

# EMF



Any device that uses or carries alternating current (AC) including everyday appliances, lighting and wiring, as well as the power lines that serve your home, creates electric and magnetic fields, or EMF. There are even natural electric and magnetic fields that are created by the Earth's atmosphere.

**Electric Fields** are produced by voltage. Voltage is the pressure behind the flow of electricity and creates electric fields around any electrical device that is plugged in, even when it's not operating. Appliances in homes and workplaces are the major source of indoor electric fields, while power lines are the major source of outdoor electric fields.

**Magnetic Fields** are produced by current, which is the flow of electricity to and within electrical devices when turned on. The Earth has a magnetic field that can be detected with a compass. The strength of the magnetic field decreases rapidly as the distance from the source increases. Magnetic fields from wiring and/or appliances found in homes can be as high, or even higher, than fields from a 765-kV line. Typical everyday background magnetic field levels are below 2 milligauss (mG).

## STRAY VOLTAGE

EMF must not be confused with stray voltage. Stray voltage is caused by electrical problems. For example, on a farm, stray voltage problems usually arise from two possible sources: the farm's electrical system or the power grid located nearby. Stray voltage often results from faulty grounding of farm equipment or current leaking from defective machinery.

## RESEARCH ON EMF

A considerable amount of research over the last several decades has focused on whether magnetic fields from power lines adversely affect the health of those living near the lines. The research findings have not found persuasive evidence that exposure to EMF poses adverse health risks to animals, plants, or people. These research findings are supported by experts around the world, including the National Institute of Environmental Health Sciences, The National Radiological Protection Board and a number of other scientific panels comprised of interdisciplinary EMF experts who considered all research to date.

## MORE INFORMATION

The following includes credible, third-party sources that provide balanced information.

### National Cancer Institute

[www.cancer.gov/cancertopics/factsheet/risk/magnetic-fields](http://www.cancer.gov/cancertopics/factsheet/risk/magnetic-fields)

### National Institute of Environmental Sciences, National Institute of Health

[www.niehs.nih.gov/health/topics/agents/emf](http://www.niehs.nih.gov/health/topics/agents/emf)

### World Health Organization's International EMF Project

[www.who.int/peh-emf/project/en](http://www.who.int/peh-emf/project/en)

### Western Area Power Administration

Electric and Magnetic Fields: Facts  
[www.wapa.gov](http://www.wapa.gov) and search "EMF"

### Anticipated Magnetic Field Strength of Greentown-Reynolds Line vs. Common Appliances

Measured in milligauss (mG)

<b>Voltage</b>	765-kV
<b>Directly under the line</b>	8 mG (avg. at typical load)
<b>At edge of right-of-way</b>	3 mG (avg. at typical load)
<b>Appliance</b>	<b>At working distance</b>
Hair Dryer	300 mG
Electric Shaver	100 mG
Vacuum Cleaner	300 mG
Microwave	10-200 mG
Fluorescent lights	2-40 mG

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