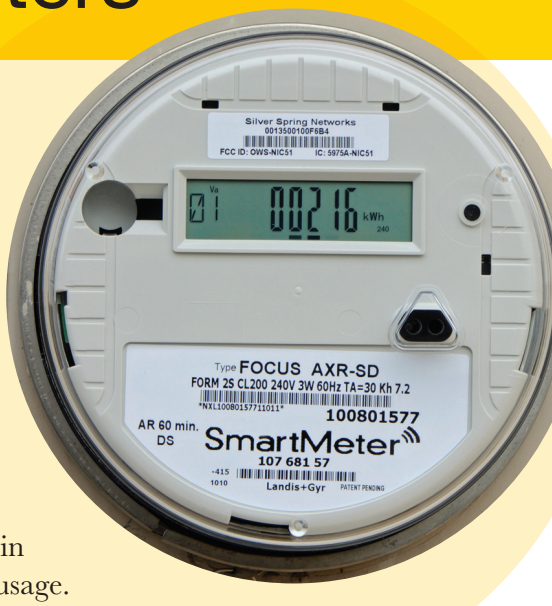
SMART ENERGY CONSUMER COLLABORATIVE

Radio Frequency and Smart Meters



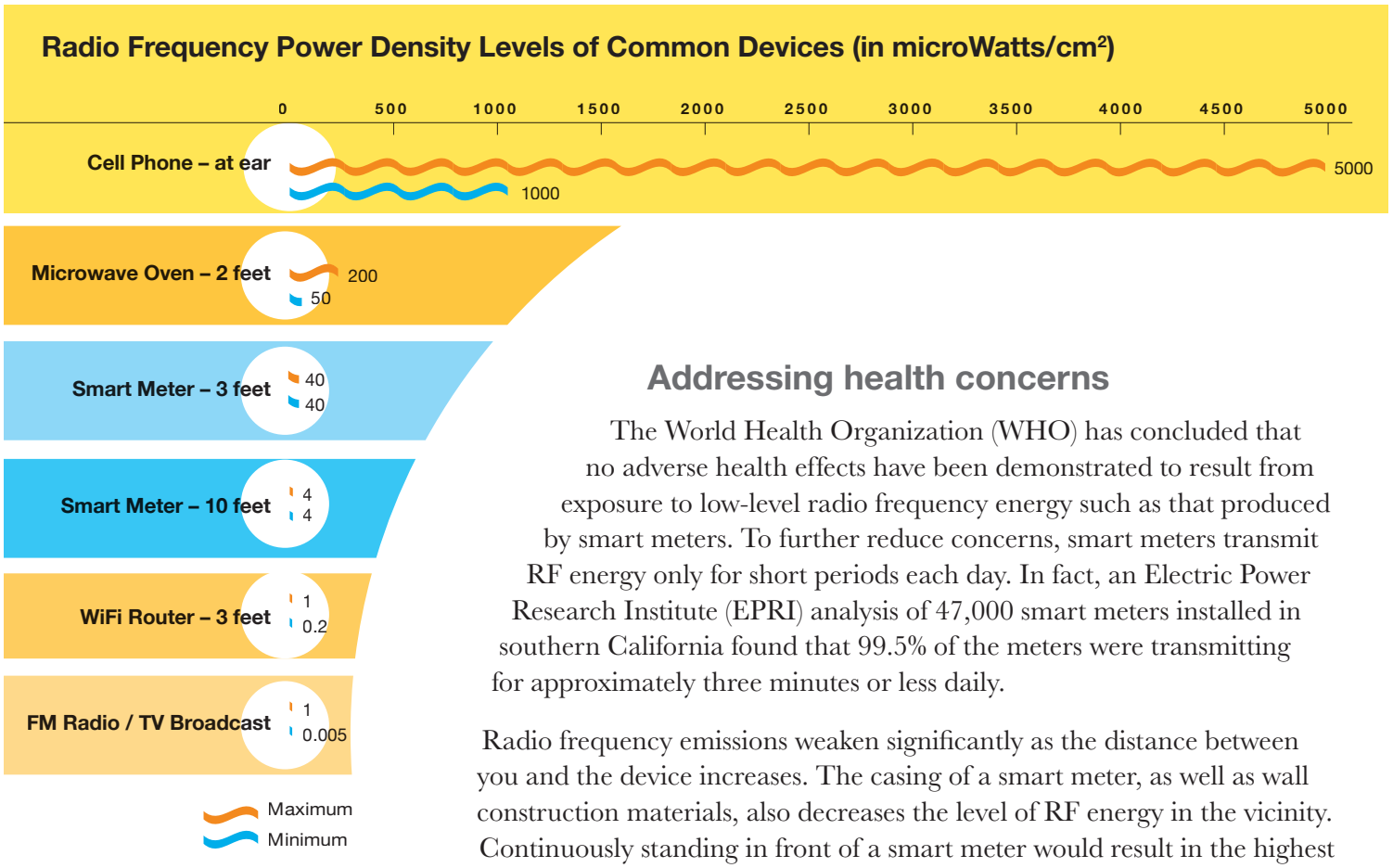
In most regions of the United States, key electric utility infrastructure is now over half a century old. It is no surprise, then, that this infrastructure is in need of major upgrades to keep up with our nation's ever-rising demand for power. One important step that electric utilities are taking to improve their distribution systems is to install smart meters. These devices earn the right to be called "smart" by making it easy for utilities—and consumers like you—to obtain accurate, real-time readings of electricity usage. With smart meter data, utilities can manage power distribution more efficiently to avoid overloading to the grid and the blackouts that follow. Even better, smart meters empower you to make informed, money-saving decisions about how and when you use electricity in your home and business.

