



## HACKETT & DABBS

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**Proposed Defendants:**

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By email to: [Enquiries@phe.gov.uk](mailto:Enquiries@phe.gov.uk)

Secretary of State for Health and Social Care  
Secretary of State for the Environment, Food and Rural Affairs  
Secretary of State for Digital, Culture, Media and Sport  
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London  
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[thetreasury solicitor@governmentlegal.gov.uk](mailto:thetreasury solicitor@governmentlegal.gov.uk)

20th May 2020

Dear Sirs,

**Re: Letter before claim for judicial review**

I am writing on behalf of Victoria Angell and Karen Churchill (the proposed claimants). This is a letter before claim for judicial review (our reference LH/1065/1/ANG ). I would be grateful for a reply within 14 days of the date of this letter, that is by 3<sup>rd</sup> June 2020.

In short, the proposed defendants acted, and continue to act, unlawfully because they have:

- (a) failed to take into account the evidence showing a high risk to human health from 5G;
- (b) failed to bring about a full and independent assessment of the risks to human health;
- (c) failed to put in place safeguards to effectively protect the public from those risks;
- (d) failed to provide effective information to the public about those risks; and/or
- (e) adopted and continued to apply a policy that all 5G technology will only be required to adhere to ICNIRP Guidelines.

This breached articles 2 and/or 8 of the European Convention on Human Rights, and was unlawful under s.6 of the Human Rights Act 1998, and also breached public law.

I have listed three Secretaries of State as proposed defendants to this claim. If you consider that one or more of them should be interested parties rather than defendants, please do let me know.

### **The risks to health and life**

There is a great deal of evidence to show that the proposed increased use of 5G technology will put the health and life of large numbers of the public at real risk. This is summarised in the attached report by Professor Tom Butler, who is at University College Cork. He is the Principal Investigator of Ireland's Governance Risk and Compliance Technology Centre<sup>1</sup>. I would be grateful if you could read his report alongside this letter.

He explains that the "overwhelming majority of published peer-reviewed scientific studies in biomedical research databases... indicate significant health risks with RFR of the type used in 5G technologies". He explains the serious risks to health, including life-threatening conditions such as cancer, which those studies identify.

In summary, the proposed use of 5G will put both health and life at even greater risk. RFR causes oxidative stress<sup>2</sup>, which can damage biological systems and is linked with many diseases including cardiovascular disease, cancer, dementia and infertility.

The risks include<sup>3</sup>:

#### **Cancer Risks:**

Increased cancer risk<sup>4</sup>, such as increased risk of brain tumours<sup>5,6</sup> glioblastoma multiforme brain tumours<sup>7</sup>, temporal lobe tumours, acoustic neuromas, leukaemia, parotid gland tumours<sup>8</sup>, colorectal cancer<sup>9</sup>, skin cancer<sup>10</sup>,

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<sup>1</sup> For more detail of his expertise, please use this link: [www.cubsucc.com/faculty-directory/prof-thomas-butler/](http://www.cubsucc.com/faculty-directory/prof-thomas-butler/)

<sup>2</sup> Yakymenko et al (2015) Oxidative Mechanisms of Biological Activity of Low-Intensity Radiofrequency Radiation

<sup>3</sup> Kostoff et al. (2020)

<sup>4</sup> Carlberg and Hardell (2017) Evaluation of Mobile Phone and Cordless Phone Use and Glioma Risk Using the Bradford Hill Viewpoints from 1965 on Association or Causation – <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5376454/>

<sup>5</sup> Ibid.

