

FCC 09-31

**Before the
Federal Communications Commission**

In the Matter of)

A National Broadband Policy for Our Future)

GN Docket No. 09-51

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INTRODUCTION

The EMR Policy Institute (EMRPI) previously documented physical harm to people from the various forms of electromagnetic radiation that would be present with universal wireless broadband. **EMR Policy Comments and Exhibits 3-43**. Wireless broadband deployment throughout the Nation is a major federal action that will permanently and negatively alter the human environment. If wireless infrastructure is the preferred technology resulting for this Broadband NOI there will be few places left where people who are physically harmed by this level of radiofrequency (RF) radiation can live. The EMR Policy Institute supplements its previous comments with these updates based upon additional scientific discoveries, affidavits and facts. **Exhibits 53-65** Additional exhibits to this filing.

UNITED STATES FEDERAL GOVERNMENT FAILURE TO PROTECT THE PUBLIC FROM RADIOFREQUENCY (RF) RADIATION ADDITIONAL EVIDENCE

The Federal Government does not protect people from the hazards of this radiation. Not even Congress can get timely answers to health issues from the FCC. The Domestic Policy Subcommittee of the House Committee on Oversight and Government Reform conducted a hearing on cell phone safety where noted scientists warned of hazards, particularly to children. See: September 25, 2008 Hearing of the Domestic Policy Subcommittee of the House Committee on Oversight and Government Reform - Cell Phone Use and Tumors: What the Science Says at:

<http://domesticpolicy.oversight.house.gov/story.asp?ID=2199>

On November 3, 2008, Representative Dennis Kucinich, Chairman of the Domestic Policy Subcommittee of the House Committee on Oversight and Government Reform, sent a letter to then-FCC Chairman Kevin Martin requesting the FCC to produce

information on the impacts of RF radiation on health and evidence of the FCC's evaluation of health effects by November 17, 2008. See:

<http://domesticpolicy.oversight.house.gov/documents/20081106162519.pdf>

Representative Dennis Kucinich asked the FCC to consider the potential RF radiation health effects before voting on its Order that would authorize the use of the "White Spaces" spectrum for wireless devices operating in the home. The FCC failed to produce the information by the deadline.

The FCC did have the time to go ahead and approve this additional source of RF radiation. On November 4, 2008, the FCC adopted the Second Report and Order on White Spaces, which allowed such use without reporting to Representative Dennis Kucinich on the health impacts or showing any evidence of its consideration of the health impacts despite scientific and public concern that the use of the "White Spaces" spectrum would result in the repeated and long-term exposure to RF radiation, about which the human health effects are not adequately known.

As of July 21, 2009, the due date of the Broadband NOI Reply Comment filing, the public has not seen any FCC response to Congressman Kucinich's request for information that can be reviewed and commented upon in this current Broadband NOI proceeding. The American public has no confidence or assurance that the FCC will deem it important to address, in this Broadband NOI proceeding, long-term, chronic exposure to antenna RF radiation. FCC's failure to give a timely response when specifically asked for information on RF and health by Congressional committees with jurisdiction over domestic policy documents that human health is not even on the FCC agenda.

The FCC persists in giving little time or attention to RF radiation human health and environmental exposure issues. The FCC's failure to explicitly mention or ask for comments about the adequacy of its current RF radiation safety limits further evidences the extent of FCC disregard for RF safety in this Broadband NOI proceeding. This constitutes a glaring failure of oversight by the sole federal agency with the Congressional mandate to set RF safety policy for exposure to RF-emitting infrastructure.

The FCC has yet to address the developments in the peer-reviewed science on RF radiation biological effects and potential adverse health effects that has been published since 1986, the date of the most recent studies in the research record upon which the current FCC RF safety policy is based. Meanwhile, governments throughout the European Union as well as states and municipalities in the United States are taking precautionary actions to address these developments in the scientific record. See EMRPI initial Comment at: http://www.emrpolicy.org/regulation/united_states/index.htm

p. 25 – **Europe Acts to Protect Citizens**

p. 26 - **Precautionary Actions Have Been Taken in U.S. States and Cities to Challenge the RF Safety Policies Promulgated in the TCA**

p. 33 - **Study Conducted at the Request of Germany’s Federal Agency for Radiation Protection**

pp. 34-35 - **School Buffer Zones**

pp. 43-45 - Examples addressing the FCC’s statement:

The Broadband NOI seeks comment on broadband policies of other countries. At p. 19 ¶ 51:

Finally, we seek comment on any national broadband policies or programs adopted by other nations or international organizations that may be useful to the Commission in this proceeding.

