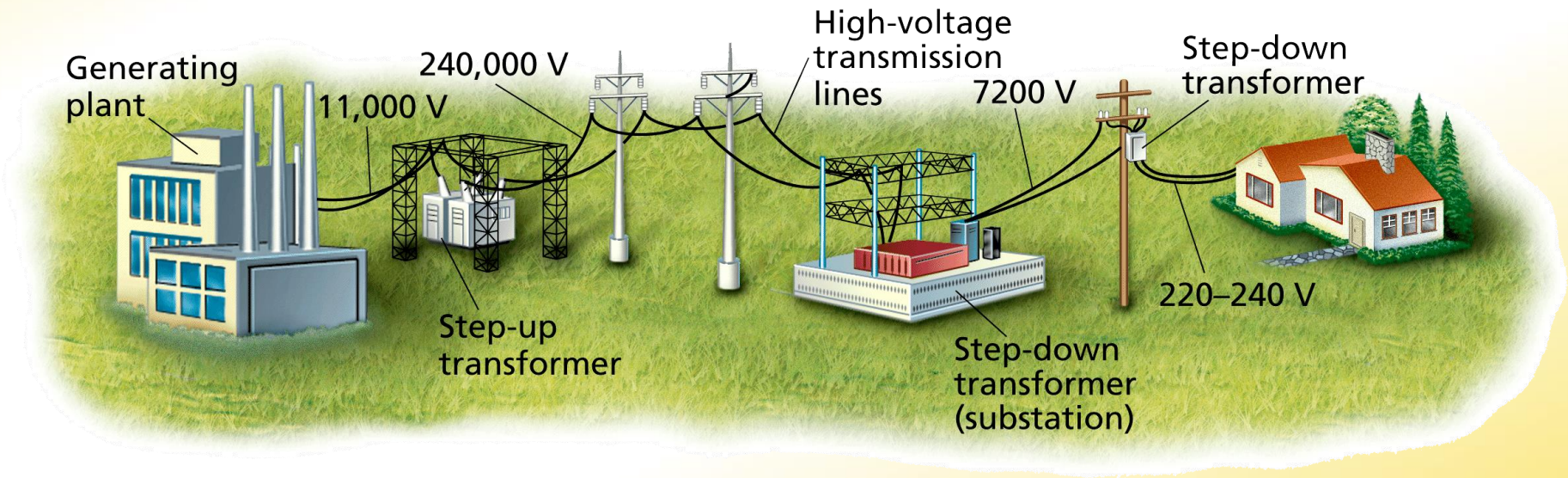


Electrical Energy for Your Home

A power plant -

Electrical Energy for Your Home

Voltage is -



Assessment Questions

1. In a DC generator, the commutator
 - a. generates an electric current.
 - b. converts an alternating current to a direct current.
 - c. reduces the voltage.
 - d. reverses the direction of the direct current.

Assessment Questions

2. A transformer has 400 turns on the primary coil and 1600 turns on the secondary coil. What is the output voltage if the input is 1,000 volts?
- a. 250 V
 - b. 500 V
 - c. 2,000 V
 - d. 4,000 V

Assessment Questions

3. Which property would you want to increase in transmitting electrical energy as efficiently as possible over long distances?
- a. current
 - b. voltage
 - c. resistance
 - d. insulation

Assessment Questions

4. In electromagnetic induction, an electric current is induced by the motion of a magnet relative to a magnetic field.

True

False