



SMART METERS – NOT SO SMART

by Nicole Bijlsma and based on her *Healthy Home Healthy Family* book

SMART METERS ARE receiving a lot of adverse attention worldwide for many reasons. Could it be the significant increase in your energy bill, the worldwide collapse of bee colonies (and ultimately our food source), the fire risks or the recent admission by the World Health Organization that radio frequencies are likely to cause cancer that get your attention?

Smart meters enable power company retailers to measure and record remotely how much electricity you use at different times of the day. This will enable them to charge different rates for different times of the day. In addition, smart meters have the ability to interact with appliances in the home through a home area network (HAN) to allow for the direct load control of heavy usage appliances such as air-conditioners, hot water services and washing machines. This system uses radio frequencies in the microwave range of 915 to 928 MHz and 2.43 GHz.

According to the power company retailers, a *pulsed radio frequency* is emitted between four and six times per day in order to read the meter remotely. However, in addition to these periodic transmissions, the meter may transmit data randomly at other times to act as a relay for neighbouring meters or to maintain a link with 'back office'. This may explain why building biologists' measurements have identified a pulsed radio frequency (equivalent to an SMS) being emitted every 15 to 20 seconds (though this varies depending on the power company retailer). Some household meters will be designated relay stations (this occurs every three kilometres) which may mean much higher rates of data transmission.

10% of Victorians, for example, have refused the installation of a smart meter, but there is no point being paranoid about radiation from the smart meter if you continue to use wireless internet, DECT cordless phones and baby monitors or mobile phones which use the same (radio) frequencies, often at a higher output.

AUSTRALIA'S EXPOSURE STANDARDS – A JOKE

While the level of radiation emitted by smart meters, mobile phones and other wireless technologies is well within the Australian guidelines, our exposure standards fare poorly when compared with other places such as Salzburg, Austria, whose standard limits are currently one million times lower. The Australian exposure standard (set by ARPANSA), of 10 W/m² for the public, is based on the 1998

ICNIRP standards, the limitations of which are discussed in my book *Healthy Home Healthy Family*. In comparison, the building biology standard developed by the Germans of 10 uW/m² is based on the precautionary principle for susceptible individuals: pregnant women, babies, children, the electrically sensitive and the immunocompromised. This is one million times lower than what is permissible in Australia. Surely commonsense would suggest we follow these guidelines?

EIGHT REASONS WHY SMART METERS SHOULD NOT BE COMPULSORY!

How is it possible for a group of seemingly intelligent bureaucrats to spend billions of tax payer dollars in a scheme that will fundamentally:

1. Expose your family to harmful radiation

The World Health Organization has classified this type of radiation as possibly carcinogenic to humans. Children are particularly vulnerable because the absorption of radio frequency energy is up to ten times higher in the bone marrow of the skull compared with adults. If the smart meter is fitted within a timber meter box or fitted to a surface mounted timber or plastic meter panel, the radiation will be emitted 360 degrees in every direction dropping off with distance. If the smart meter is fitted within a metal box, it will shield it to some degree forcing the radiation to leak out of the gaps and ventilation slots in the door, though leakage may occur if the metal box is not earthed, or if the metal is too thin or damaged, or if the door has been removed. The complex nature of microwave radiation to reflect and refract off surfaces means that you could be exposed to radiation from many directions. Consequently the radiation emitted from your smart meter, in addition to other wireless devices (internet router, DECT cordless phone, DECT baby monitors, mobile phone, wireless security system and so on) is likely to create hotspots within your home and these are impossible to determine without testing by a building biologist. It is important therefore that you don't sleep or spend time in these areas.

2. Increase your fire risk

Fire hazards may arise from several areas. First, a certificate of electrical safety is not required for the installation of smart meters and therefore you don't need to be a licensed electrician to install them. Victoria's energy regulator has admitted smart meter

contractors may lack required skills and is currently reviewing the qualifications of workers rolling out the scheme. Secondly this technology may interfere with appliances as they can be turned on remotely. In New Zealand, 422 fires involved smart meters in 2010. Recently, the Metropolitan Fire Brigade launched an investigation in switchboard fires following the installation of the smart meters in Victoria. Thirdly, smart meters create high frequency harmonics (dirty power) that can couple on to the household wiring which is not designed to carry this load. Higher frequency equates to increased heat which could lead to a fire in areas of compromised or faulty wiring.

3. Endanger species

There is mounting evidence that this type of radiation may adversely affect bees, bats, birds and plants, the impact of which may have a devastating impact on farming communities and ultimately our food source. ARPANSA's mission "to protect the health and safety of people and to protect the environment from the harmful effects of radiation" is questionable given that nobody in the government appears to be investigating the impact these frequencies are having on our plants and wildlife.

4. Invade your privacy

Apart from enabling power company retailers to control your appliances remotely, the system is easier to hack in to and sabotage with jamming devices because it uses an unlicensed frequency. This was evidenced in 2009, when the contact details of 179,000 Canadian Hydro customers were taken.

5. Significantly increase your energy bill

Despite assurances from the power distributors and governments that your bill will decrease, the reality is that worldwide consumers have found a significant increase (doubling or even tripling) in their energy bills. The increase in fixed charges alone at the beginning of the rollout added up to \$152 to Victorian households with further increases expected each year. In addition, time-of-use (TOU) pricing discriminates against low income earners, parents with young children, bedridden people, people with disabilities and the elderly who remain at home during the day. Ironically the intention of power company retailers to influence customer behaviour by imposing higher prices to reduce load has made little difference in countries where it has been implemented.

6. Renowned for billing errors

There has been a surge in billing errors reported to the Energy and Water Ombudsman following installation of smart meters, which is similar to what has occurred in other countries. Since 2009, several law suits have been filed in the US against the power companies for installing thousands of faulty smart meters resulting in skyrocketing energy bills.

7. Cause job losses

Goodbye meter readers. Automation generally equates to less employees; after all it's all about higher dividends for shareholders!

8. Economic viability

The cost of the Advanced Metering Infrastructure (AMI) involving the replacement of meters, installation of communications equipment and central control facilities is in the billions. The European Parliament has strongly encouraged member states to study the economic feasibility of smart grids before they implement them. In Australia, the Auditor-General concluded '*the cost-benefit study behind the AMI decision was flawed...*' and that there were '*significant unexplained discrepancies between the industry's economic estimates and the studies done in Victoria and at the national level*'. The only people who appear to benefit from the rollout are the power companies and their retailers.

WHERE TO FROM HERE?

The government could easily have avoided these issues by using fibre optic cabling or by connecting a hard-wired electronic metering communications system into every home's telephone network, which could have been achieved at around the same cost. In 2010, the Netherlands, like so many other countries, prevented a bill making smart meters compulsory. Australia should do the same or at least provide the consumer with the right to choose a hard-wired landline alternative as this system can still be read and controlled remotely.

Currently, the government has made no provision for consumers to opt out. However you may delay the installation of a smart meter until the end of the rollout program in 2013. This may mean you will need to pay for the cost of the installation after this period, unless of course they change their mind like they did with the insulation debacle!