## Written evidence submitted by Dr Andrew Goldsworthy (SMR46) to the <u>House</u> <u>of Commons Select Committee on Energy and Climate Change</u>, United Kingdom, Regarding Smart Meters.

This document can also be found at *mastsanity.orq*.

## 1. Smart Meters will not deliver value for money.

2. We should not expect any reduction in cost to the average consumer. In fact, people in the USA and Canada who already have Smart Meters have usually found that they bills have risen, partly because the meters have to be paid for out of revenue and partly because many people (particularly the poor and elderly) will not understand the complex tariffs. Past experience in the UK has shown that utility companies, when given the opportunity to use complex tariffs, use them to their own advantage. *However, any potential benefits will be more than outweighed by the known and predicted health effects* from being exposed 24/7 to intermittent microwave radiation.

3. *There have been no truly successful implementations of Smart Meters in other countries* because of their deleterious effects on health. Many users in the USA and Canada have experienced serious effects on their health, including severe headaches, tinnitus, dizziness, nausea and poor sleep following their installation. The mechanisms of these effects are now known, which may be regarded as further evidence that they are real.

## 4. Effects on the inner ear.

*Tinnitus, dizziness and nausea* are due to false activation of the sensitive "hair cells" of the inner ear. *When it occurs in those of the cochlea*, it can cause tinnitus (false sensations of sound). **These hair cells can detect sound of as little as a billionth of a watt** by first converting it to electrical signals that then trigger nerve impulses that are sent to the brain. They are also sensitive, even to weak pulsed microwaves.

*When this occurs in the hair cells of the vestibular system* (the part of the inner ear concerned with balance) they too send false signals to the brain, causing **dizziness**, loss of balance and symptoms of motion sickness, including **nausea**. These can be very debilitating.

5. *Effects on the brain itself* are also due to the pulsed microwave radiation interfering with its normal electrical activity by generating extra by false nerve impulses. This can result in brain hyperactivity, stress headaches and a reduced ability to concentrate (Attention Deficit Hyperactivity Disorder (ADHD)).

6. Autism can occur when ADHD occurs in the brain of the foetus and/or children under about 18 months. It can interfere with normal learning during this relatively brief period when the brain is concerned primarily with recognizing body language, other peoples' emotions, basic communication skills and social interactions. At the end of this period, what the child has learnt become hard-wired into its psyche and cannot easily be added to later. This can result in one of a whole range of autistic spectrum disorders in which the child lacks one or more communications skills (often with other disorders) and is usually irreversible.

7. *Microwave exposure has been linked to a 50-fold increase in autism* since the advent of mobile phones, cordless phones and their respective base stations. About one child in fifty is now likely to be at least partially autistic and the annual economic cost of autism in the UK has been estimated by workers at King's College London as being about £27 billion. Wireless Smart Meters can only make this worse. Can the Nation afford it?

8. Other reported long-term effects of pulsed microwaves are obesity and fatigue. Exposure to the radiation from mobile phones and their base stations (circa seven years for living within 100 metres of a base station) is damaging to the thyroid gland, which is in an exposed position in the front of the neck. This results in hypothyroidism, the main symptoms of which are obesity and fatigue. It may be no coincidence that the Western World is currently suffering from an outbreak of obesity and chronic fatigue syndrome that Wireless Smart Meters can only be expected to exacerbate. The economic and health costs of both are also enormous; can we afford them?

9. *The disturbing effects of Wireless Smart Meters on sleep and cancer* are apparently due to a reduction in melatonin production (a sleep hormone) by the pineal gland in the brain. This is also worrying since it disrupts our natural circadian rhythms. These circadian rhythms also control our immune systems, which are normally most active during what the body clock "thinks" is night (the subjective night). Similar disruption of the circadian rhythms of shift workers and people regularly exposed to light at night has been found to give rise to cardiac problems and reduced immunity to diseases. There is also a more than doubled risk of getting several forms of cancer as the immune system fails to dispose of aberrant cancer cells from various sources. Exposure to light at night is recognized by the World Health Organisation as being a Group 2A carcinogen (probably carcinogenic). We can therefore expect the current Group 2B status of wireless Smart meters to be elevated to Group 2A. Is the Government or Power Industry happy to take this risk with every household in the land? I hope not.

9. *The situation is potentially worse in the UK than in the USA and Canada*, where the meters are usually on the outside of houses and relatively little power is needed to transmit the signal. In the UK, most meters are either under the stairs; ie in the centre of the house or in the basement, so a much higher signal strength is needed to reach the base station. Therefore our own exposure will be that much greater and the symptoms likely to be worse.

10. Vulnerable customers should certainly not be allocated wireless smart meters, nor should charities be encouraged to support them. There will inevitably be litigation that charities may not be able to afford when their effects of health become fully recognized.

11. *The main pitfall in the introduction of wireless smart* meters is the effects of their regular radiation pattern (especially at night) on the health of consumers. If you must have wireless smart meters for billing purposes, they should be restricted to one transmission per day and even that should not occur at night.

12. However, it would be far better to use a wired of fibre optic connection using the telephone or broadband connections, which virtually every household already has. [Note by Smart Meter Education Network: Unfortunately, this is not a solution because fiber optic and broadband use digital signaling, which causes the same harmful effects on health as radiofrequency transmissions.]

13. *DECC is not giving the public the necessary information* to enable it to decide on the safety of smart meters, particularly their likely effects on cancer and other health concerns. Either it does not know about them or it has been badly misinformed.

14. There are thousands of peer-reviewed scientific papers showing biological effects from electromagnetic fields (including microwaves) that may be orders of magnitude below official safety standards (these only measure the short term heating effects). See <u>www.bioinitiative.org</u>. Compliance with these standards cannot therefore be taken as an indication of safety. The public should be informed of this so that they can make a sensible and fully informed decision about the safety of wireless smart meters.

15. To carry out compulsory mass exposure to pulsed microwave radiation without the fully informed consent of the people affected is in contravention of the Nuremberg code.

16. *The question of security of supply has not been adequately addressed*. Any wireless connection is vulnerable to electromagnetic interference such as that from solar flares, not to mention deliberate attempts at hacking by potential enemies (remember the Stuxnet virus, which destroyed the centrifuges needed for the Iranian nuclear program). Similar attacks on our smart meter system or the intense magnetic fields from a direct hit by the radiation from a solar flare could destroy the electronics of our wireless smart meters (which are designed to fail to the off position) so that the whole nation could be in darkness and without power. If that happened, it could be months if not longer before the meters were replaced and power restored. The likelihood that the meters will be outsourced from another country (probably from China) that will be aware of any vulnerability does little to inspire confidence in our procurement policies.

*In conclusion,* to go ahead with this wireless smart meter program can at best be described as foolhardy and at worst a recipe for National Suicide.

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