EVIDENCE OF ADDITIONAL US MUNICIPALITY’S LACK OF CONFIDENCE IN FEDERAL PROTECTION OF HUMAN HEALTH

On July 7, 2009, the Sebastopol (California) City Council adopted a resolution to actively seek and support federal legislation to repeal limitations on state and local authority imposed by the Telecommunications Act of 1996 that infringe upon the authority of local governments to regulate the placement, construction, and modification of telecommunications towers and other wireless facilities on the basis of the health and environmental effects of these facilities. The Sebastopol resolution also requests the FCC to pursue a comprehensive global analysis of best practices and scientific evidence in order to update its existing standards and to adequately measure the health impacts of

wireless facilities, and calls for greater flexibility for local governments in the State of California to regulate wireless facilities in public rights-of-way.

The Sebastopol vote follows recent similar actions taken by the Los Angeles County Board of Supervisors, Los Angeles Unified School District, City Council of Glendale, California, and City Council of Portland, Oregon.

The resolution presented by Council member Guy Wilson cites, “ongoing debate within the scientific community and among governing bodies throughout the world regarding how thoroughly the long-term health effects of low-frequency electromagnetic and radio frequency (RF) emissions are understood including questions regarding how well the existing regulations established by the FCC protect more vulnerable populations such as children, and how well they protect against the cumulative effect of RF emissions on people who live or work in close proximity to wireless facilities.”

The Sebastopol resolution also points to the April 2, 2009 European Parliament resolution which encourages, “(1) the establishment of setback criteria for wireless antennas, mobile phone masts and other electromagnetic emitting devices to be set within a specific distance from schools and health institutions; (2) stricter regulations and protections for residents and consumers; and (3) more reliable information be made available about the effects of exposure to electromagnetic fields to citizens in an effort to prevent a “proliferation of poorly positioned masts and transmitters.”

**ADDITIONAL SCIENTIFIC EVIDENCE THAT RF RADIATION AT LEVELS
ACCEPTABLE TO FCC HARM HUMAN HEALTH**

EMRPI directs the FCC to **Exhibit 53**¹, the Reply Comment of Cindy Sage of Sage Associates, Santa Barbara, CA. Ms. Sage has been a professional environmental consultant since 1972. She holds an M.A. degree in Geology, and a B.A. in Biology from the University of California, Santa Barbara. She is a Senior Fellow, Department of

¹ Exhibits in EMRPI Reply Comment are numbered to follow consecutively Exhibits 1 – 52 of EMRPI’s initial Comment.

Oncology, School of Health and Medical Sciences, Orebro University, Orebro, Sweden (2008-2010). Ms. Sage is a published author on the subject of the biological effects of electromagnetic fields and is the co-editor of *The BioInitiative Report: A Rationale for a Biologically-based Public Exposure Standard for Electromagnetic Fields (ELF and RF)*. www.bioinitiative.org In her statement, based on her knowledge and analysis of the weight of evidence in the peer-reviewed, published literature on this subject, she delineates the inadequacies of the FCC's current RF exposure limits at:

4. My professional involvement in this area includes constraint analysis, environmental planning, and impact assessment on EMF issues for more than 20 years. My company has provided professional consulting services to city and county planners, private developers, state agencies and schools with respect to measurement and assessment of EMF as a part of land planning and environmental constraints analysis since 1972. I have been an expert witness on EMF policy, public perception and land use issues, and have qualified both in state and in federal court proceedings as an expert witness in this area.
9. BPL [Broadband Over Power Lines] has the potential to expose entire communities to a new, continuous, involuntary source of RF radiation. The RF signal will be carried on everyone's home wiring, even in the homes of those who do not wish to subscribe.
10. American families cannot "opt out" of blanket wireless broadband and BPL exposures.
11. There are legitimate health concerns regarding exposure to radiofrequency radiation (RF), which has rapidly become one of the most pervasive environmental exposures in modern life.
12. There are hundreds of studies on adults in high quality, peer-reviewed scientific and public health journals that report health impacts from exposure to radiofrequency radiation (RF) at levels far below existing public safety limits.
13. The existence of low-intensity (non-thermal) effects from wireless technologies is established.
14. Existing FCC uncontrolled public safety limits are inadequate to protect public health.

