

**Digital, Culture, Media and Sport Committee
Commons Select Committee**

**Inquiry:
Broadband and the road to 5G**

Evidence from Electrosensitivity UK (ES-UK)

Electrosensitivity UK is a charity founded in 2003.

Its aims are:

(a) to support people already electrosensitive, and

(b) to inform the public of the health risks of electromagnetic radiation.

1.4 % of the population (about 800,000 people in the UK) are severely affected by radio frequency radiation (RFR) and electromagnetic fields.

1. *How realistic is the Government's ambition of nationwide gigabit-capable broadband by 2025, and what measures (regulatory, financial, technical, other) will be needed to achieve it?*

The government's ambition is totally unrealistic if it involves wireless, since this ignores the majority mainstream scientific evidence on the established health dangers of radio frequency radiation (RFR).

- (a) RFR has been known to cause cancer since 1953.
 - (b) This was confirmed by the 'gold standard' NTP \$30 million study commissioned by the FDA to find out if mobile phones cause cancer. It found 'clear evidence', their highest category, that mobile phones do definitely cause cancer.
 - (c) The World Health Organization's IARC classified RFR as a 2B possible human carcinogen in 2011.
 - (d) Since 2011, the leading world experts have stated in peer-reviewed articles that the weight of scientific evidence now requires that RFR is classified as a class 1 certain human carcinogen or, at the very least, 2A probable human carcinogen.
 - (e) The WHO's IARC's next re-evaluation of RFR is scheduled for 2022-24. If such a re-evaluation reclassifies RFR as 1 or 2A, it will probably mean that all RFR in schools, hospitals, homes and public places will need to be removed. Most safety standards require that no worker or member of the public is exposed to a 2A or 1 carcinogen, and certainly not children, the elderly, pregnant women, the ill and those who do not want to be exposed in this way.
 - (f) I have previously written to the then Chancellor of the Exchequer explaining that removing and replacing all such wireless devices will be much more expensive for the UK economy than planning for wired and fibre optic internet connections from the start.
 - (g) The lessons from similar pollutants and toxins, such as asbestos, lead and smoking, indicate that the longer a government refuses to follow the established science the more deleterious it is for the UK economy.
 - (h) In addition, there are the quantifiable unnecessary expenses to the NHS and social care of providing for conditions known to be caused or exacerbated by RFR, such as cancer, cardiovascular harm, diabetes, electrosensitivity, infertility, and neurological conditions.
 - (i) There is also established damage to wildlife. This should be fully assessed under environmental risk assessments before any 5G wireless rollout.
2. *What are the challenges to the roll-out of 5G and gigabit-capable networks? To what extent do existing legislative, regulatory and spending plans address them?*

In addition to the problems listed in answer to question 1, there are three major health challenges to the roll-out of 5G and gigabit-capable networks.

- (a) Some 79 % of the population (53 million people in the UK) can suffer subconscious physical harm, as shown by biomarkers from exposure near to RFR transmitters like mobile phone masts, compared with people further away. Adverse outcome include those in 1(h), such as cancers and electrosensitivity.
- (b) Some 1.4 % of the population (800,000 people in the UK), according to government-sponsored surveys, are seriously affected by current RFR exposure.
- (c) Some 0.65 % of the population (435,000 people in the UK) have lost their jobs or are unable to attend schooling or university because of current RFR exposure.
- (d) Adding 5G and extending RFR networks will add to this social, economic and health burden for a significant proportion of the UK population.
- (e) The DCMS has not so far indicated how it will address these disability discrimination issues resulting from the roll-out of wireless 5G and gigabit-capable networks.

3. What needs to happen to ensure the Government's 'outside in' approach successfully addresses the digital divide while also delivering value for money?

The DCMS should adopt best practice in RFR hygiene as recommended by the international experts to ensure no digital divide, and to deliver value for money. This includes replacing the unscientific and unprotective ICNIRP short-term and heating-only guidelines based on Schwan's mistake of 1953. These were voted obsolete by the EU parliament in 2008.

Instead, the DCMS and DHSC should adopt international long-term and non-thermal guidelines, so as to reduce RFR exposure to safer levels for the whole population.

- The safe background level of RFR is 0.000001 $\mu\text{W}/\text{m}^2$.
- The majority mainstream guidelines (e.g. Bioinitiative 2012) are about 3 $\mu\text{W}/\text{m}^2$.
- The minority 'industry' guidelines (e.g. ICNIRP 2020) are 40,000,000 $\mu\text{W}/\text{m}^2$.
- The UK government at present still uses the obsolete ICNIRP guidelines, some million billion times above safe background levels and ten million times above international long-term guidelines.

Back-ground (safe) levels	Majority mainstream guidelines			Minority 'industry' guidelines		
	<i>Basis: majority scientific evidence</i>			<i>Basis: Arbitrary hypothesis</i>		
	<i>Long-term and short-term</i>			<i>Short-term only</i>		
	<i>Non-thermal and heating</i>			<i>Heating only</i>		
	<i>Peak</i>			<i>Averaged over 6 or 30 minutes</i>		
$\mu\text{W}/\text{m}^2$	Date		$\mu\text{W}/\text{m}^2$	Date		$\mu\text{W}/\text{m}^2$
0.000001	1935	USSR	100,000	1953	Schwan's mistake	100,000,000
	1972	Poland	1,000	1998	ICNIRP	10,000,000
	2012	Bioinitiative	3	2020	ICNIRP*	40,000,000

*Raised to allow 5G beam-steering.

