

# AC vs. DC:

## What's the difference?

You've probably heard of AC/DC, the famous Australian rock and roll band. But did you know they got their name from the electricity terms Alternating Current and Direct Current?

Both Alternating Current (AC) and Direct Current (DC) are names for a type of electric current flowing in a circuit. Here's the difference:

- Direct Current (DC) indicates an electric current flowing in only one direction.
- Alternating current (AC) occurs when the electric current changes direction periodically. The voltage (what makes electric charges move, also known as the electromotive force or EMF ) also reverses periodically, causing the direction changes of the current.

### The History of the Currents

In the late 1800s, Thomas Edison and Nikola Tesla were competing with each other in what is commonly known as the "War of the Currents." Edison was responsible for promoting Direct Current, but it wasn't easily converted to higher or lower voltages.

Tesla asserted that Alternating Current would solve the problem of voltages. AC current is converted to different voltages through the use of a transformer. AC largely won out over time, and even today most home devices require the use of AC.

Because new methods are available for converting it into different voltages, DC power is making a bit of a comeback. Computers, LEDs, solar cells and electric cars all run on DC power. New technologies also use high voltage direct current (HVDC) to transport electricity over long distances with a reduction in the electricity losses experienced in past efforts to do so.

### What does this mean for your solar energy system?

Solar panels produce power in the form of Direct Current. Because the electricity used on the grid and in most household devices is Alternating Current, that DC power must be converted into AC electricity in order to be used in your home. That's the task of the inverter or microinverters in your solar system.

Direct Current is also how electrical energy is transferred to and from batteries, so if you have an Energy Storage System, the inverter converts electricity flowing from the battery into AC for the home.

For now, AC and DC co-exist in today's world – kind of like rock and roll.

When you go solar, ask for the brand you can trust: LG Solar



1. "The War of the Currents: AC vs. DC Power." Department of Energy. August 13, 2019. Web. <https://www.energy.gov/articles/war-currents-ac-vs-dc-power>

2. *Ibid.*

3. *Ibid.*

4. *Ibid.*



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