15. New, biologically-based public exposure standards are needed.
16. It is not in the public interest to wait.
17. There are very few studies on the impact on children's health from RF.
18. Children are more vulnerable to environmental toxins and carcinogens than adults.
19. Children cannot remove themselves from potentially harmful wireless exposures.
20. The US government has a duty to protect the health and welfare of children.
21. Health care costs that will be associated with widespread and unavoidable exposures to low-intensity radiofrequency radiation from wireless broadband and BPL will have a negative economic impact on the American economy.
22. There is no informed consent by the American public about wireless health risks.
23. Prudent public health actions are warranted now, that are proportionate to the potential health risks and enormous populations at possible risk.
24. Alternatives are available for Internet connectivity.
25. The US should implement fiber optic, cable and other wired solutions for Internet connectivity and Smart Grid technology instead of wireless broadband and BPL.

ELECTROHYPERSENSITIVITY AND DIABETES AGGRAVATED BY RF RADIATION – DOCUMENTED IN SCIENCE BUT IGNORED BY FCC

Recently published peer-reviewed scientific studies describing electrohypersensitivity (EHS) and diabetes effects of exposure to low-intensity levels of RF radiation are not addressed in the current FCC safety limits. **Exhibits 54 through 57.** Numerous affidavits outlining injury from RF by people with electrohypersensitivity and people with diabetes were set forth in the EMRPI initial filing and this filing. Some examples from the initial filing include **Ex. 11, Ex.5-8, 10, 12-13, 17-20, 33-35, and 30-41.**

Electrohypersensitivity (EHS) and diabetes are two examples of chronic diseases and impairments that will carry a heavy price tag for the US health care system if the

Broadband Plan increases the American public's exposure to RF radiation due to wireless infrastructure build out throughout America.

Biological Markers of Electrohypersensitivity

Changes in the Blood. The Dahmen *et al* study, "Blood laboratory findings in patients suffering from self-perceived electromagnetic hypersensitivity (EHS)", *Bioelectromagnetics* 30:299-306, 2009, gives the findings of researchers from the Department of Psychiatry, University of Mainz, Germany. Their findings link electrosensitivity to blood markers that may serve as reliable indicators of physiological EHS symptoms. **Exhibit 54** The researchers analyzed clinical laboratory parameters including thyroid-stimulating hormone (TSH), alanine transaminase (ALT), aspartate transaminase (AST), creatinine, hemoglobin, hematocrit and c-reactive protein (CRP) in subjects suffering from EHS and in controls. These tests are routinely used in clinical medicine to identify or screen for common somatic disorders. The researchers reported:

Our results identified laboratory signs of thyroid dysfunction, liver dysfunction and chronic inflammatory processes in small but remarkable fractions of EHS sufferers as potential sources of symptoms that merit further investigation in future studies. In the cases of TSH and ALT/AST there were significant differences between cases and controls. The hypotheses of anaemia or kidney dysfunction playing a major role in EHS could be unambiguously refuted. Clinically it is recommended to check for signs of treatable somatic conditions when caring for individuals suffering from self-proclaimed EHS.

Changes in Brain Activity. "Altered cortical excitability in subjectively electrosensitive patients: Results of a pilot study," *Journal of Psychosomatic Research*, 62: 283-288. 2007 Landgrebe *et al* study **Exhibit 55** The Abstract states:

Objectives: Hypersensitivity to electromagnetic fields is frequently claimed to be linked to a variety of unspecific somatic and/or neuropsychological complaints. Whereas provocation studies often failed to demonstrate a causal relationship between electromagnetic field exposure and symptoms formation,

neurophysiological examinations highlight baseline deviations in people claiming to be electrosensitive.

Methods: To elucidate a potential role of dysfunctional cortical regulations in mediating hypersensitivity to electromagnetic fields, cortical excitability parameters were measured by transcranial magnetic stimulation [TMS] in subjectively electrosensitive patients (n=23) and two control groups (n=49) differing in their level of unspecific health complaints.

Results: Electro-sensitive patients showed reduced intracortical facilitation as compared to both control groups, while motor thresholds and intracortical inhibition were unaffected.

