

# How dependable electricity reaches you

Most of us take reliable electric power for granted. But do you know what's really involved in getting that power to you?

## Power Plant

At a generating plant, water is heated to steam using fuels such as natural gas, coal and oil; the steam turns turbines that turn generators to produce electric energy. In some areas, nuclear power or water flowing through hydroelectric dams powers the turbines.

## Step-Up Substation

Transformers at the generating plant increase the voltage up to 345,000 volts, so it can travel long distances over high-voltage transmission lines.

## High-Voltage Transmission Lines

These lines carry the electric energy over long distances. Insulators on the towers prevent the power from flowing to the towers or the ground.

## Transmission Substation

Transformers reduce the electric energy up to 69,000 volts, making it suitable for high-volume delivery over short distances.

## Large Industrial User

Most industries need 2,400 to 4,160 volts to run heavy machinery. They usually have their own substation at the facility.

## Consumer-Owned Renewable Generation

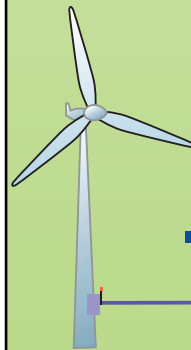
A wind turbine, solar panel array or methane digester is interconnected to the co-op's lines through a cut-off switch and other equipment. The switch disconnects the turbine from the line to ensure the safety of linemen working during outages and regular maintenance projects.

## Distribution Lines

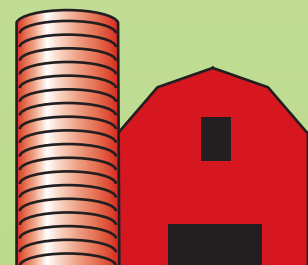
Lines belonging to local electric co-ops carry electricity to transformers that reduce power levels to 120/240 or 120/208 volts for use in schools, farms, homes and small businesses.

## Local Distribution Substation

Local electric co-ops operate several of these substations to reduce electricity to 7,200-14,400 volts for distribution to their members.



Schools



Farms



Homes



Small Businesses