

4G/5G Wireless Infrastructure Risks: “Small” Cells

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Wireless & 5G Warnings

- In 2011 wireless was classed as a Group 2B “possible human carcinogen” by 30 independent scientists of the WHO International Agency for Cancer (IARC)
- Studies since have confirmed brain, reproductive, cardiac, & glucose disruption, birth defects, etc., with scientists from the IARC group asking for reclassification or cautionⁱ
- Concerned increasing exposures & adding 5G frequencies is risky due to power levels & limited but still concerning 5G research, scientists recommend a moratorium^{ii iii iv}

Significant Costs with Nothing Gained

- Only 1-10 mW/m² is needed for cell phones, but small cell levels measure in millions
- Despite industry denial many have adequate wireless access; hence FCC claims refusal amounts to “presumptive” denial of service is wrong
- Incentives do not exist to provide rural areas with better access
- Fee limits set by the FCC subsidize wireless at expense of copper, fiber optic, and cable competition, when wireless is the least secure and most expensive
- Wear and tear of town- or city-owned property, but extreme limits on fees
- Property devaluation: 79% of buyers refuse homes by cellular infrastructure^v

Appearance & Size

- 4G/5G antennas can be 6 cubic feet, placed as close as 10-20 feet from homes; associated equipment may be refrigerator size & up to 28 cubic feet with potentially noisy fans
- Equipment potentially every 100 feet in line of sight and maximum 1/3 mile apart
- Overlapping installations from multiple competing providers, besides cell tower installation

Lack of Safety Review or Monitoring

- Preventing local safety review by “batching” multiple applications as one application under a 60- or 90-day shot clock
- Lack of monitoring by the FCC to insure any compliance with (lax) FCC guidelines and a lack of qualified inspectors or monitoring equipment, especially at 5G frequencies
- Added risk for workers near small cells from higher exposures, falls & heavy equipment^{vi}

Fact sheet courtesy of Last Tree Laws, which works for environmental health legislation.

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- Refusal by FCC to conduct an environmental review of small cell infrastructure or allow protections as required by the National Environmental Policy Act (NEPA)

Aggravations & Serious Hazards

- Wireless investment derails investment in secure fiber to home and maintenance of copper phone lines which work best during power outages
- 5G includes 3.5 to 80 GHz, with untested millimeter frequencies never used for communications
- 5G millimeter frequencies require higher power to work than 3G and use phased arrays that concentrate power & increase exposure
- Small cells are an access barrier for electromagnetic sensitivity, a federally- and internationally-recognized disability ^{vii viii ix x}
- Nickel-cadmium batteries used for 8-hour generators create a fire, explosion and toxic hazard like diesel generators
- Potential design to prevent any damage may mean solidity to the point that a car hitting the equipment would be crushed and kill its occupants
- Wireless is the opposite of green, being substantially more energy intensive than wired infrastructure

ⁱ Concerned scientists from the 2011 IARC committee include L. Hardell, A. Miller, D. Leszczynski, C. Portier, & I. Belyaev; a 2017 Hardell publication describes the politics: World Health Organization, radiofrequency radiation and health - a hard nut to crack

ⁱⁱ The 5G Appeal: Scientists and doctors warn of potential serious health effects of 5G. <http://www.5gappeal.eu>

ⁱⁱⁱ International Appeal: Stop 5G on Earth and in Space. <https://www.5gspaceappeal.org/the-appeal/>

^{iv} International EMF Scientist Appeal. <https://www.emfscientist.org/>

^v Cell Towers, Antennas Problematic for Buyers. (2014, Jul 25) Realtor Magazine.

^{vi} Senator Blumenthal Press Release. (2015, Sept 17). Senator Blumenthal, Representative Eshoo Urge FCC to Enforce Exposure Limits for Those Who Work Near Wireless Towers.

^{vii} Accommodations for People with Electromagnetic Sensitivity. JAN Job Accommodations Network. US Department of Labor’s Office of Employment and Disability.

^{viii} IEQ Indoor Environmental Quality Project. US Access Board. <http://www.access-board.gov/guidelines>

^{ix} Editors Kjell Hansson Mild Mike Repacholi Emilie van Deventer Paolo Ravazzani. (2004, Oct 25-27). Proceedings International Workshop on EMF Hypersensitivity. Prague, Czech Republic. http://www.who.int/peh-emf/publications/reports/EHS_Proceedings_June2006.pdf

^x Johansson, O (2006). Electrohypersensitivity: State-of-the-Art of a Functional Impairment. *Electromagnetic Biology and Medicine*. 24:245-258