



# ELECTROSMOG DOCTOR

## Not-so-smart meters

British Gas has been heavily promoting smart meters as ushering in a 'new age of control over your energy', but Guy Hudson disagrees

Central-heating boilers wear out and new ones save you money—so it was not a difficult decision for Marsha Lambert (not her real name) to get the boiler of her family home replaced. But it's turned into a bit of a nightmare. British Gas, which is pushing hard to install smart meters, installed one at the Lamberts' home with neither their knowledge nor informed consent.

The first they knew of it was rather baffling—they couldn't adjust the thermostat when their Wi-Fi modem was switched off. And when they called the British Gas engineers, they were in for a shock.

By instructing British Gas to install a new boiler, they had inadvertently sanctioned (in the small print) the installation of three pulsed microwave transmitters running 24/7 in their home to connect their boiler to the centralized monitoring devices at British Gas. This was particularly galling as they'd previously taken a precautionary approach towards electrosmog in their home and home office by using wired rather than wireless internet whenever practical.

Mike Mitcham, who runs the Stop Smart Meters! UK not-for-profit movement with Dr Elizabeth Evans, says their campaign to stop these devices from measuring our energy usages is based on six reasons:

- 1 There are widely reported serious health problems with smart meters.
- 2 In the US and Canada, smart meters have caused numerous fires.

- 3 There are a variety of privacy issues.
- 4 Security problems also arise with smart meters.
- 5 Bills increase—in some cases by up to 1000 per cent.
- 6 They're not 'smart' nor are they green, and there is no justifiable business scenario for them as they're currently designed to work.

### Home hazards

Mike has obtained a number of alarming photos of American homes burning down, complete with small explosions! It seems that it's not uncommon for smart meters to be fitted by inexperienced technicians, and when the connections aren't properly made, they can overheat and start fires (although with UK regulations, this is less likely to happen here).

He's also cited many cases of residents developing typical electrosensitivity symptoms the minute their new meters were installed, including severe headaches, heart palpitations, brain fog, and aches and pains. These are the immediate symptoms, but long-term diseases, including cancer, have also been associated with the unremitting, pulsing radio-frequency (RF) microwaves from smart meters.<sup>1</sup>

Each smart meter has two transmitters which constantly radiate microwaves: one transmitter is for the inside of the home, while the other links to the wider network and back to the utility company. But even if you refuse a smart meter for yourself (which you are absolutely

entitled to do), you can still be badly affected by your neighbours' meters.

Government and industry scientists have spread a number of common misconceptions about wireless health dangers. They consistently maintain that non-ionizing radiation doesn't have any mechanism for causing harm or is too weak to do so.<sup>2</sup> But harmful effects can be readily observed with even the most basic equipment, such as dark-field microscopy analysis of blood cells, and the mechanisms for harm are becoming clearer too from the studies of Dr George Carlo, the epidemiologist who, from 1993 to 1999, headed the first industry-backed studies into the dangers of cell-phone use.

His findings show, among other adverse effects, interference with biological cellular signalling leading to disrupted DNA repair mechanisms, cell dysfunction and cell death.<sup>3</sup>

### Health effects

By now the biological effects and health problems caused by non-ionizing radiation are well documented, and vast amounts of supporting scientific evidence make the case difficult to deny. The US military has known for more than 40 years that pulsed microwaves cause biological changes and health problems, based on some 2,000 reports in the literature.<sup>4</sup> At present, more than 6,000 scientific publications show the negative health effects of RF radiation.<sup>5</sup>

Microscopy images have been taken of normal vs radiation-damaged cells

by scientists with the European Union REFLEX project, a four-year study by 12 research groups in seven European countries led by Franz Adlkofer of Verum in Munich, Germany. These photos clearly show that one full day of cell-phone radiation can cause as much DNA damage as 1,600 chest X-rays.<sup>13</sup>

The effect on fertility, as revealed by reduced motility of human sperm and increased sperm DNA fragmentation, is apparent within just four hours of Wi-Fi radiation exposure.<sup>14</sup> The effect on blood cells—including the ‘rouleaux’ effect, where the blood cells clump together into stacks, like a roll of coins—can lead to acute and chronic health problems affecting the heart and even the autonomic nervous system (responsible for the fight-or-flight response, for example).<sup>15</sup>

