



Facts About Smart Meters & Radio Frequency Emissions

Your concerns about radio frequency (RF) emissions are important. The intent of the information below is to help you better understand smart meters and provide reassurance about the health and safety questions often associated with them.

How do Smart Meters work?

Smart electric meters measure your usage throughout the day. The meters transmit data to EWEB via low-powered radio signals about once an hour. The meters emit RF only when they transmit data, which, in total, is typically less than one minute per day.

Radio Frequency Power Density Levels of Common Devices (in microWatts/cm²) *based on average usage

NON-COMMUNICATING

**MANUALLY READ
SMART METER**
ANY DISTANCE



0
microWatts

**FM RADIO /
TELEVISION**
NEARBY



0.005 - 1
microWatts

WIFI ROUTER
3 FEET AWAY



0.2 - 1
microWatts

**COMMUNICATING
SMART METER**
4 FEET AWAY



5
microWatts

MICROWAVE
2 FEET AWAY



50 - 200
microWatts

**SMART
PHONE
AT EAR**



1000 - 5000
microWatts

Data sources:

Xylem/Sensus, supplier of EWEB smart meters

Radio-Frequency Exposure Levels from Smart Meters: A Case Study of One Model <https://www.epri.com/research/products/1022270>

SmartGrid Consumer Collaborative, <https://smartenergycc.org/download/seccs-radio-frequency-and-smart-meters-fact-sheet/>

Scientific Research About Smart Meters and Health

- A study by Washington State University determined the amount of energy absorbed from smart meter radio frequency is substantially less than the Federal Communications Commission (FCC) safety guidelines, even when a person stands close to a meter.
- Based on its review of scientific literature, The World Health Organization concluded there is no convincing evidence that the weak RF signals produced by smart meters are harmful to human health.
- According to a study conducted by the California Council on Science and Technology, “wireless smart meters result in much smaller levels of RF exposure than many existing common household electronic devices, particularly cell phones and microwave ovens.”

Scientific Research About Smart Meters and Health (*continued*)

For over 50 years, researchers have studied the potential health impacts of RF energy. With the expansion of cell phone use in the last several decades, experts have published numerous studies about RF energy and cell phones. Research specific to advanced meters concludes that RF energy emitted from them is much lower than from cell phones.

Reputable organizations across the world have reviewed the scientific literature about RF energy. The conclusion among them is **smart meters do not result in adverse health impacts**.

Your safety is important, and we will continue to review scientific research about the impacts of RF energy.

Scientific Literature

Washington State University

- Zhou, L. & Schneider, J. B. (2012). A Study of RF Dosimetry from Exposure to an AMI Smart Meter. *IEEE Antennas and Propagation Magazine*, Vol. 54, No. 6

World Health Organization

- Electromagnetic Fields and Public Health: Base Stations and Wireless Technologies Backgrounder (2006). Retrieved from <https://www.who.int/teams/environment-climate-change-and-health/radiation-and-health/non-ionizing/base-stations-wireless-technologies>
- Electromagnetic Fields and Public Health: Mobile Phones (2014). Retrieved from who.int/mediacentre/factsheets/fs193/en/

European Health Risk Assessment Network

- Valberg, P.A., van Deventer, E., Prepacholi, M.H. (2007). Workgroup Report: Base Stations and Wireless Networks – Radiofrequency (RF) Exposures and Health Consequences. *Environmental Health Perspectives*, vol. 115 (number 3), pages 416-424. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1849947/>

International Commission on Non-Ionizing Radiation Protection

- Swerdlow, A., Feychting, M., Green, A.C., Kheifets, L. Savitz, D.A. (2011). Mobile Phones, Brain Tumors, and the Interphone Study: Where Are We Now?, *Environmental Health Perspectives* (vol. 119), pages 1534-1538. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3226506/>

California Council of Science and Technology

- California Council of Science and Technology (2011). *Health Impacts of Radio Frequency Exposure from Smart Meters*. Retrieved from <https://ccst.us/publications/2011/2011smart-final.pdf>

Health Protection Agency (England)

- Health Effects from Radiofrequency Electromagnetic Fields. (2012). Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/333080/RCE-20_Health_Effects_RF_Electromagnetic_fields.pdf

European Commission

- SCENIHR Opinion on Potential health effects of exposure to electromagnetic fields (2015). Retrieved from https://health.ec.europa.eu/publications/potential-health-effects-exposure-electromagnetic-fields-emf_en

Electric Power Research Institute (EPRI)

- Radio-Frequency Exposure Levels from Smart Meters: A Case Study of One Model (February 2011). Retrieved from: <https://www.epri.com/research/products/1022270>

Manual Meter Reading

By default, smart meters transmit usage to EWEB without the need for technicians to come to your property monthly to read meter data. Communicating meters provide outage detection and other advanced services.

Most customers can elect to have their meters manually read. With **Manual Meter Reading**, EWEB will install a smart meter. After establishing system connection, the meter's communication functionality, including the radio transmission capability, will be turned off so that the meter does not transmit usage data to EWEB. This option requires a manual meter read, will include a monthly fee to be determined at a future date, and must be elected by contacting EWEB.