

ELECTRICITY 101

Electricity powers virtually everything we do. It's essential to our everyday lives, activities and communities. Knowing how electricity is generated and distributed helps us understand the vital importance of this critical infrastructure as we continue building the grid of the future.



Energy Generation

The electricity we use every day is generated in power plants by converting natural resources such as water, sun, coal, oil, natural gas and wind into electrical power.

There are two general categories of natural resources – nonrenewable and renewable. A nonrenewable resource is not capable of being renewed, replaced, or takes a very long time to replace. A renewable resource is capable of being renewed or replaced.

Electricity is generated by a large magnet that spins inside coils of wire. High-pressure steam, water or wind is used to turn a turbine – a large fan-like machine – attached to the generator to get the magnet spinning. As the magnet rotates inside the loops of wire, electric current is produced.

Nonrenewable resources



Coal Plant



Gas & Oil Plants

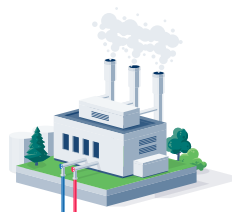


Uranium

Renewable resources



Wind & Solar Energy



Geothermal Energy

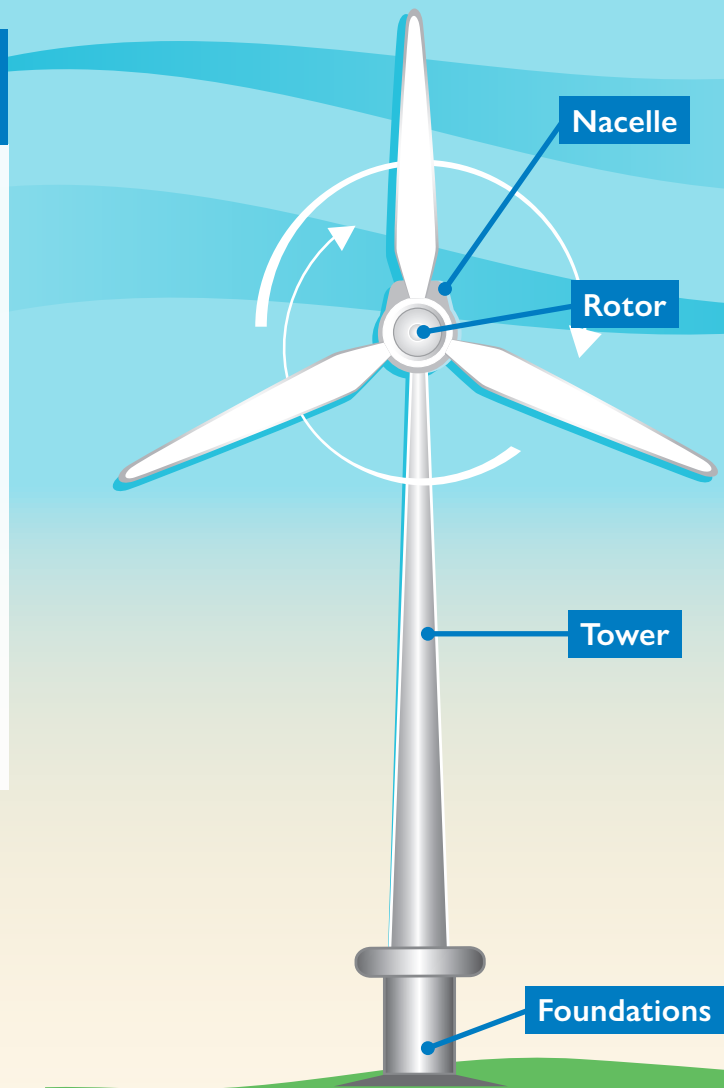


Hydropower

Wind Generation

Have you ever seen large wind turbines along the road? These wind turbines convert the energy of wind into electrical energy. As the wind spins the blades, a central rotor rotates, which works to spin generators, creating electricity.

When it comes to wind turbines, bigger is better, as the enormous size of the towers and blades help them take full advantage of the wind, by allowing the blades to rotate at slower speeds while still generating large amounts of electricity. The slower speed is also safer for wildlife and reduces noise levels.



The Electrical Grid

Whatever the source, once electricity is generated, it's sent through a vast network of high-voltage transmission lines to a substation in your area where the high-voltage power is decreased. From there it's delivered to our homes and businesses using overhead or underground distribution lines.

This network of transmission lines, distribution lines and substations helps power our lives each day. For your safety, please keep yourself and anything you are handling at least 10 feet away from power lines. For details, visit [PacificPower.net/Safety](https://www.pacificpower.net/Safety).

