October 15, 2020

Dear WSSC,

I am asking for an immediate halt to the AMI "smart" meters until an environmental impact statement/review is completed.

The AMI meters emit Radiofrequency radiation (RFR) and there are no laws in place to ensure protections for birds, bats, insects, bees or trees. You cannot just rollout a network that increases RFR into our neighborhoods when you have not investigated the effects on the environment.

In light of the fact that we are talking about thousands of radiating meters, you have a responsibility to ensure safety for our community and environment by evaluating effects before deployment.

The "health expert hired did not review impacts to trees or insects.

Thank you,
Theodora Scarato
Environmental Health Trust

FCC and ICNIRP limits were not developed to protect our flora or fauna. Wireless radiation “safety” limits for trees, plants, birds and bees simply do not exist. No US agency nor international authority with expertise in science, biology or safety has ever acted to review research and set safety limits for birds, bees, trees and wildlife.

It is a major gap in accountability.

The FCC project that the 5G needs over 800,000 “small” cell tower sites in the US alone. These new “small” cell towers (taller street lights and utility poles) will substantially increase the ambient environmental levels of radiofrequency radiation. Birds do perch on cell antennas. Bats, bees and pollinators will be flying directly through the radiation plumes from these new cell antennas. Tree leaves and limbs will receive high exposures from near direct contact to cell antennas in neighborhoods with heavy foliage.

No agency has ever set limits to ensure safety for wildlife or trees. The FCC limits (outdated) we have are for humans.

Furthermore at this time there is no environmental agency with a funded mandate to ensure bees, trees birds and wildlife are protected in regards to cell tower networks.
It is not that the laws we have are inadequate… it is that we literally have no laws and no agency with oversight when it comes to impacts to our flora and fauna- the environment.

Several literature reviews warn that non-ionizing EMFs are an “emerging threat” to wildlife (Balmori 2015, Curachi 2013, Sivani 2012) and impacts to pollinators are documented in published studies (Favre

2011, Kumar et.al., 2011, Lazaro et al., 2016). Field research has found years of exposure to cell tower radiation damages trees (Waldmann-Selsam, C., et al. 2016, Helmut 2016, Haggerty 2010) and plants (Halgamuge 2017, Pall 2016, Halgamuge and Davis 2019). Radiofrequency radiation has been found to affect the magnetic sense of invertebrates (including insects) (Tomanová and Vácha, 2016; Vácha et al., 2009) birds (Engels et al., 2014) and mammals (Malkemper et al., 2015). Furthermore research shows bees and pollinators could suffer serious impacts from the higher frequencies to be used in 5G as the higher frequencies resonate with their bodies resulting in up to 370% higher absorbed power. Currently there is no U.S. Government-funded research program into the non-thermal biological effects of RF emissions to the environment. The EPA, which formerly conducted such research, lost all of its research funding in 1996, and has done nothing since. In July 2020 the Director of the Radiation Protection Division of the EPA Lee Ann B. Veal wrote Theodora Scarato Executive Director of EHT that the EPA had no funded mandate to regarding wireless radiofrequency matters and that they are not aware of any developed safety limits or research reviews related to impacts of wireless on birds bees and the environment. Read the letter. The EPA stated their last research review was their 1984 Report. The

FCC confirmed in a USTTI webinar October 15, 2020 that their limits were for humans only.

A Petition for Writ of Certiorari to the United States Court of Appeals for the Second Circuit from September 8, 2000. It clarifies how decades ago, when FCC limits were set, the EPA was defunded from properly reviewing the science on harm from electromagnetic fields.

“The Court’s reliance on the EPA was technically correct but substantively naive. What the Court did not realize was that Congress terminated funding for radiation research by EPA in 1996, and no staff has been available at EPA to conduct such research for the past five years.”

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The Court's reliance on the EPA was technically correct but substantively naive. What the Court did not realize was that *Congress terminated funding for radiation research by EPA* in 1996, and no staff has been available at EPA to conduct such research for the past five years.

This Court can properly take judicial notice of the federal budget levels for this agency. Reproduced on the following page is a "Summary of EPA Budget and Staffing for RF Radiation Activities from FY 1990-2000" recently supplied

***26 *Summary of EPA Budget and Staffing for RF Radiation Activities from FY1990-2000* (Extramural Dollars Only)**

FY	90	91	92	93	94	95	96	97	98	99	00
FTE	2.3	2.2	2.1	2.1	2	2	0.5	0.5	0.5	0.5	0.5
$(K)	$0	$40	$25	$543[a]	$73[b]	$140[c]	$0	$0	$25[d]	$0	$0

***27** by the agency in response to a request from Senator Joseph I. Lieberman of Connecticut. It will be seen that only one-half of a staff member is presently assigned to perform EPA's "lead role" in RF radiation health effects, and such has been the case since 1995. It will also be seen that *total* research expenditures in the five years since 1995 amount to a final payment of *$25,000* on a cooperative agreement entered into with NCRP in 1994. Nothing more. In contrast, the EPA research expenditures from 1990 through 1995 totaled *$821,000.* While the Court of Appeals was theoretically correct in its reliance on EPA's lead research responsibility, in practical terms the Court was dead wrong. There is *no* Congressionally funded research into the biological effects of cellular tower RF emissions in the agency to which Congress assigned the """"lead role" in 1970.

