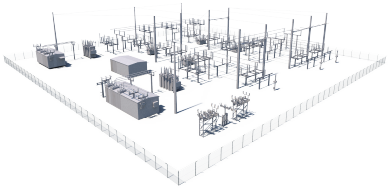
HOW THE SYSTEM WORKS

APPALACHIAN POWER
An AEP Company

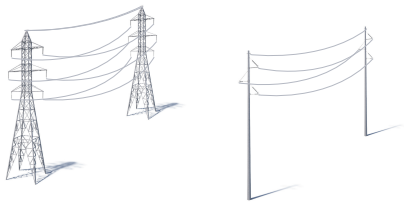
1. Generation Stations:

A generation station produces power to be transported long distances through transmission lines.



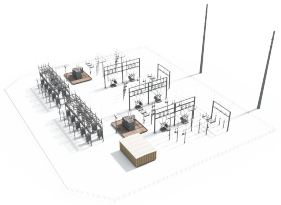
2. Transmission Substations:

Substations direct the flow of electricity and either decrease or increase voltage levels for transport.



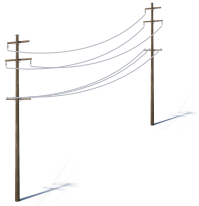
3. Transmission Lines:

We typically use 765-kilovolt (kV), 500-kV, 345-kV, 138-kV and 69-kV transmission lines to move power a range of distances.



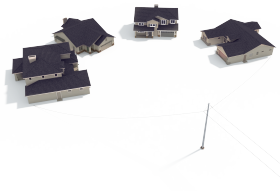
4. Distribution Substations:

Substations transform 69-kV and 138-kV electricity into lower distribution-level voltages such as 34.5-kV, 12-kV, or 7.2-kV.



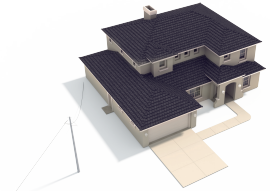
5. Primary Distribution:

These main lines (also called circuits) connect substations to large parts of the community.



6. Lateral Distribution:

These lower-capacity lines deliver electricity to neighborhoods and other smaller groups of customers.



7. Individual Service:

Smaller transformers step down voltage to levels customers can use. Individual homes typically use 120/240 volts.

To use an analogy, electric transmission is like our national road system. Three kinds of power lines exist between power plants, homes and businesses:

- High-voltage lines are like interstate highways.
- Local transmission lines are like four-lane roads.
- Distribution lines are like two-lane roads that eventually connect to a driveway.