The **Discussion** section of the published study ends in asserting:

Taken together, our study gives further evidence that TMS is a useful tool to elucidate alterations in cortical processing underlying different diseases and behavioral traits. In this context, we could demonstrate for the first time that subjectively electrosensitive patients display changes of centrally mediated processes indicated by reduced intracortical facilitation, which may contribute to symptom manifestation.

Neurophysiologic and Cognitive Alterations. “Cognitive and neurobiological alterations in electromagnetic hypersensitive patients: results of a case-control study,” *Psychological Medicine*, 38:nn1781-1781. (2008 follow-on study from the Landgrebe team) : **Exhibit 56:**

Background: Hypersensitivity to electromagnetic fields (EMF) is frequently claimed to be linked to a variety of non-specific somatic and neuropsychological complaints. Whereas provocation studies often failed to demonstrate a causal relationship between EMF exposure and symptom formation, recent studies point to a complex interplay of neurophysiological and cognitive alterations contributing to symptom manifestation in electromagnetic hypersensitive patients (EHS). However, these studies have examined only small sample sizes or have focused on selected aspects. Therefore this study examined in the largest sample of EHS EMF-specific cognitive correlates, discrimination ability and neurobiological parameters in order to get further insight into the pathophysiology of electromagnetic hypersensitivity.

Method: In a case-control design 89 EHS and 107 age- and gender-matched controls were included in the study . . . Cortical excitability parameters were measured by TMS.

The **Discussion** section to this study concludes that:

Taken together, we found in the up-to-date largest sample of electromagnetic hypersensitive patients significant differences on a cognitive (tendency to increased rumination and intolerance against physical symptoms) and

neurobiological (altered ICF) level, pointing to a greater genuine individual vulnerability. This fact along with miscellaneous environmental influences may lead to the generation of symptoms in patients with electromagnetic hypersensitivity. Due to the study design it cannot be ruled out that along with a genuine vulnerability, long-term exposure to EMF may promote the exacerbation of electromagnetic hypersensitivity. But other stressor with ubiquitous prevalence in modern societies could serve as triggers as well.

Diabetes –Electromagnetic radiation pollution alters control of blood sugar. “Dirty Electricity Elevates Blood Sugar Among Electrically Sensitive Diabetics and May Explain Brittle Diabetes,” *Electromagnetic Biology and Medicine*, 27: 135-146, 2008. Researcher Havas documents changes in plasma glucose, in response to electromagnetic pollution, for numerous measurements on four subjects – two with Type 1 diabetes taking insulin and two with non-medicated Type 2 diabetes. **Exhibit 57.** They include men and women, ranging in age from 12-80, as well as individuals recently diagnosed and those living with the disease for decades.

In the **Discussion** section of this study, Havas explains:

In this study, we classify diabetics whose blood sugar responds to electromagnetic pollution as Type 3 diabetics. In contrast to true Type 1 diabetics who produce insufficient insulin and true Type 2 diabetics who are unable to effectively use the insulin they produce, Type 3 diabetics are responding to environmental triggers that affect blood sugar readings and blood viscosity. These individuals may be better able to regulate plasma glucose by controlling their exposure to frequencies in the low RF range, and thus differ from true Type 1 and Type 2 diabetics whose blood sugar is not affected by this type of electromagnetic exposure.

The increase in blood viscosity with increasing exposure to dirty electricity is a critical observation. If this turns out to be the case among electro sensitive individuals, it may explain the symptoms of headaches, chest pain, higher blood pressure, blurred vision, and fatigue.

In the **Conclusions** sections of this publication, Havas suggests:

The increasing exposure and ubiquitous nature of electromagnetic pollution may be contributing to the increasing incidence of this disease and the escalating cost of medical care. Diagnosis of diabetes needs to be done in an electromagnetically clean environment to prevent misdiagnosis, and to properly assess the severity of this disorder. Most medical centers have electronic equipment and use fluorescent

lights that produce dirty electricity, which is likely to cause abnormally high blood sugar readings for those with a combination of diabetes and electro hypersensitivity (Type 3 diabetes). Dirty electricity may also explain why brittle diabetics have difficulty controlling their blood sugar levels.

What is significant in the Dahmen and Havas studies is the measurement of changes in biomarkers in the blood chemistry of the test subjects after exposure to electromagnetic fields. These are objective findings, not subjective descriptions of sensations or effects experienced by the subjects. Objective measurements of change in these biomarkers are recognized evidence of adverse health effects related to other known disorders. The Landgrebe studies measure an objective neurophysiological marker, i.e., intracortical facilitation, which is evidence of an alteration of central nervous system function.

