BACKGROUNDER

Federal government consultation yields surprising common ground: the proposed 5G mmWave auction is premature, at best

Rare agreement between advocates for safer wired networks and telecommunications companies emerged in responses to an Innovation, Science and Economic Development Canada (ISED) Consultation on a Policy and Licensing Framework for Spectrum in the 26, 28 and 38 GHz Bands**.**

Proposed millimetre wave auctions for 5G are premature

Submissions from telecommunications companies encouraged ISED to postpone the millimetre wave (mmWave) auction.

- **Rogers Communications** stated: "At this time, the equipment ecosystem and business cases for mmWave spectrum are not mature enough to justify significant deployments in most locations."
- **Quebecor Media**, one of the larger regional telecommunications providers, states clearly: "holding this auction in 2024 is premature."

U.S. operators are backtracking on mmWave investments, because mmWaves pose important limitations compared to microwaves presently used for wireless connectivity.

- **Rogers** stated: "Patchy performance is the result of weak signal propagation and the ubiquitous presence of buildings and trees that block mmWave signals in urban settings." Further, 5G requires denser, expensive deployments of small cells. They cited a U.S. report that, "the average radius per small cell site was only 500 feet for line-of-sight communication, and much less (just 50 feet in one case) where there were obstructions."

Experts also warn that some bands will compromise weather forecasting and climate monitoring—this can and *must* be avoided.

Citizens, experts and non-governmental organizations support safe, sustainable and resilient wired infrastructure

Remarkably, 270 individuals successfully submitted comments, with 100% opposing the auction of extremely high frequency spectrum.

Many echoed the call by Canadian experts and leading citizens' groups for a moratorium on the release of mmWave spectrum for 5G expansion, that is supported by six reasons:

- **There has been no research** on the long-term health effects of mmWaves.
- **There is strong scientific evidence** that radiation from current (pre-5G) wireless technologies causes serious adverse effects (5G will worsen the existing problems).
- Health Canada's exposure guidelines *(Safety Code 6)* **do not protect Canadians**, or the environment.

- Industry, Science and Economic Development Canada (ISED) **is neither monitoring** exposures **nor enforcing industry compliance** with existing emission standards.
- 5G wireless networks will also **increase risks to privacy and cybersecurity**, interfere with critical satellite data **setting weather forecasting accuracy back 40 years**; contribute significantly to **climate change and pollution**; and **increase economic burdens** as a consequence of higher healthcare costs, lost productivity, security and privacy breaches, and agricultural and environmental damage.
- Releasing the mmWave spectrum and encouraging the deployment of 5G technologies **contravenes principles of *Canada's Digital Charter***.

Individuals discussed human and ecological health, including personal injuries from exposures to wireless radiation. Impacts of these pulsed signals can include long-term disability, and isolation from everyday environments with cellular network coverage. Others reported cancers associated with wireless radiation.

Biodiversity is at risk

Canada is hosting the UN Convention on Biodiversity COP 15 in December, but Canada *completely lacks* environmental protection against radiofrequency radiation. An authoritative, review (Part 1, Part 2 and Part 3) with over 1000 references summarizes how plummeting biodiversity is in part a substantial consequence of escalating wireless radiation, as it ticks past a quintillion (1,000,000,000,000,000,000) times historical ambient levels.

CONCLUSION:
It is time to course-correct our digital highway

At stake is competition for the "wireless last mile." **Canada's digital highway should be fibre-optic cable to all premises, built once and shared by all providers.**

Fibre is the superior choice. It is sustainable, scalable and renewable, offering higher speed and greater capacity, predictable performance, lower maintenance costs, and a longer technological lifetime than fixed-wireless technologies. Importantly, fibre is safe. It is the most future-proof option for communications and information technologies; indeed, ISED is spending millions of dollars on fibre for rural broadband.

ISED should freeze all releases of mmWave spectrum

Industry is in no rush to deploy mmWaves.

First, we must: understand long-term health and environmental impacts of this technology; develop demonstrably safe human and environmental exposure limits; and establish transparent emissions monitoring and industry compliance enforcement.

It is crucial to get this right NOW as we face the twin crises of biodiversity loss and climate change.

KEY INFORMATION:

- **JOINT STATEMENT to Industry, Science and Economic Development Canada (ISED):** https://preventcancernow.ca/call-for-a-moratorium-on-5g-expansion/

- **SIX REASONS for a moratorium on the release of millimetre wave spectrum (mmWaves):** https://preventcancernow.ca/six-reasons-for-a-moratorium-on-the-release-of-millimetre-wave-spectrum-mmwaves

- **Hundreds of recent scientific reports show harms from "wireless" radiofrequency radiation** https://preventcancernow.ca/hundreds-of-recent-scientific-reports-show-harms-from-radiofrequency-radiation

- **WHITE PAPER: Protect Birds, Bees and Trees: Include Anthropogenic Radiofrequency Electromagnetic Radiation in *Canadian Environmental Protection Act* Amendments. (April 2022)** https://preventcancernow.ca/wp-content/uploads/2022/04/RF-EMRinCEPA-WhitePaper-inclAmendments-PCNC4ST-UPDATED2022April7.pdf

- **Stop Wireless 5G Until Health Canada's Safety Code 6 Is Fixed: A Guide to Why and How.** First Edition, Feb. 25, 2022. Canadians for Safe Technology. https://c4st.org/wp-content/uploads/docs/C4STdocs/Guide_Stop-Wireless-5G_First-Edition.pdf

ISED CONSULTATION:

- **Consultation on a Policy and Licensing Framework for Spectrum in the 26, 28 and 38 GHz Bands, SPB-001-22**: https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11778.html