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Charles Parkinson Esq/Deputies of Guernsey
President
Committee of Economic Development
The States of Guernsey
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4th July 2019

Dear Mr Parkinson

5G rollout in Guernsey

I specialize in the biochemistry of oxidative stress -its reactive oxygen components and its antioxidant machinery (enzymic and non-enzymic). My lab has extensive experience on oxidative stress and specializes in the development of innovative assays to measure (in vivo and in vitro) certain molecular parameters of oxidative stress. Such are the superoxide and hydroxyl radicals, both direct markers of oxidative stress. My lab has developed unique *in vivo* and *in vitro* assays for both radicals. Other assays for the indirect assessment of oxidative stress developed in my lab measure DNA damage (such as DNA fragmentation) and thiol redox state. All these assays been successfully applied in studies using various experimental models such as mouse, rat, rabbit, cell cultures (e.g. human umbilical vein cells, CD3 T-cells, yeast), whole blood (human), mussels (*Mytilus galloprovincialis*), flies (*Drosophila melanogaster*), filamentous fungi, spinach leaves, and even soil. I have over 120 published articles with nearly 4000 citations.

I am one of the 248 scientists from 42 nations under the EMF Scientist Appeal who are calling for a moratorium on 5G. We are taking this position, based on extensive research and scientific evidence which has built up from thousands of independent peer studies including the National Toxicology Programme. Many of us believe that WHO should upgrade Radio Frequency Radiation (RFR) as being carcinogenic from

it's proclamation in 2011 that RFRs are possibly carcinogenic. RFRs relate to 2G-4G, WIFI and masts, which is already causing many illnesses including uplifts in brain cancer, tumours, DNA problems & breast cancer. We also believe that there is a big negative impact on mental health apart from the addiction issue. Gaming disorder has now been recognised as a disease by WHO.

5G has not been adequately tested by independent scientists (but it is more or less expected to be as biotoxic as 3/4G) and should go through the same rigorous testing as the introduction of a new drug. 5G will add an additional EMF layer and not replace our current technology with increases in Radio Frequency Radiation.

In a similar way to the tobacco, pharma and energy industries and the asbestos problem, there are court cases now proceeding against the telecom companies due to customers being ill. We should not forget that in the 1930s to 1950s doctors openly advertised cigarettes and even when the proof was there and doctors obtained the proof, tobacco companies fought for decades in the courts at the unnecessary cost of many lives. To this day the tobacco industry has never admitted this fact which kills over 7 million people every year.

I and many independent experts around the world believe, that based on the scientific studies emerging and the fact we are all exposed 24/7, that the health consequences from EMFs and RFs could be even worse than tobacco in the decades ahead.

EMF Scientists Appeal

As one of the Scientists calling for Protection from Non-ionizing Electromagnetic Field Exposure, I show below our statement why we are so concerned and showing why we believe governments must not rely on ICNIRP guidelines or similar bodies who have not carried out enough medical studies:

“We are scientists engaged in the study of biological and health effects of non-ionizing electromagnetic fields (EMF). Based upon peer-reviewed, published research, we have serious concerns regarding the ubiquitous and increasing exposure to EMF generated by electric and wireless devices. These include—but are not limited to—radiofrequency radiation (RFR) emitting devices, such as cellular and cordless phones and their base stations, Wi-Fi, broadcast antennas, smart meters, and baby monitors as well as electric devices and infra-structures used in the delivery of electricity that generate extremely-low frequency electromagnetic field (ELF EMF).

Scientific basis for our common concerns

Numerous recent scientific publications have shown that EMF's affects living organisms at levels well below most international and national guidelines. Effects include increased cancer risk, cellular stress, increase in harmful free radicals, genetic damages, structural and functional changes of the reproductive system, learning and memory deficits, neurological disorders, and negative impacts on general well-being in humans. Damage goes well beyond the human race, as there is growing evidence of harmful effects to both plant and animal life.

These findings justify our appeal to the United Nations (UN) and, all member States in the world, to encourage the World Health Organization (WHO) to exert strong leadership in fostering the development of more protective EMF guidelines, encouraging precautionary measures, and educating the public about health risks, particularly risk to children and fetal development. By not taking action, the WHO is failing to fulfil its role as the preeminent international public health agency.