PERSONAL INJURIES FROM ELECTROMAGNETIC RADIATION

EMRPI included in its initial Comment the sworn statements of over forty individuals that authorize EMRPI to speak in this proceeding on their behalf and who describe concrete and particular harms such as pain, disability, electrohypersensitivity (EHS), fear of harm, concern for their children's health and safety, and compromise to their immune systems that they have encountered from existing levels of electromagnetic radiation and/or harms they will encounter if wireless broadband is initiated everywhere. See **Exhibits 3 through 43**.

AFFIDAVITS OF INJURY

CONTINUED

Seven additional individuals have submitted affidavits in this Reply Comment round that authorize EMRPI to speak in this proceeding on their behalf and describe concrete and particular harms such as pain, disability, electrohypersensitivity (EHS), fear of harm, concern for their children's health and safety that they have encountered from existing levels of electromagnetic radiation and/or harms they will encounter if wireless broadband is initiated everywhere. **Exhibits 58 through 65**. Highlights of some of these experiences are detailed here:

Exhibit 58 CAMILLA REES of Boulder, Colorado. Electromagnetic radiation causing sleep disruption, fatigue, palpitations, dizziness, blurred vision and loss of sleep drove Camilla Rees from her apartment in New York (a cell phone antenna was mounted on the top) to an apartment in San Francisco (later discovered to contain telecommunications transmitting equipment), to another apartment in San Francisco (the next door tenant mounted a wireless router on the other side of her bedroom) and then to Boulder, Colorado.

In none of these cases was I given notice harmful microwave radiation-emitting equipment was present and in none of these cases did I have any choice in the matter, despite thousands of studies I have since learned exist that show biological effects from microwave radiation.

I have spent the last year and a half living in temporary housing while attempting to get well, at great personal expense.

I remain sensitive to microwave radiation from cell phones, wireless networks, portable phone and neighborhood antennas. I am a financial industry professional by training with an MBA and am virtually excluded from employment in any conventional office building with wireless and from any job that requires regular cell phone communication. It is hard to see my way beyond this problem because the proliferation of wireless technologies goes on unabated.

When I was experiencing these debilitating exposures in San Francisco, I could not find any doctor knowledgeable about this subject, and in a very impaired state, was left to design my own recovery. I attempted to get disability recognition but was initially rejected and couldn't pursue it further being so impaired. It seems futile to interact with the bureaucracy on this matter when electro-hypersensitivity, I have learned, is not recognized as a functional impairment in this country, as it is in others. I would rather put my efforts into creating change in this country so that I can live unimpaired and up to my potential instead of giving up and succumbing to disability. I have spent many thousands of dollars of my own money restoring my health, learning to assess and remediate environments, and have given of my expertise freely to others in the same dire straits I experienced. This is a survival issue for people impaired and must be understood as such.

The prospect of wireless broadband and Wi-Max blanketing this country will once again be life-altering for me, and for many, many others whom I

have since met who are experiencing the same difficulties. People like myself will need to move to more and more remote areas, or overseas to countries addressing this issue by lowering exposures, instead of increasing them as we are doing in this country. I do not dare get my belongings out of storage and attempt to settle somewhere permanently until I know a cell tower will not appear across the street, antennas will not be attached to the building, neighbors' wi-fi won't be coming through the walls or high-powered Wi-Max won't be pervading the neighborhood. I have been forced to live with minimal possessions, paying for storage at great expense, to accommodate the flexibility needed.

Camilla Rees' experiences have led her to conclude that wireless radiation exposure is a crime against humanity. She has taken action. She is the founder of www.ElectromagneticHealth.org, co-author of "*Public Health SOS: The Shadow Side of the Wireless Revolution*" and creator of the **EMF Petition to Congress** found at www.electromagnetichealth.org. This petition signed by people in 47 states and 25 foreign countries, asks Congress to:

- 1) lower exposure guidelines for industry (allow less RF)
- 2) repeal federal law preventing state and local governments from limiting antennas
- 3) place a moratorium on further antenna build-out until Congress understands the science]
- 4) provide accommodation for those have been harmed.