Another line of reasoning used by industry to convince us that wireless technologies are not likely to harm us is that we have been surrounded by microwave radiation since the beginning of time. But natural background microwave levels are 900 quadrillion

## “Wi-Fi’s effect on blood cells can lead to acute and chronic health problems affecting the heart and even the autonomic nervous system”

times lower than the reference permitted levels set forth by private industry groups, such as the International Commission on Non-Ionizing Radiation Protection (ICNIRP), a publicly funded group of 14 independent scientific experts, whose aim is to disseminate information and advice on the potential health hazards of non-ionizing radiation exposure (see [www.icnirp.de](http://www.icnirp.de)).

### Virtual reality

So what is fuelling the industry to put smart meters into all of our homes? Time-of-use billing and increased

profits are one key reason, but the so-called ‘Internet of Things’ (IoT)—a term coined in 1999 by British technology pioneer Kevin Ashton and referring to a network where no human intervention would be needed to allow almost any technical device to intercommunicate—is another plausible reason. The IoT is based on the idea of equipping everything (and everyone) with an RF identifier that would bring every conceivable device and product (and person) online, making them all remotely accessible, readable and ultimately controllable through a global network of billions of devices talking to each other—all through pulsed microwaves.

In the case of smart gas meters, the boiler talks to the thermostat/controller, which talks to the internet modem which, in turn, talks to the central gas meter—no humans need apply.

Other common devices include car tyre-pressure monitors, heart monitors



(which may themselves induce cardiac arrhythmia), blood sugar monitors, energy monitors, farmed animals chipped from birth to slaughter, smart 'pills' that tell your doctor when you've self-medicated, food items, clothing (M&S already tag their labels), toasters, washing machines, radiators, vehicles—in fact, anything electromechanical.

Echoing the fictional world of George Orwell in which government bureaucrats monitor citizens' activities through their television sets, telecoms giant Verizon has patented a TV that can 'observe' its viewers, with a business model proposing a system of tailoring the advertising according to viewers' habits and preferences.

The UK's Government Communications Headquarters (GCHQ) as part of the British intelligence agency is itself no stranger to surveillance, and yet has strongly warned against the IoT, largely because such simple interconnected devices are easily hacked, so

**The case made for subscribers is that they are able to monitor their energy consumption. But studies show that consumers don't reduce their consumption even when they know how much they're using**

causing security breaches throughout the extended network—a potential resource of 450 million hackable devices. We all know what happens when you fail to put a pin into your cell-phone voicemail, but how many of us would bother to make devices like the thermostat or toaster secure?

With the IoT, we are web-enabling our entire domestic environment and energy supply. Former US Central Intelligence Agency (CIA) director David Petraeus has criticized the idea of the IoT because it leaves homes open to criminal attack. "Items of interest will be located, identified, monitored, and remotely controlled through technologies such as radio-frequency identification, sensor networks, tiny embedded servers and energy harvesters," he says.<sup>[2]</sup>

The US defence contractor Lockheed Martin's general manager Kenneth Van Meter has warned that having a "smart grid... poses a glaring threat to the security of the U.S."<sup>[10]</sup> And

even the utilities aren't immune. Smart-meter energy theft is growing, as consumers attempt to reduce their bills by hacking into the meters.

Monitoring your home's electricity can show when each device—your shower, cooker, lights, computer—is being used. This means that criminals who hack into these smart devices will know if you're at home and even what you're doing. They'll know when you put the kettle on or if you're in the shower, all handy information when planning a burglary.

Ultimately, all this information offers a vast moneymaking opportunity for the utility companies, which can sell these data for marketing purposes.

Besides security issues, you also face a threat to the security of your power supply during extreme weather. UK environmental consultant scientist Dr Isaac Jamieson has discovered that smart meters are designed to 'fail-to-off'—in other words, when the temperature falls below -10 degrees C, for example, the meter will automatically disable your energy supply.<sup>[11]</sup> So when you need it the most, your supply will fail.