Some solutions could include:

- (a) Replacing wireless with fibre-optic cabling into each home.
- (b) Providing wired cabling access points for all internet access points, just as power appliances use sockets to access cabled power supplies around homes, schools and workplaces.

4. *What does take-up of broadband and mobile services indicate about consumer and business attitudes to digital connectivity? What needs to be learnt from this for the roll-out of, and switchover to, gigabit-capable networks?*

Consumer and business requirements for digital connectivity can be provided by safe wired access, not the dangers of wireless with the accompanying high cost of health harm to significant percentages of the UK population.

The UK needs to take a lead on healthy and environmentally friendly digital connectivity.

- (a) It has been known since 1889 that electromagnetic fields can damage health.
- (b) There is a lack of full and long-term safety testing on implemented 5G.
- (c) The chair of ICNIRP admitted this lack of testing, accepting that the deployment of 5G is effectively a giant experiment on the human race.
- (d) Such an experiment contravenes the Nuremberg code on conducting experiments on unaware or non-consenting populations.
- (e) The UK should follow the growing numbers of countries halting or banning 5G.
- (f) The UK should follow countries like France which has banned Wifi and mobile phones in schools, to protect children.
- (g) The DCMS should be urging other departments in the UK government to follow the majority mainstream science in this area and start the removal of all wireless transmissions exceeding international long-term safety guidelines, including any elements of 2G, 3G, 4G, 5G and Wifi where this is the case.
- (h) Most insurance underwriters are said to exclude RFR cover entirely, or include it with other high-risk toxins such as asbestos. DCMS should alert users to this.
- (i) 5G has been reckoned to consume about 33% more power than 3G or 4G.

5. *What will be the impact on individuals and communities whose broadband and mobile connectivity fails to keep pace with the rest of the country over the next 10 years? What is the link with other DCMS policy concerns, such as changing patterns in the consumption of digital media?*

- (a) Safety must always come first and all wireless transmissions exceeding international long-term safety guidelines, including 2G, 3G, 4G, 5G and Wifi, should be removed as swiftly as possible.
- (b) Unsafe RFR should be replaced with safe wired and cabled connections.

6. *How effectively do the different stakeholders (UK and devolved governments, local authorities, Ofcom, industry) work together in both the mobile and broadband sectors? How might these relationships be improved to support gigabit-capable roll-out?*

At present the UK government is not receiving advice based on the majority and mainstream science on the dangers of RFR.

- (a) It needs to abandon the minority cartel of ICNIRP which it currently supports.
- (b) In fact, the chair of ICNIRP stated that people should be able to choose long-term non-thermal international safety guidelines rather than its own short-term heating-only ones based on Schwan's mistake of 1953. The government says it follows the ICNIRP yet it had not yet implemented this advice.

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- (c) ICNIRP's principles have stated since 2002 that some people are vulnerable to harm from levels below its own short-term and heating-only guidelines. It is the duty of the DCMS and DHSC to safeguard the 800,000 people in the UK with severe electrosensitivity from these very high and damaging ICNIRP levels. The UK government has yet to carry out ICNIRP's guidance in this respect.
 - (d) It is also the duty of the DCMS and DHSC to safeguard the 53 million people in the UK vulnerable from current levels of RFR allowed under ICNIRP's obsolete guidelines. The strain of additional cancer, neurological and infertility cases on the NHS, along with the many other conditions which can be caused by RFR, probably already costs the tax payer more than the tax revenue from mobile phones.
 - (e) Local authorities have been given a responsibility by central government to ensure the health and well-being of people for whom they have responsibility. They have also been urged by the government to facilitate 5G. These two requirements are incompatible. Local authorities should be required to put the health and well-being of their populations before wireless companies' profits.
 - (f) The government still refuses to take advice from mainstream science and charities seeking to support people with electrosensitivity and those harmed by environmental RFR. This could easily be changed by DCMS and DHSC.
 - (g) The DCMS and DHSC are out of line with the UK's legal service. Courts and first tier tribunals in the UK have recognised electrosensitivity since 2012 and made financial awards to people unable to work because of recognised harm from RFR.
 - (h) In the UK employers failing to make reasonable adjustments for related electromagnetic sensitivities have been fined by employment tribunals.
 - (i) In other countries electrosensitivity has been formally recognised by governments as a disability and functional impairment since 2000.
 - (j) Other countries have fined employers failing to ensure the workplace is safe for employees with electrosensitivity, or for causing electrosensitivity in employees.
 - (k) In contrast the DHSC's Public Health England still refuses to recognise the condition of real electrosensitivity, despite the fact that it has been described in the medical literature since 1932 and current peer-reviewed studies show both established diagnosis and mechanisms for the condition.
 - (l) In following ICNIRP's unscientific and unprotective approach to ensure wireless industry profits, PHE and thus DCMS are harming the 800,000 people in the UK severely affected by RFR. This number is more than the 700,000 industry employees represented by Tech UK. It is also more than the individual total numbers in the UK suffering from conditions like multiple sclerosis, Parkinson's, registered blind/partially sighted, epilepsy or autism. DCMS should reject PHE's unscientific and unprotective approach and treat all without discrimination.

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April 21 2020

Further information:

[International EMF Scientist Appeal](#), [The EMF Call](#), [The 5G Appeal](#), [5G Space Appeal](#), [Bioinitiative Report](#), [EUROPAEM EMF Guidelines 2016](#), [IGNIR](#), [Selected Studies on ES and EHS](#), [ICNIRP Guidelines-Unscientific and Not Protective](#).