

# **General process of power generation at a base station**





## Overview

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Steam turbineMost traditional power plants make energy by burning fuel to release heat. For that reason, they're called thermal (heat-based) p.

How does a power station generate electricity?

The huge generator at a power station is also known as an alternator. The electromagnets (the rotor) are rotated by turbines while the coils and iron core (the stator) are at rest. Figure shows a block diagram for the generation of electricity in a thermal power station that uses a non-renewable energy resource.

What is electricity generation?

This page focuses on electricity generation —the creation of electricity from another energy source. For example, the energy stored in chemical bonds within coal can be released via combustion and used to drive steam turbines inside power plants or the kinetic energy of the wind can be used to spin a wind turbine.

How do electricity generators work?

Most U.S. and world electricity generation is from electric power plants that use a turbine to drive electricity generators. In a turbine generator, a moving fluid—water, steam, combustion gases, or air—pushes a series of blades mounted on a rotor shaft. The force of the fluid on the blades spins (rotates) the rotor shaft of a generator.

How does a thermal power station generate electricity?

The high-pressure steam rotates the turbines. The rotor connected to the turbines rotates and very large voltages are induced in the stator. A typical generator can produce voltages up to 25 kV. Figure gives a block diagram of the energy conversion in the generation of electricity at a thermal power station.



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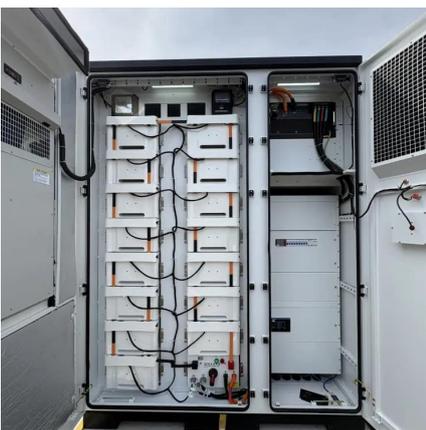
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