<sup>6</sup> Bortkiewicz, Gadzicka, and Szymczak (2017) Mobile Phone Use and Risk for Intracranial Tumour and Salivary Gland Tumors – A Meta-Analysis <https://pubmed.ncbi.nlm.nih.gov/28220905/>

<sup>7</sup> Philips et al (2018) Brain Tumours: Rise in Glioblastoma Multiforme Incidence in England 1995-2015 suggests an Adverse Environmental or Lifestyle Factor

<sup>8</sup> Kostoff et al. 2020

<sup>9</sup> Butler. T. (2020) A Review of the Health Risks of Radiofrequency Radiation Employed in 5G Technology and the Implications for UK Policymaking

<sup>10</sup> Neufeld and Kuster (2018) Systematic Derivation of Safety Limits for Time-Varying 5G Radiofrequency Exposure based on Analytical Models and Thermal dose, <https://pubmed.ncbi.nlm.nih.gov/30247338/>

Damage to Cells:Geno-toxicity (DNA damage, DNA repair inhibition, chromatin structure), mutagenicity, and teratogenicity<sup>11</sup>.

Neurodegenerative diseases:

Alzheimer's Disease<sup>121314</sup>, Amyotrophic Lateral Sclerosis neuro-behavioural problems, autism, reproductive problems, pregnancy outcomes, excessive reactive oxygen species/oxidative stress, inflammation, apoptosis, blood-brain barrier disruption, pineal gland/melatonin production, sleep disturbance, headache, irritability, fatigue, concentration difficulties, depression, dizziness, tinnitus, burning and flushed skin, digestive disturbance, tremor, cardiac irregularities, immunological problems, adverse impacts on the neural, circulatory, immune, endocrine, and skeletal systems<sup>15</sup>.

Risks to Children and Foetuses:

Children absorb more radiation than adults, are particularly vulnerable<sup>16</sup> to oxidative stress and hence exposure to all of the health risks listed herein.

RFR risks also extend to unborn children. A 2017 study found an increase of miscarriage 2.72 times higher with higher RFR exposures than lower exposures<sup>17</sup> and of those children exposed in utero to higher RFR had 2.7 times increased risk of asthma; 5 times increased risk of obesity and 2.9 times greater risk of ADHD<sup>18</sup> and attention issues<sup>19</sup>.

Other Adverse Impacts

Electrohypersensitivity (EHS)

EHS is a medically recognised<sup>20</sup> condition that affects people who have developed an intolerance to RFRs. Research has indicated a relatively high incidence amongst those living near mobile phone base stations<sup>21</sup>. Common EHS (electromagnetic hypersensitivity) symptoms

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<sup>11</sup> Kostoff et al. (2020)

<sup>12</sup> Stefi, et al. (2019). Mobile phone electromagnetic radiation affects Amyloid Precursor Protein and  $\alpha$ -synuclein metabolism in SH-SY5Y cells. <https://pubmed.ncbi.nlm.nih.gov/30850244/>

<sup>13</sup> Sobel et al (1995) Occupations with Exposure to Electromagnetic Fields: A Possible Risk Factor for Alzheimer's Disease <https://pubmed.ncbi.nlm.nih.gov/7677130/>

<sup>14</sup> Hallberg, O., and Johansson O. (2005). Alzheimer mortality—why does it increase so rapidly in sparsely populated areas? *Eur Biol Bioelectromag* 1;1-8  
[https://www.researchgate.net/publication/262168098\\_Alzheimer\\_mortality\\_-\\_why\\_does\\_it\\_increase\\_so\\_fast\\_in\\_sparsely\\_populated\\_areas](https://www.researchgate.net/publication/262168098_Alzheimer_mortality_-_why_does_it_increase_so_fast_in_sparsely_populated_areas)

<sup>15</sup> Kostoff et al (2020)

<sup>16</sup> Grigoriev and Khorseva (2018) <https://www.radiationresearch.org/wp-content/uploads/2018/06/Mobile-Communication-and-Public-Health-1.pdf>

<sup>17</sup> Butler (2020), De-Kun Li, MD, PhD, MPH, is a Senior Research Scientist at the Division of Research, Kaiser Permanente Northern California. <https://microwavenews.com/news-center/de-kun-li-crc>

<sup>18</sup> Li et al. 2011, 2012

<sup>19</sup> Birks et al. (2017) Maternal cell phone use during pregnancy and child behavioural problems in five birth cohorts - <https://www.sciencedirect.com/science/article/pii/S0160412016307383?via%3Dihub>

<sup>20</sup> WHO (2005).

