



To: Spectrum Auctions,  
Innovation, Science and Economic Development  
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September 6, 2022

**Re: *Canada Gazette, Part I, Volume 156, Number 25, June 18, 2022, Notice No. SPB-001-22: Consultation on a Policy and Licensing Framework for Spectrum in the 26, 28 and 38 GHz Bands***

**Prevent Cancer Now is pleased to submit comments related to cancer prevention, and calls for:  
*A moratorium on further spectrum auctions***

This is supplementary to the Joint Statement, submitted on behalf of numerous volunteers and organizations. We strongly support a moratorium on further expansion of “wireless” telecommunications capacity, including the proposed spectrum auctions. The proposal to release and auction extensive spectrum to expand telecommunications will result in deployment of novel radiofrequency radiation (mmWaves), that in turn would support increases in presently used radiofrequencies for “wireless” telecommunications. Use of present-day and proposed frequencies are technologically linked, and the various frequencies—proposed and in use—cannot logically be considered in isolation.

Prevent Cancer Now’s submission to the related 2017 consultation<sup>1</sup> is largely unanswered. Since then, concerns regarding human and environmental have become clearer in terms scientific certainty among independent researchers, but have yet to be acknowledged or addressed by the Government of Canada.

The present proposal poses foreseeable, unacceptable risks to human and environmental health, and neither Health Canada nor Innovation, Science and Economic Development Canada, has provided a comprehensive scientific basis to conclude that no harms will ensue from deployment of 5G, using 26, 28 and 38 GHz spectrum and related applications. Whereas limited research indicates biological hazards with deployment of new frequencies, these higher frequencies will support much greater use of other longstanding frequencies, for which there is strong evidence of human and environmental hazards. There is also little if any research on effects of combined exposure to numerous wave forms, that will simultaneously be encountered with increasingly complex technologies.

In this brief, in support of the call for a moratorium in auctioning spectrum for 5G, we:

1. discuss strong and growing scientific evidence that present exposures to radiofrequency radiation used for “wireless” telecommunications are harmful to human and environmental health;
2. present the rationale that although the specific frequencies in question are not rigorously studied, they will enable increased levels of better-studied harmful radiofrequency radiation. The *Precautionary Principle*, operationalized with the *Substitution Principle*, requires use of the safest options; and
3. summarize how fibre/wireline infrastructure is a superior alternative technology offering safer, more secure and resilient, high bandwidth telecommunications.

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<sup>1</sup> <https://preventcancer.ca/submissions/consultation-on-releasing-millimetre-wave-spectrum-to-support-5g/>

**Radiofrequency radiation from present-day “wireless” telecommunications can be harmful. While effects of proposed the proposed spectrum are less certain (not researched), the expansion of 5G will result in intensification of present exposures along with novel mmWaves.**

**Canada’s Safety Code 6** applies to humans, but is unfortunately not protective of human health. Health Canada stipulates that adverse effects from frequencies used for telecommunications arise only from excessive heating of tissues, whereas clear, replicated evidence of molecular, tissue level, organ system and epidemiological harms result with much lower exposures, is published in the peer-reviewed literature. A collection of almost 300 very recent scientific studies (2017 to mid-2022, post-dating the 2015 update of Safety Code 6) is posted at <https://preventcancernow.ca/radiofrequency-radiation-emr-publications-summaries/> and appended to the Joint Statement. This includes primary studies and large reviews compiling increasing scientific evidence, and reiterating that 3G and 4G exposures experienced in “real life” cause increased risks of numerous adverse outcomes. These include, for example, human cancers (e.g., brain and salivary gland tumours especially on the same side as phone use), headaches, male infertility, and hyperactivity/inattention following prenatal maternal cellphone use.

The scale of increases in radiofrequency radiation levels challenge the imagination. A report in *The Lancet Planetary Health* (2018) stated that exposures to frequencies for telecommunications are a quintillion (1,000,000,000,000,000,000) times historical background levels.<sup>2</sup> Many experimental studies, and crucially a study of children,<sup>3</sup> demonstrate that radiofrequency radiation can synergise with toxic chemicals. Clinical criteria are being established for individuals who experience debilitating symptoms in response to low levels of “wireless” radiation, and it is now seen how electrohypersensitivity overlaps with chemical sensitivity. The repercussions of such disability may be more severe with increasing exposure levels and ubiquity of radiofrequency radiation. Cancer rates are higher among individuals who experience MCS; we lack data to test correlations between development of EHS and future risks of cancers.

