

Typical magnetic fields measured at various distances from common electrical appliances & power lines.

Appliances	6 inches	12 inches	24 inches	48 inches
Microwave Oven	100 - 300	1 - 200	1 - 30	* - 20
Hair Dryer	1 - 700	* - 70	* - 10	* - 1
Electric Range	20 - 200	* - 30	* - 9	* - 6
Video Display Terminal (PCs with Color Monitors)	7 - 20	2 - 6	1 - 3	*

Transmission Lines (kV)	Right of Way	100 feet	200 feet	300 feet
115 Kilovolts	30	2	0.4	0.2
230 Kilovolts	58	7	1.8	0.8
500 Kilovolts	87	13	3.2	1.4

Source: EMF In Your Environment, epa.com

Notes: The asterisk (\*) indicates measurement same as background fields. All measurements are in milliGauss (mG). Transmission line values are typical, average usage values at 3.3 ft above ground.

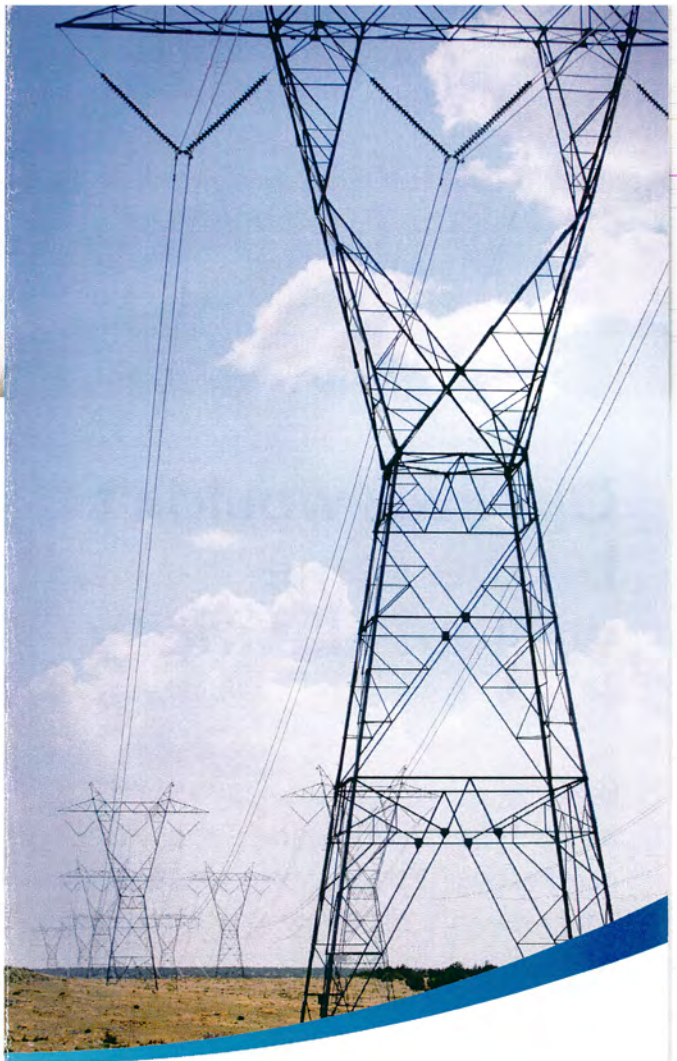


To learn more about EMFs please visit the websites below, which contain information from independent parties.

The National Institute of Environmental Health Sciences  
[niehs.nih.gov/health/topics/agents/emf/](http://niehs.nih.gov/health/topics/agents/emf/)

World Health Organization  
[who.int/peh-emf/en/](http://who.int/peh-emf/en/)

For more information, please contact your local APS representative.



# Electric and Magnetic Fields

(EMF)





## Our lives wouldn't be the same without electricity.

We rely on electricity on a daily basis to provide basic needs such as lighting, cooling and heating for our homes. Our economy depends on electricity for communication, transportation and industrial needs. Electric and magnetic fields, often referred to as EMFs, occur everywhere in our society where electricity is used.

### ELECTRIC AND MAGNETIC FIELDS

Whenever electricity flows through a wire, it creates both electric and magnetic fields. Electric fields are created by voltage, which is needed to send power through a wire. Magnetic fields are a function of the amount of current flowing through a wire. Together, they are called electromagnetic fields.

For example, a toaster plugged into an electrical outlet creates an electric field—even if that toaster is turned off. Turning on the toaster moves the electricity. It's this flowing current that generates magnetic fields. Higher voltage produces higher electric fields and higher currents create higher magnetic fields.

Magnetic fields are measured in milligauss (mG) while electric fields are measured in kilovolts per meter (kV/m). Magnetic fields penetrate solid materials while electric fields can be easily shielded by such items as vegetation, buildings and animals. Both fields, however, rapidly lose intensity with distance from a source.

EMFs are everywhere in our electricity-reliant society. Both high- and low-voltage power lines, home electrical wiring, cooling and heating systems, appliances, power tools and other electrical “necessities” create EMFs of varying strengths.

### EMFs and Health Effects

Scientists have been studying EMFs and their possible link to health effects since the 1970s. Electric utilities alone have spent millions of dollars to study the effects of EMFs on humans, animals and plants. Major universities, national laboratories, the Electric Power Research Institute, the National Cancer Institute and the Department of Energy have all been involved in EMF research activities. To date, the results of this research have not shown a cause-effect relationship between EMF and human health. Consistent with these scientific conclusions, EMF exposure standards have not been developed by the federal government or the state of Arizona.

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#### Did you know?

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Electricity is the single biggest element that characterizes the many conveniences of today's life style.