

# NEXT-TIME QUESTION

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## Answers:

Yes, Ohm's law applies to power lines.

The high voltages that characterize power lines are between adjacent wires, not between the ends of the wires. The relatively low voltage across the ends of a single wire and low current accounts for small power dissipated in the wire. The much greater power delivered by the lines, however, is the voltage difference *between adjacent wires* multiplied by the current in them. This power is transmitted to the load, where currents and voltages are again in accord with Ohm's law.

Ohm's law even applies in the space between lines. Resistance of air between lines is normally too high to permit a flow of charge — but sometimes arcing does occur. Hence the wide space between lines.



In applying Ohm's law, it's important that the voltage and current are applied to the same part of the circuit.