Thus when companies state that proposed antennas are FCC compliant, this has no applicability to protections for bees, trees or the environment. As the scientific literature amply demonstrates, findings demonstrate the pressing need for a heavily-funded federal environmental- oriented research program and compliance with NEPA that considers impacts to wildlife from the increased radiofrequency radiation.

SOME RESEARCH STUDIES TO KNOW

Waldmann-Selsam, C., et al. "Radiofrequency radiation injures trees around mobile phone base stations." Science of the Total Environment 572 (2016): 554-69.

Breunig, Helmut. "Tree Damage Caused By Mobile Phone Base Stations An Observation Guide." (2017). You can also download the Tree Observation Guide at: Competence Initiative for the Protection of Humanity, the Environment and Democracy

S Sivani, D Sudarsanam, Impacts of radio-frequency electromagnetic field (RF-EMF) from cell phone towers and wireless devices on biosystem and ecosystem ? A review, Volume 4, Issue 4, Pages 202–216, 2012

Haggerty, Katie. "Adverse Influence of Radio Frequency Background on Trembling Aspen Seedlings." International Journal of Forestry Research2010.836278 (2010).

Halgamuge, M.N. "Weak radiofrequency radiation exposure from mobile phone radiation on plants." Electromagnetic Biology and Medicine, vol. 36, no. 2, 2017, pp. 213-235.

Martin Pall. "Electromagnetic Fields Act Similarly in Plants as in Animals: Probable Activation of Calcium Channels via Their Voltage Sensor"Current Chemical Biology, Volume 10 , Issue 1 , 2016

Shikha Chandel, et al. "Exposure to 2100 MHz electromagnetic field radiations induces reactive oxygen species generation in Allium cepa roots."Journal of Microscopy and Ultrastructure 5.4 (2017): 225-229.

Halgamuge MN, Skafidas E, Davis D. A meta-analysis of in vitro exposures to weak radiofrequency radiation exposure from mobile phones (1990–2015). Environ Res. 2020;184:109227. doi:10.1016/J.ENVRES.2020.109227
Halgamuge MN, Davis D. Lessons learned from the application of machine learning to studies on plant response to radio-frequency. Environ Res. 2019. doi:10.1016/j.envres.2019.108634
Gustavino, B., et al. "Exposure to 915 MHz radiation induces micronuclei in Vicia faba root tips." Mutagenesis 31.2 (2016): 187-92.
Halgamuge, Malka N., See Kye Yak and Jacob L. Eberhardt. "Reduced growth of soybean seedlings after exposure to weak microwave radiation from GSM 900 mobile phone and base station." Bioelectromagnetics 36.2 (2015): 87-95.
"Tree Damage from Chronic High Frequency Exposure Mobile Telecommunications, Wi-Fi, Radar, Radio Relay Systems, Terrestrial Radio, TV etc." by Dr. Volker Schorpp Lecture (about 31 MB)
Shepherd et al., Increased aggression and reduced aversive learning in honey bees exposed to extremely low frequency electromagnetic fields. PLoS One. 2019 Oct 10
Balmori, Alfonso. "Anthropogenic radiofrequency electromagnetic fields as an emerging threat to wildlife orientation." Science of The Total Environment 518–519 (2015): 58–60.
Balmori, A. "Electrosmog and species conservation." Science of the Total Environment, vol. 496, 2014, pp. 314-6.
Cucurachi, C., et al. "A review of the ecological effects of radiofrequency electromagnetic fields (RF-EMF)." Environment International, vol. 51, 2013, pp. 116–40.
Kumar, Neelima R., Sonika Sangwan, and Pooja Badotra. "Exposure to cell phone radiations produces biochemical changes in worker honey bees." Toxicol Int., 18, no. 1, 2011, pp. 70–2.
Favre, Daniel. "Mobile phone induced honeybee worker piping." Apidologie, vol. 42, 2011, pp. 270-9.
"Briefing Paper on the Need for Research into the Cumulative Impacts of Communication Towers on Migratory Birds and Other Wildlife in the United States." Division of Migratory Bird Management (DMBM), U.S. Fish & Wildlife Service, 2009.
"The potential dangers of electromagnetic fields and their effect on the environment." Council of Europe Parliamentary Assembly, resolution 1815, 2011.
Engels, S. et al. "Anthropogenic electromagnetic noise disrupts magnetic compass orientation in a migratory bird." Nature, vol. 509, 2014, pp. 353–6.
Balmori A. "Possible Effects of Electromagnetic Fields from Phone Masts on a Population of White Stork (Ciconia ciconia)." Electromagn Biol Med, vol. 24, no. 2, 2005, pp. 109-19.
Balmori, A. "Mobile phone mast effects on common frog (Rana temporaria) tadpoles." Electromagnetic Biology and Medicine, vol. 29, no. 1-2, 2010, pp. 31-5.

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