Inadequate non-ionizing EMF international guidelines

The various agencies setting safety standards have failed to impose sufficient guidelines to protect the general public, particularly children who are more vulnerable to the effects of EMF. The International Commission on Non-Ionizing Radiation Protection (ICNIRP) established in 1998 the "Guidelines For Limiting Exposure To Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz)". These guidelines are accepted by the WHO and numerous countries around the world, **although many in European Union (such as Italy) have adopted 10-fold lower limits because of public health concerns.** The WHO is calling for all nations to adopt the ICNIRP guidelines to encourage international harmonization of standards. In 2009, the ICNIRP released a statement saying that it was reaffirming its 1998 guidelines, as in their opinion, the scientific literature published since that time "has provided no evidence of any adverse effects below the basic restrictions and does not necessitate an immediate revision of its guidance on limiting exposure to high frequency electromagnetic fields . ICNIRP continues to the present day to make these assertions, in spite of growing scientific evidence to the contrary. It is our opinion that, because the ICNIRP guidelines do not cover long-term exposure and low-intensity effects, they are insufficient to protect public health.

The WHO adopted the International Agency for Research on Cancer (IARC) classification of extremely low frequency magnetic fields (ELF EMF) in 2002 and radiofrequency radiation (RFR) in 2011. This classification states that EMF is a possible human carcinogen (Group 2B). Despite both IARC findings, the WHO continues to maintain that there is insufficient evidence to justify lowering these quantitative exposure limits.

Since there is controversy about a rationale for setting standards to avoid adverse health effects, we recommend that the United Nations Environmental Programme (UNEP) convene and fund an independent multidisciplinary committee to explore the pros and cons of alternatives to current practices that could substantially lower human exposures to RF and ELF fields. The deliberations of this group should be conducted in a transparent and impartial way. Although it is essential that industry be involved and cooperate in this process, industry should not be allowed to bias its processes or conclusions. This group should provide their analysis to the UN and the WHO to guide precautionary action.

Collectively we also request that:

1. children and pregnant women be protected;
2. guidelines and regulatory standards be strengthened;
3. manufacturers be encouraged to develop safer technology;
4. utilities responsible for the generation, transmission, distribution, and monitoring of electricity maintain adequate power quality and ensure proper electrical wiring to minimize harmful ground current;
5. the public be fully informed about the potential health risks from electromagnetic energy and taught harm reduction strategies;
6. medical professionals be educated about the biological effects of electromagnetic energy and be provided training on treatment of patients with electromagnetic sensitivity;
7. governments fund training and research on electromagnetic fields and health that is independent of industry and mandate industry cooperation with researchers;
8. media disclose experts' financial relationships with industry when citing their opinions regarding health and safety aspects of EMF-emitting technologies; and
9. white-zones (radiation-free areas) be established".

Conclusion:

I would urge your policy and decision makers to halt 5G and firstly look at the consequences of Radio Frequency Radiation in Guernsey. Other places including Brussels, Florence, Rome, Portland, Oregon & The Netherlands have halted or demanded more health information, refusing to put their citizens at risk. Guernsey would be showing how serious it is about the public's health by doing the same.

Some of the questions I suggest would be sensible to ask yourselves: How close are people living and working near masts? What schools are near masts? What precautions is Guernsey taking especially for children, pregnant mothers and the

elderly who are particularly vulnerable to RFR. What strict legislation is in place for employers and governments to protect employees? What public health advice is in place on EMFs? What warnings are your telecoms companies giving to customers when they buy mobile phones? Many countries such as Greece, China, India, Poland, Russia, Italy and Switzerland have lower emission rules and many countries also have strict rules for about phone sales and use.

Guernsey could create its own policies by studying what other countries are doing as precautionary measures.

As mentioned earlier, litigation is going on against telecom companies and the beauty of an independent country like Guernsey is that you can put public health prudently first. It occurs to me that Guernsey with 62 square kms and just over 60,000 people could be an important world centre to carry out studies. Prevention is the greatest cure and many scientists believe 5g will be superseded and it will become obsolete quickly.

I urge you to reflect, be cautious and carry out studies. Scientific studies have already identified RFRs as a real risk to nature including trees, insects and bees, with many peer studies showing the harm being caused already to our environment.

I appreciate that you may not be aware of this information, as too often we believe that what we cannot see does not harm us.

I hope this is of use to give you valuable information together with various attachments.

Yours sincerely

A handwritten signature in blue ink, appearing to be 'Dr. Christos D. Georgiou', with a long horizontal flourish extending to the right.

Dr. Christos D. Georgiou

Cc CICRA, Deputies of Guernsey, Nicola Brink, Director of Health & David Green