

Tesla AC vs Edison DC Power

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The famous story of the technological rivalry between Thomas Edison and Nikola Tesla in the late 1800s became known as the Current War. But, what was the battle between their concepts *about*?

In the simplest version of the story, Edison discovered, harnessed, and developed direct current (DC) electrical power. A DC flow runs continuously in the same direction. During the same period, Tesla was occupied with relentless attempts to capture and develop usable alternating current (AC) electrical flow.

The Problem with DC

Unfortunately, DC was difficult to manage for conversion to increase or decrease voltage. Meanwhile, Tesla was convinced that his alternating current concept could solve the voltage regulation conundrum. By contrast, Tesla's AC reverses its direction of flow many times per second (60 times per second in the U.S. applications of AC electricity). AC also can be comparatively easily converted to other voltages through the use of a transformer.

Who Will Light the World?

As you know, over time, Edison's DC application went on to become the standard model for electrical production and usage. But, Tesla's struggle to make his AC conception manageable and marketable was not comparably successful.

Edison began angling to protect the royalties that his DC patents earned, by actively attempting to convince the world that AC was useless. He tried to discredit the idea of AC production by claiming it was too dangerous. He held public electrocutions of stray

animals using AC to illustrate the supposed horrors of alternating current.

Niagara Falls Turns the Tide for AC in Buffalo

In the Current War of 1893, Westinghouse, with Tesla's AC, outbid General Electric, with Edison's DC, for the contract to power the Chicago World's Fair. In another groundbreaking win for Westinghouse later that year, the Niagara Falls Power Company contracted with the company to generate AC power from the falls for Buffalo, NY.

Westinghouse had licensed the patent for the AC motor developed by Tesla. The Buffalo contract advanced the push to commercialize AC electricity. However, there was doubt that even the staggering force of the immense waterfalls could actually generate enough power to supply the entire population of Buffalo. But, on a November day in 1896, AC electricity from Niagara Falls lit up the city of Buffalo!

Tesla AC Goes Nationwide

Tesla was confident that his alternating current could power the whole eastern half of the country. With the spectacular successes in Chicago and Buffalo, it had become clear enough that AC had broad-scale applicability. So, the resilient GE jumped into the AC market too. It had also become pretty clear that alternating current had prevailed over the direct current alternative. Only in more recent times has DC power grown significantly again in use as a public resource and become more widely appreciated for its mass potential.

Who Ultimately Wins the Current War?

In 2022, the world's electricity continues to be mostly AC. However, many modern electronic technologies, including LED screens, computers, electric vehicles, and solar cells for solar panels all operate on DC power. Now that there are processes for converting DC to increase and decrease voltage, it has become a much more appealing option than in the past.

DC is a more stable current than AC. It can be transported with less loss of electricity. So, modern enterprises are adopting methods of utilizing high voltage direct current (HVDC) as a means to send electrical power across long distances.

So, it looks like the Current War goes on. But, it also appears this epic battle of ideas may end in peace in the foreseeable future. The struggle for the prevalence of DC or AC over the other is more likely to settle into a new order in the realm of electrification in which the two types of currents ultimately work *together*. It's fair to say that AC and DC will generate synergy in the modality of a combined system of parallel energy supplies they'll provide.

It's also probably fair to think that neither Tesla nor Edison would have imagined that one day in the distant future their warring ideas would effectively *partner* in integrated AC/DC technology.

What's Solar Got To Do With DC & AC?

Solar inverters are the components of a solar panel system that collect one form of power and convert it into the other. So, in your home's solar energy system, your solar power inverters are the parts that make the solar energy collected by your panels usable in your home.

The inverters convert the DC electrical energy generated by your solar panels to AC electricity that can be utilized by your home's lighting, heating and cooling system, appliances, electronics, etc. They make it possible to use the sun's energy to produce electricity.

Why Choose Solarise Solar?

Solarise Solar helps thousands of Colorado residents every year get the best value in residential and commercial solar panel systems and installation. In 2022, you can have your home solar panels installed and start producing your own electricity for no upfront cost with low-interest financing, and a 30-year solar panel warranty.

For information on solar equipment for your home or business, call Solarise Solar at (719) 792-7725, or contact us online to reach the solar experts for your area.