Health Canada’s *a priori* dismissal of effects of “wireless” radiation at “non-thermal” exposures excludes studies relevant to ambient, real-life exposures. This approach is scientifically flawed and unethical.

### **The environment is not protected against harms of radiofrequency radiation.**

Radiofrequency radiation at commonly encountered levels can affect all biota, from trees that die off starting on the side closest to cell towers, bees that fail to thrive and abandon hives, to migratory birds that apparently “get lost” as they lose their ability to sense the earth’s magnetic field, and much more. Environmental concerns were summarized in “Protect Birds, Bees and Trees: Include Anthropogenic Radiofrequency Electromagnetic Radiation in the *Canadian Environmental Protection Act* (CEPA) Amendments,”<sup>4</sup> This report, co-authored by Prevent Cancer Now, describes how following the HESA Parliamentary Committee review of Safety Code 6 in 2015, Environment and Climate Change Canada (ECCC) was to study potential environmental effects of radiofrequency radiation. This was not done. Thus, there is no consideration much less protections in Canada, against effects on the diverse species in the biosphere on which human health—indeed, existence—is dependent.

This issue was discussed in the Senate during the spring of 2022, in hearings on Bill S-5 amending CEPA. Amendments were moved to collect data and research environmental effects of radiofrequency radiation, but these were stated as being out of scope according to advisory bureaucrats, and did not pass. The *Radiation Emitting Devices Act* is silent regarding modern communications devices.

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<sup>2</sup> [https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196\(18\)30221-3/fulltext](https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(18)30221-3/fulltext)

<sup>3</sup> <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0059742>

<sup>4</sup> <https://preventcancernow.ca/submissions/protect-birds-bees-and-trees-include-anthropogenic-radiofrequency-electromagnetic-radiation-in-canadian-environmental-protection-act-cepa-amendments/>

**Scientific vigilance – data collection and analysis – is necessary for early detection of harms (both human and environmental) including of aggregate and cumulative adverse exposures to chemical and electromagnetic agents**

If Canadians were being harmed as a result of exposures to radiofrequency radiation, how would we know? Epidemiology requires data, so we would need ongoing characterization and monitoring of exposures to radiofrequency radiation, in urban and rural environments. Collection of exposure data, as well as co-exposures and outcome data, are ethically necessary.

In contrast, Canadian oversight is lacking, such that a large proportion of Canadian cell phones was recently reported by researchers in France, to exceed Canadian exposure limits.<sup>5</sup>

Rather than staying in the dark, the government should be investigating. For example, the Canadian Community Health Survey has never included questions regarding use of electronics (e.g., types and means of use of devices, time weekly on calls with the phone held to the head, whether phones are (unsafely) carried close to the body in a pocket or bra, or querying experiences of symptoms indicative of electrohypersensitivity). In contrast, Multiple Chemical Sensitivity has been queried several times, resulting in robust evidence of increasing incidence, along with higher prevalence of co-morbidities, including cancers, than in control populations.

When technologies are licenced, there is an obligation by the regulator and by those doing scientific assessments, to ensure protection of public health. To quote the highly esteemed Canadian epidemiologist, Colin Soskolne, "Technological advances in the absence of evidence of safety is a betrayal of the public trust."

Finally, as detailed in the Joint Statement, there are much safer options. Much that is presently done or planned to be done wirelessly, could be carried out more safely, securely, with lower greenhouse gas footprint, and with as high or higher bandwidth, using fibre optic and wire-line firm connections.

In the context of environmental protection and regulation of hazardous chemicals, Prevent Cancer Now states that the Precautionary Principle should be operationalized using the Substitution Principle, in the context of essentiality and climate imperatives. The same framework could apply to the present situation. Wireless telecommunications fails every test, so should be reserved as the last resort for essential purposes, rather than the first option to fulfill indulgences.

We invite ISED to engage in conversations regarding decision-making over telecommunications, with a focus on human and environmental health, resilience, security, essentiality and a "climate lens."

Respectfully submitted,

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Chair, Prevent Cancer Now

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<sup>5</sup> <https://phonegatealert.org/en/unsafe-canadian-cell-phones>