<sup>21</sup> Santini et al. (2003) Study of the health of people living in the vicinity of mobile phone base stations [https://www.researchgate.net/publication/228363510\\_Study\\_of\\_the\\_health\\_of\\_people\\_living\\_in\\_the\\_vicinity\\_of\\_mobile\\_phone\\_base\\_stations\\_I\\_Influences\\_of\\_distance\\_and\\_sex](https://www.researchgate.net/publication/228363510_Study_of_the_health_of_people_living_in_the_vicinity_of_mobile_phone_base_stations_I_Influences_of_distance_and_sex)

include headaches, concentration difficulties, sleep problems, depression, lack of energy, fatigue, and flu-like symptoms<sup>22,23</sup> EHS can also be diagnosed by the presence of oxidative/nitrosative stress<sup>24</sup>.

#### Risks to animals and plants

Damage goes well beyond the human race, as there is growing evidence of harmful effects<sup>25</sup> to plants and trees<sup>26</sup> and animals<sup>27</sup>. Significant increases in DNA damage were found in the brains and blood of mice, and the hippocampus of male rats<sup>28</sup>. Another study which was focussed on living or working in proximity to mobile base stations found an increase in tumours in brains and hearts of rats<sup>29</sup>, whilst another noted that the impact and severity of neurophysiological and behavioural dysfunctions suffered by mice and rats was linked to the duration and level of exposure<sup>30</sup>.

Many hundreds of scientific papers have now been published on biological effects of non-ionising radiation demonstrating adverse biological interactions occurring within multiple frequency ranges. It should be noted that modulations to RF communications fall within the Extremely Low Frequency (ELF) range. It remains unclear whether it is the RF or ELF frequencies that are most bioactive, but that academic question does not need to be answered at this point in order to be clear that the technology is not safe, as both existing and proposed emissions contain both portions of the spectrum integrated in this way.<sup>31</sup>

Professor Butler's report is consistent with a range of other publicly available material. Some of it was summarised in the European Parliamentary Research Service's 11 Feb 2020 briefing for the Parliament named 'Effects of 5G wireless communication on human health'. This is also attached. It explains:

“research to date has not addressed the constant exposure that 5G would introduce... to implement 5G, cell antennas will have to be installed very close to one another, which will result in constant exposure of the population to millimetre wave radiation... The

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<sup>22</sup> <https://www.jrseco.com/wp-content/uploads/2017-09-13-Scientist-Appeal-5G-Moratorium.pdf>

<sup>23</sup> Belyaev et al (2016) Guideline for the Prevention, Diagnosis and Treatment of EMF-related Health Problems and Illnesses <https://www.ncbi.nlm.nih.gov/pubmed/27454111>

<sup>24</sup> Belpomme and Irigaray (2020) Electrohypersensitivity as a Newly Identified and Characterized Neurologic Pathological Disorder: How to Diagnose, Treat and Prevent it <https://pubmed.ncbi.nlm.nih.gov/32168876/>

<sup>25</sup> Nittby et al (2011) Nonthermal GSM RF and ELF EMF effects upon rat BBB permeability <https://link.springer.com/article/10.1007/s10669-011-9307-z>

<sup>26</sup> Waldmann-Selsam et al (2016) Radiofrequency Radiation Injures Trees Around Mobile Phone Base Stations <https://www.ncbi.nlm.nih.gov/pubmed/27552133>

<sup>27</sup> Balmori, A (2009) Electromagnetic pollution from phone masts. Effects on wildlife <https://www.sciencedirect.com/science/article/abs/pii/S0928468009000030>

<sup>28</sup> National toxicology program 2018b (USA)

<sup>29</sup> Falcioni et al. (2018, p. 496) (2018). Report of final results regarding brain and heart tumors in Sprague-Dawley rats exposed from prenatal life until natural death to mobile phone radiofrequency field representative of a 1.8 GHz GSM base station environmental emission. *Environmental research*, 165, 496-503.

