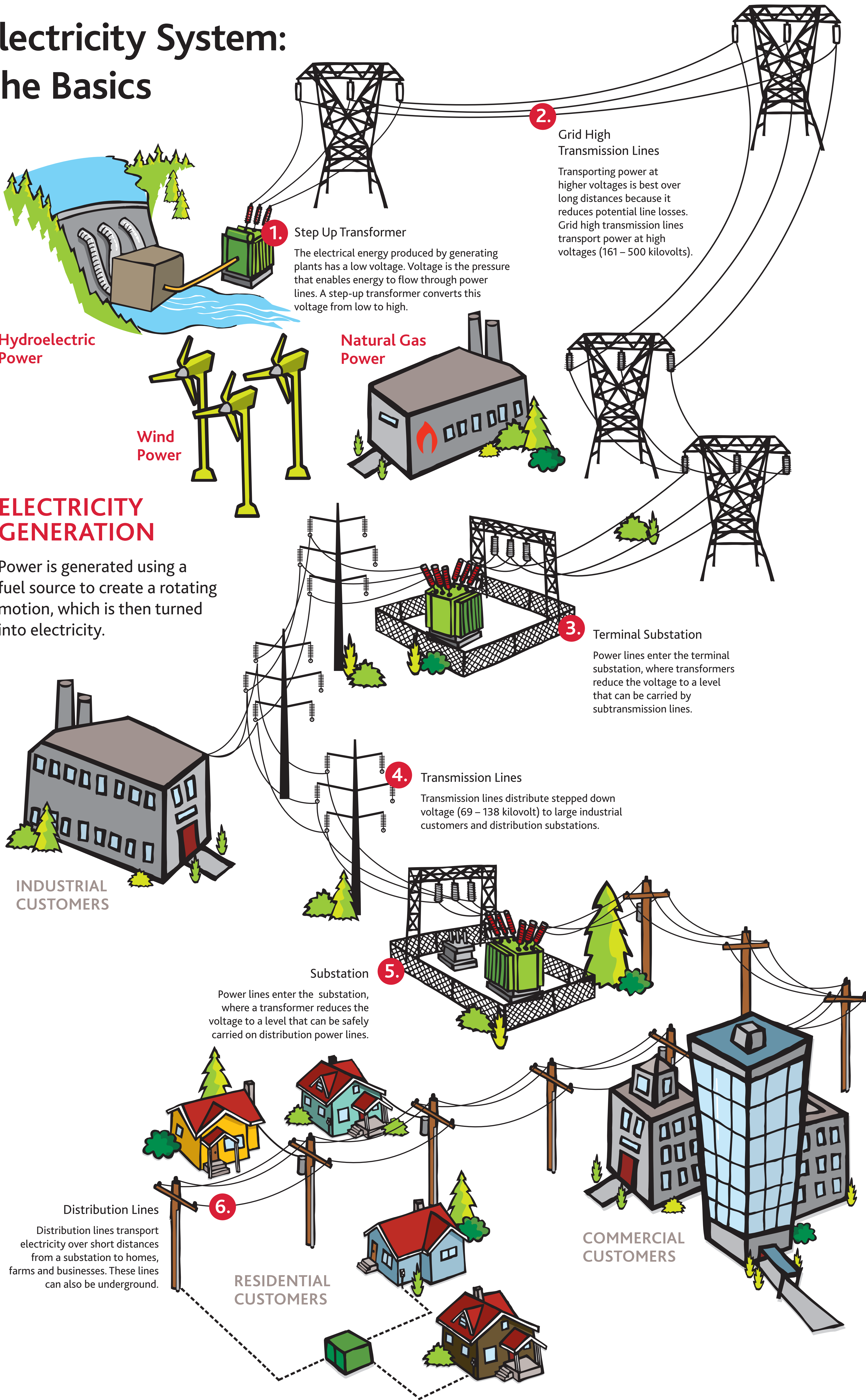


# Electricity System: The Basics



**1. Step Up Transformer**

The electrical energy produced by generating plants has a low voltage. Voltage is the pressure that enables energy to flow through power lines. A step-up transformer converts this voltage from low to high.

**2.**

**Grid High Transmission Lines**

Transporting power at higher voltages is best over long distances because it reduces potential line losses. Grid high transmission lines transport power at high voltages (161 – 500 kilovolts).

**Hydroelectric Power**

**Wind Power**

**Natural Gas Power**

**ELECTRICITY GENERATION**

Power is generated using a fuel source to create a rotating motion, which is then turned into electricity.

**3.**

**Terminal Substation**

Power lines enter the terminal substation, where transformers reduce the voltage to a level that can be carried by subtransmission lines.

**4.**

**Transmission Lines**

Transmission lines distribute stepped down voltage (69 – 138 kilovolt) to large industrial customers and distribution substations.

**INDUSTRIAL CUSTOMERS**

**5.**

**Substation**

Power lines enter the substation, where a transformer reduces the voltage to a level that can be safely carried on distribution power lines.

**6.**

**Distribution Lines**

Distribution lines transport electricity over short distances from a substation to homes, farms and businesses. These lines can also be underground.

**RESIDENTIAL CUSTOMERS**

**COMMERCIAL CUSTOMERS**