#### Dubious benefits

The case made for subscribers is that they are able to monitor their energy consumption while using it. But studies show that consumers don't reduce their consumption even when they know how much they're using, so any economic benefit seems dubious, particularly as the meters can cost between \$250 and \$500 in the US (though they will be installed for free in the UK from 2015) and are themselves using electricity 24/7. In Australia, consumers' costs went up alarmingly—80 per cent of bills went up a whopping 50 per cent on average. This may be one reason why Germany, although technologically advanced in other regards, has rejected smart meters outright.

To sum up, smart meters can make you seriously ill, are likely to overcharge you, enable private data regarding your habits to be collected and sold on to third parties, decrease the reliability of your energy supply, make it easier for criminals and foreign countries to attack your utility network and, in future, will allow the utility companies to switch off your devices selectively to ration your power consumption.

Rebecca Smith of the *Wall Street Journal* headlined her April 2009 article: 'Smart Meter, Dumb Idea?'—but not as dumb as we would be for letting these devices into our lives. Visit the StopSmartMeters! UK website ([www.stopsmartmeters.org.uk](http://www.stopsmartmeters.org.uk)) for information on how to avoid getting stuck with one. And beware: once they've been fitted, it's very difficult to change back.

#### RESOURCES

- Halteman E. *Wireless Utility Meter Safety/Impacts Survey. Final Results Summary*, September 13, 2011; <http://emfsafetynetwork.org/wp-content/uploads/2011/09/Wireless-Utility-Meter-Safety-Impacts-Survey-Results-Final.pdf>; [www.cancer.org/cancer/causes/othercarcinogens/athome/smart-meters](http://www.cancer.org/cancer/causes/othercarcinogens/athome/smart-meters)
- Shermer M. 'Can You Hear Me Now? The Truth about Cell Phones and Cancer.' *Sci Am*, Sept 1, 2010; [www.scientificamerican.com/article/can-you-hear-me-now/](http://www.scientificamerican.com/article/can-you-hear-me-now/)
- Kovach S. 'The Hidden Dangers of Cell Phone Radiation.' *Life Extension Magazine*, August 2007; [www.lef.org/magazine/mag2007/aug2007\\_report\\_cellphone\\_radiation\\_01.htm](http://www.lef.org/magazine/mag2007/aug2007_report_cellphone_radiation_01.htm)
- Glaser ZR. 'Bibliography of reported biological phenomena (effects) and clinical manifestations attributed to microwave and radio-frequency radiation.' *Naval Medical Research Institute Report, Project MF12.524.015-0004B*, Report No. 2, 4 October 1971
- Bevington M. *Electromagnetic Sensitivity and Electromagnetic Hypersensitivity: A Summary*. Capability Books, 2013
- Worthington A. 'Generation X-Ray: Child Victims of Technological Abuse.' *The Idaho Observer*, May 2008; [www.bibliotecaplayades.net/scalar\\_tech/esp\\_scalar\\_tech\\_cellphonesmicrowave09.htm](http://www.bibliotecaplayades.net/scalar_tech/esp_scalar_tech_cellphonesmicrowave09.htm)
- Fertil Steril, 2012; 97: 39-45.e2
- Rev Environ Health, 2013; 28: 75-84
- Ackerman S. 'CIA Chief: We'll spy on you through your dishwasher.' *Wired*, March 15, 2012; <http://www.wired.com/dangerroom/2012/03/petraeus-tv-remote/>
- Mick J (Blog). DailyTech, October 5, 2010; [www.dailytech.com/Lockheed+Martin+Says+Smart+Grid+Will+Allow+China+to+Hack+US+Power/article19800.htm](http://www.dailytech.com/Lockheed+Martin+Says+Smart+Grid+Will+Allow+China+to+Hack+US+Power/article19800.htm)
- StopSmartMeters! UK; <http://stopsmartmeters.org.uk/new-report-warns-of-smart-meter-failures-due-to-temperature-weather-extremes/>

Physicist Guy Hudson is an electromagnetic surveyor, who helps consumers lower their exposure to excessive radiation and protect themselves from electrosensitivity, particularly to 'dirty' electricity.

See [www.ben-e.co](http://www.ben-e.co) and [www.ES-UK.info](http://www.ES-UK.info) for more information.