<sup>30</sup> Sharma et al. (2017) Neurophysical and Behavioural Dysfunctions after Electromagnetic Field Exposure: A Dose Response Relationship [https://www.researchgate.net/publication/314296290\\_Neurophysiological\\_and\\_Behavioral\\_Dysfunctions\\_After\\_Electromagnetic\\_Field\\_Exposure\\_A\\_Dose\\_Response\\_Relationship](https://www.researchgate.net/publication/314296290_Neurophysiological_and_Behavioral_Dysfunctions_After_Electromagnetic_Field_Exposure_A_Dose_Response_Relationship)

<sup>31</sup> Mallery-Blythe (2020) 2020 UK and International Consensus Statement of Medical and Scientific Experts on Health Effects of Radiofrequency Radiation (RFR)

European Environment Agency (EEA) has long advocated precaution concerning EMF exposure, pointing out that there were cases of failure to use the precautionary principle in the past, which have resulted in often irreversible damage to human health and environments... The EEA requests that EU Member States do more to inform citizens about the risks of EMF exposure, especially to children... A 5G appeal was presented to the United Nations in 2015, and to the European Union from 2017<sup>32</sup>, with an increasing number of scientists' signing (268 scientists and medical doctors as of 18 December 2019)... The appeal states that a large number of scientific publications illustrate EMF exposure effects such as an elevated risk of cancer, genetic damage, learning and memory deficits, neurological disorders, etc... The appeal recommends a moratorium on the deployment of 5G for telecommunications until potential hazards for human health and the environment have been fully investigated by scientists independent of industry.”

It referred to a review published in the International Journal of Hygiene and Environmental Health (Vol.221, issue 3, 3 April 2018, pp 367-375) named Towards 5G communications systems: Are there health implications? It then explained:

“According to the review, further studies are necessary to improve independent exploration of the health effects. Far less research exists to determine the effects of 5G technologies on humans and the environment, according to another review of studies published in 2018. (That other review of studies is in Environmental Research (Vol.165, August 2018, pp484-495, named 5G wireless telecommunications expansion: Public health and environmental implications)... The study consequently calls for precaution in the deployment of this new technology.”

The paper identifies a number of other recent, respected studies which concluded that there are risks to health from 5G, and that further research is necessary to properly understand the risks.

### **The proposed claimants**

The proposed first claimant lives in central London in an area where 5G is already enabled, and its use is due to increase exponentially. The proposed second claimant lives in an area of Somerset where 5G is not yet enabled; the local cities of Bath and Bristol, which she regularly frequents, are already enabled with 5G. Both are victims for the purpose of s.7 of the Human Rights Act 1998 because their health and life are put at risk by the use and intended use of 5G. They also have ‘sufficient interest’ for the purposes of public law, as they have a serious concern about these matters, are running a campaign, and their health is at risk from 5G.

### **The legal background**

The state is under a positive duty to protect the health and life of the population from foreseeable risks from ‘dangerous activities’ which include the production of radiowaves, due to articles 2 and/or 8 ECHR. The state must regulate the licensing, setting-up, authorisation, and operation of dangerous activities of this nature, in a way which minimises the risks. These

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<sup>32</sup> A summary of that appeal is also attached to this letter.