Smart meters, which operate by transmitting and receiving information wirelessly, are a key element in the effort to update and bring electric systems into the 21st century. Nevertheless, some people have expressed concerns about the possibility of negative health effects from the radio frequency (RF) waves that smart meters use to communicate.

What are radio frequency waves?

Radio frequency waves are a form of electromagnetic energy. They move through space at the speed of light and can be man-made or occur naturally. RF waves are used for a variety of purposes, but most importantly, they are employed in telecommunications. Smart meters use low-energy radio frequency waves to transmit information across distances.

Every day, people use and keep nearby to them many devices that utilize radio frequency waves, including microwave ovens and cellular telephones. The Federal Communications Commission (FCC) sets RF limits and requires that all radio communicating devices be tested to ensure that they meet federal standards before they are allowed to transmit within the radio spectrum. Smart meters emit less radio frequency energy than many other commonly-used wireless devices which, like smart meters, are safe and FCC-approved.



About this figure: This figure depicts the radio frequency waves emitted by various common wireless devices. Source for starting measurements: Electric Power Research Institute (EPRI), Radio-Frequency Exposure Levels from Smart Meters: A Case Study of One Model (February 2011). The RF exposure for cellular phones shown in this graph is for comparison purposes only. Cellular phones are evaluated for compliance with FCC exposure standards on the basis of specific absorption rate (SAR) and not power density.

Addressing health concerns

The World Health Organization (WHO) has concluded that no adverse health effects have been demonstrated to result from exposure to low-level radio frequency energy such as that produced by smart meters. To further reduce concerns, smart meters transmit RF energy only for short periods each day. In fact, an Electric Power Research Institute (EPRI) analysis of 47,000 smart meters installed in southern California found that 99.5% of the meters were transmitting for approximately three minutes or less daily.

Radio frequency emissions weaken significantly as the distance between you and the device increases. The casing of a smart meter, as well as wall construction materials, also decreases the level of RF energy in the vicinity. Continuously standing in front of a smart meter would result in the highest exposure a person could experience, and even then the exposure would be approximately 70 times less than the FCC limits.

IN CONCLUSION...

Smart meters do not produce any negative health impacts. They emit a low level of radio frequency energy that is both FCC-approved and lower than the level of RF energy emitted by many other devices that are used daily by millions of people. At most, smart meters transmit radio frequency energy for only a few minutes each day, and that energy is reduced further by surrounding materials.

Smart meters are a very important step to improving the delivery of electricity for consumers. They will give you more insight into your energy usage and more control over your energy expenditures. Most importantly, smart meters will help create a more efficient, more reliable, and more sustainable electricity world for generations to come.

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Working for consumer-friendly, consumer-safe smart energy

SECC's mission is to serve as a trusted source of information on consumer's views of grid modernization, energy delivery and usage, and to help consumers understand the benefits of smart energy.

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