

# How does an AC generator store energy





## Overview

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How do AC generators work?

They work on the principle of electromagnetic induction, using mechanical energy to produce alternating current. The key components of an AC generator, such as the rotor, stator, slip rings, and brushes, work together to convert mechanical energy into electrical energy.

What is an AC generator?

An AC generator, also known as an alternator, plays a crucial role in converting mechanical energy into electrical energy through the principle of electromagnetic induction. This device is fundamental in power generation systems across homes, industries, and power plants.

How does a generator generate electricity?

**Mechanical Energy Input:** The generator's rotor is rotated by a mechanical source, such as an engine or turbine. This mechanical energy is the driving force behind the generation of electricity. **Magnetic Field Interaction:** As the rotor spins, the coil of wire (armature) cuts through the magnetic field produced by the stator.

Why are AC generators important?

AC generators are indispensable in multiple sectors: **Electric Power Plants:** Large-scale synchronous generators provide electricity to the national grid. **Backup Generators:** Portable and standby generators use AC generation to ensure uninterrupted power during outages.



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An alternating current (AC) generator transforms mechanical energy into electrical energy. This process produces alternating electrical power, as alternating voltage and current. AC ...

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### AC Generator: Principle, Working, Diagram & Uses for Class 12

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