positive duties require the state (i) to carefully assess, investigate and monitor the risks arising from dangerous activities, taking into account relevant information about those risks; (ii) to inform the public of the evidence of risks, and how those risks may be avoided; and (iii) to put in place appropriate safeguards to protect the public from the risks: *Jugheli & Ors v. Georgia* (38342/05), 13 July 2017; *Oneryildiz v. Turkey* [2005] 41 EHRR 20; *Budayeva v. Russia* 15339/02, 20 March 2008; *Kolyadenko v. Russia* (17423/05 & Ors) 28 Feb 2012; *Brincat v. Malta* (60908/11) 24 July 2014; *Giacomelli v. Italy* (59909/00) 2 Nov 2006, *Tatar v. Romania* (67021/01) 27 January 2009; and *Taskin v. Turkey* (46117/99) 10 Nov 2004. As the latter cases demonstrate, it is for the government to show it has fully assessed and taken into account the risks. The ECtHR cases are consistent with international instruments, such as the Rio Declaration on Environment and Development, principles 10, 15 and 17.

The Secretary of State for Health and Social Care is under a general duty, by s.2A of the National Health Service Act 2006, to take such steps as the Secretary of State considers appropriate for the purpose of protecting the public in England from disease or other dangers to health; including the conduct of research, and providing information and advice. It also states that, for any function which relates to the protection of the public from ionising or non-ionising radiation, and in which the Health & Safety Executive has a function, the Secretary of State must consult the HSE.

#### **Why the Defendants have acted wrongly**

The Defendants have breached the requirements of articles 2 and 8 set out above, for the following reasons.

Firstly, in assessing the risks and supervising and authorising the increased use of 5G technology, they have failed to take into account the extensive evidence that the intended use of it will put health and life at serious risk. In particular, the Defendants do not appear to have taken into account the evidence summarised in the section above, and in the material which accompanies this letter. The Defendants continue to supervise and authorise the expanded use of 5G technology, in various ways, and in doing so must take account of evidence of risk.

The evidence also indicates that children are at particular risk from 5G. The Secretaries of State have failed to take into account the welfare of children (which should be a primary consideration, due to the UN Convention on the Rights of the Child) in assessing the risks and making decisions relating to 5G.

Secondly, the Defendants have failed to bring about a full and independent investigation or expert study into the health risks of 5G. The studies which have so far been conducted are limited and have not fully examined the potential risks to health and life.

Thirdly, the Defendants have not put in place any safeguards to protect the public from the risks.

For example, the Defendants have failed to publicise information which accurately identifies the risks of the technology, or which explains what steps can be taken by the public to avoid the risks. It is relevant that Council of Europe Resolution 1815 (2011) ‘The potential dangers of electromagnetic fields and their effect on the environment’ recommended that states: “8.1.3. put in place information and awareness-raising campaigns on the risks of potentially harmful long-term biological effects”. Very little information is published about 5G, and what there is manifestly overlooks the evidence that 5G poses a risk<sup>33</sup>. The Defendants’ announcements in public are that there is no reliable evidence of risk, which plainly does not reflect the literature, such as that identified by Professor Butler. Thus, the Defendants have failed to take all effective steps to make the public aware of the risks and what can be done to avoid them.

Further, the Defendant Secretaries of State have adopted, and continue to apply, a policy that all 5G technology will only be required to adhere to ICNIRP Guidelines. As explained in the report by Professor Butler, the ICNIRP are not independent of the telecommunication industry, and their risk assessment and guidelines are severely limited. For example, they focus only on short term risk.

As long ago as 2011 the Council of Europe advised Member States not to follow ICNIRP guidance<sup>34</sup>, and that a more reliable method was to determine safe levels of EMF: (Resolution 1815 of 2011 cf. Item 8.1.2 the Council of Europe)

“8.1.2 reconsider the scientific basis for the present standards on exposure to electromagnetic fields set by the International commission on Non-Ionising Radiation Protection, which have serious limitations, and apply ALARA<sup>35</sup> principles, **covering both thermal effects and the athermic or biological effects** of electromagnetic emissions or radiation.” (our emphasis)

In December 2019, the Turin Court of Appeal in Italy, confirming that acoustic neuroinflammation (brain cancer) was caused by mobile phone usage<sup>36</sup>, set out ICNIRP’s conflict of interest:

“...ICNIRP is a private organisation, whose guidelines on radio frequencies have great economic and strategic importance for the telecommunications industry, with which, moreover, several ICNIRP members have links through consultancy relationships... Apart from potential links with the industry, it goes without saying that ICNIRP members should refrain from assessing the health effects of radio frequency

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<sup>33</sup> See, for example

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/215711/dh\\_124899.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/215711/dh_124899.pdf)

<sup>34</sup> Council of Europe Resolution 1815 (2011) ‘The potential dangers of electromagnetic fields and their effect on the environment’, which can be found here: <https://www.icnirp.org/en/frequencies/radiofrequency/index.html>

<sup>35</sup> As low as reasonably achievable

<sup>36</sup> 904/2019 of 3.2.2019, Romeo c. INAIL: [https://www.radiationresearch.org/wp-content/uploads/2020/01/Turin-Verdict-ICNIRP\\_Judgment-SUMMARY-of-the-Turin-Court-of-Appeal-9042019\\_EN-min.pdf](https://www.radiationresearch.org/wp-content/uploads/2020/01/Turin-Verdict-ICNIRP_Judgment-SUMMARY-of-the-Turin-Court-of-Appeal-9042019_EN-min.pdf)

levels which the ICNIRP itself has already declared safe and therefore, not harmful to health.”

In consequence, the policy of only requiring technology to comply with ICNIRP guidance, is not an adequate or effective safeguard.

The Secretaries of State have failed to put in place, or to consider putting in place, any other substantive steps to protect those at risk, such as limitations on 5G around schools or nurseries.

The Secretary of State for Health and Social Care has also failed under public law to inform itself, and to have regard to, the information identified above about the risks to health and life, in discharging his functions within s.2A of the National Health Service Act 2006. Please confirm whether or not the Secretary of State has consulted the Health & Safety Executive, pursuant to s.2A(3 and 4) of that Act. If so, please disclose details of the consultation and the HSE's response.

**Action the defendants are invited to take**

Please respond to this letter, explaining whether you agree to what I have set out above. If you disagree, please identify what you disagree with and explain why and provide relevant evidence. For example, if you assert that you have assessed and taken into account all relevant information about the risks of 5G, please provide evidence to show that you have done so.

Further, please confirm the proposed defendants (so far as relevant) will:

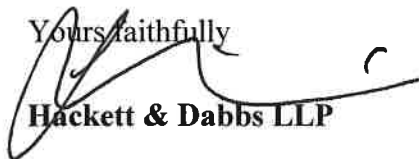
- Impose a moratorium on 5G pending proper research into the health risks relating to the use of 5G technology.
- Bring about a full reassessment of the risks of the intended use of 5G, taking full account of the information summarised above and in the attached reports.
- Bring to an end the policy of only requiring 5G technology to conform with ICNIRP guidance.
- Create new guidance, having regard to the evidence of risk, containing clear safeguards to protect the public from the relevant risks.
- Publish clear and thorough information about the evidence of risk of 5G technology, and what steps may be taken by the public to reduce the risks they are exposed to. Identify steps which will ensure this information is effectively communicated to all members of the public who may be at risk.
- Consider, and impose, further safeguards, such as limitations on the use of 5G near to schools and nurseries, and designated low Radio Frequency Radiation areas so that those who choose to do so can protect themselves.

If you decline to take any of these steps, please give reasons.

I look forward to hearing from you within 14 days.



Yours faithfully



**Hackett & Dabbs LLP**

**Enc.**

- i) **Review of the Health Risks of Radiofrequency Radiation Employed in 5G Technology and the Implications for UK Policymaking, Professor Tom Butler, 20<sup>th</sup> May 2020**
- ii) **European Parliamentary Research Service Briefing on Effects of wireless communication on human health, 11<sup>th</sup> February 2020**
- iii) **5G Appeal: Scientists warn of potential serious health effects of 5G, 13<sup>th</sup> September 2017**