

## SMART METERS AND POSSIBLE HEALTH EFFECTS

### HOW DO SMART METERS WORK?

Smart meters use very low power radiofrequency (RF) signals to communicate information such as meter readings to a base station for use in providing electricity service to customers. Smart meters transmit using similar technology and frequencies to mobile phones (in the range 900 MHz to 2.4 GHz). RF signals from smart meters

- » are much lower power than the signals from mobile phones,
- » only occur in short bursts for a total of a few percent of the day, and
- » decrease rapidly with distance from the meter.

### IS THIS SAFE?

The RF transmissions from smart meters use very low power and comply with the Australian standards for RF transmissions required by the Australian Communications and Media Authority (ACMA) in Australia which were developed by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA).

### WHAT DOES THE SCIENTIFIC RESEARCH SHOW?

Scientific research has been conducted on radio-frequency (RF) fields and health for several decades. Recent research has focused on RF at mobile phone frequencies. This body of research has been reviewed by many public health and regulatory agencies, including ARPANSA and the World Health Organization (WHO).

None of these organizations has found that the RF signals from mobile phones cause or contribute to any adverse health effects. For example:

- » a May 2011 review by the WHO's International Agency for Research on Cancer (IARC) concluded that while some studies suggest a "possible" relationship to cancer based on prolonged use of mobile phones, RF exposures from such phones cannot be considered an actual cause of cancer or even a probable cause.
- » WHO (June 2011) further emphasized that "no adverse health effects have been established as being caused by mobile phone use."
- » in its review, IARC also found that there was inadequate scientific evidence of any cancer risk due to RF fields from environmental sources, such as cell phone towers and wireless networks; this would also include smart meters.

## HOW DO SMART METER RF EMISSIONS COMPARE TO OTHER RF SOURCES IN MY HOME?

Other typical sources of RF exposures in homes and businesses include mobile phones, cordless phones, wireless routers and wifi networks, and microwave ovens. To test actual levels of RF exposure from smart meters, the Victorian Government commissioned an independent study by testing laboratory EMC Technologies.

The results are presented in Figure 1 and show that radiofrequency electromagnetic exposures from single meters and groups of meters are well below the safe levels set by ARPANSA. The study also found that radiofrequency exposures from smart meters are lower than other household devices such as mobile phones and baby monitors. For more details please see the full report at [www.dpi.vic.gov.au](http://www.dpi.vic.gov.au).

## HOW CAN I FIND OUT MORE ABOUT POSSIBLE HEALTH EFFECTS OF SMART METERS?

- » Visit Victorian Department of Primary Industry web site on safety of smart meters at [www.dpi.vic.gov.au/smart-meters/safety](http://www.dpi.vic.gov.au/smart-meters/safety)
- » Visit your local electricity retailer's or distributor's web site
- » Visit the ARPANSA web site [www.arpansa.gov.au/radiationprotection/Factsheets/is\\_smartmeters.cfm](http://www.arpansa.gov.au/radiationprotection/Factsheets/is_smartmeters.cfm)
- » Visit the EMF Explained web site [www.emfexplained.info](http://www.emfexplained.info).
- » Visit the web site of an overseas electricity supplier such as Pacific Gas and Electric in California [www.pge.com/myhome/edusafety/systemworks/rf](http://www.pge.com/myhome/edusafety/systemworks/rf)

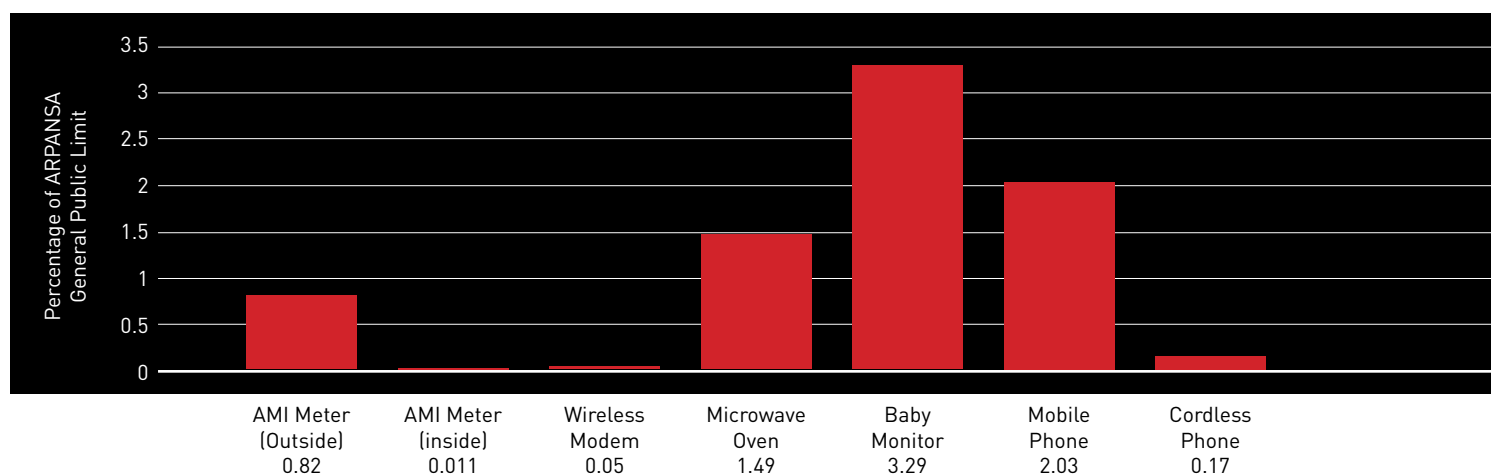
## HOW CAN I FIND OUT MORE ABOUT AUSTRALIAN RF TRANSMISSION MANAGEMENT AND GUIDELINES?

- » Visit the ACMA web site [www.acma.gov.au](http://www.acma.gov.au) or telephone ACMA offices in Canberra, Sydney or Melbourne
- » Visit the ARPANSA web site [www.arpansa.gov.au](http://www.arpansa.gov.au) or telephone ARPANSA on (freecall) 1800 022333
- » The Australian Radiation Protection Standard governing "Maximum Exposure Levels to Radiofrequency Fields" is available at [www.arpansa.gov.au/pubs/rps/rps3.pdf](http://www.arpansa.gov.au/pubs/rps/rps3.pdf)

## HOW CAN I FIND OUT MORE ABOUT RESEARCH ON MOBILE PHONE TRANSMISSIONS?

- » See the World Health Organization fact sheet: WHO Fact Sheet No 193 (June 2011) [www.who.int/mediacentre/factsheets/fs193/en/index.html](http://www.who.int/mediacentre/factsheets/fs193/en/index.html)
- » See the ARPANSA Fact Sheet No 5 [www.arpansa.gov.au](http://www.arpansa.gov.au).

**FIGURE 1 Comparison of RF EMF Power Density levels (measured at 30 cm): AMI Smart Meters and other Household Appliances.**



Source: AMI Meter Electromagnetic Field Survey Final Report prepared for Victorian Department of Primary Industries, October 2011 by EMC Technologies.

Frequency (MHz)	ARPANSA General Public RF Limit (W/m2)
850	4.25
950	4.75
2300	10