Ms. Rees explains that it is time to stop forcing people already suffering from exposure to try to protect themselves and time to stop increasing the radiation exposures.

Remediation strategies that are possible for people today are at best short-term band-aid solutions to a problem that requires federal attention. People should not have to spend their time and money insulating homes and offices from the insidious electromagnetic pollution from microwave radiation that continues to pervade our spaces unchecked.

Government, instead, needs to take a stand for public health. It needs to acknowledge the large percentage of people impacted today (an estimated 3-8% of populations in developed countries), recognizing the functional impairment people suffer. And it needs to look at what the science suggests about the chronic effects from electromagnetic fields on us all, whether people are experiencing symptoms now or not. We must look squarely at the science and recognize the link, and potential link, between the growth in electromagnetic fields since the early 1990s and the mysterious growth in chronic and serious illnesses since then, ranging

from ADD, to depression, obesity and diabetes, autism, and insomnia, to name only a few. Many of these problems respond favorably when electromagnetic field issues in the environment are addressed,

Wireless telecommunications technologies have disrupted our brains, impaired our quality of life, lowered productivity, accelerated health care costs borne by individuals and by society, impaired the learning capacity of children, damaged our DNA, impaired fertility, and in all of these ways threaten our economy and the life we take for granted. We need powerful leaders to acknowledge the truth of how people like myself have been severely harmed, and to take the steps necessary to protect our collective health.

Ms. Rees concludes that only wired technologies should be used.

Wireless broadband, Wi-Max, as well as Broadband Over Power (BPL) utility technologies that put radiofrequency radiation onto home and office wiring, are considered by many scientists to be very bad ideas that will likely harm millions of people, possibly making life unlivable here for those who are electrically sensitive, and for those who become electrically sensitive as a result. The U.S. government should instead be emphasizing WIRED technologies for voice and data transmission, expanding technologies such as cable and fiber optics, which are more optimal from health, capacity, reliability and long-term investment value perspectives. Finally, residential areas should be designated wireless free to assure those impaired by these technologies a safe living environment, avoiding the 'second hand radiation' problem I experienced in San Francisco, where I had no legal ability to prevent neighbors from using a wireless router. I had to endure the time and cost of moving with absolutely no legal rights to prevent my neighbor from harming me in this very significant way. Besides residential areas, schools, nursing homes, retirement facilities, day care centers, parks, government buildings, public transportation, public spaces, and other places where vulnerable people live and travel through should be guaranteed to be wireless-free.

EXHIBIT 59 CLARK CURTIS of Newport, Vermont lives with his wife and two children 250 feet from a cell tower. They do not feel safe, but have been unable to sell their home.

We have had loss of sleep, not feeling well, headaches etc., ever since these antennas were energized, we believe all directly related to the antennas.

When they attempted to find an agency to make sure that the carriers were not exceeding the radiation limits, no one in their state could tell them who could answer their questions or guarantee compliance. Mr. Curtis observes:

This technology is leading down the same road that smoking did in the 60's, at one time it was considered safe. Wireless emissions at the current levels are the second hand smoke of the 21st century.

Exhibit 60 OLEMARA PETERS of Redmond, Washington enlarged upon the affidavit she submitted previously. Because she wishes to limit her exposure, she is being turned into second-class citizen by the destruction of all spaces free of electro pollution and the elimination of all existing landline-phones infrastructure – notably including public phones. She details her physical symptoms when she tried to use a WiFi card in her laptop to navigate on a road trip.

Exhibit 61 DIANE ANTON of Kokomo, Indiana developed electro-hypersensitivity with headaches, body pain and other symptoms that disabled her to the point she could no longer work. Her home was measured for electromagnetic radiation by Dr. Bill Curry, physicist, who advised her to leave her home due to the RF. (see attached article-“Radio waves may cause Kokomo hum”). Diane Anton left her home due to these radiation levels.

Exhibit 62 ARLENE RING of Wickliffe, Ohio woke up with a headache every morning once a cell tower was erected and the antennas activated 1100 feet from their home. She developed floaters and flashers in her eyes and her symptoms get worse when she uses the computer. Her husband began experiencing irregular, skipped and rapid heart beats. She cites studies on the effects of this radiation on humans. She articulates this invasion of her rights.

I can choose to not talk on a cell phone and I can choose to not use a computer, but much of the wireless radiation I am exposed to I have no choice about. It is an invasion of my rights and my home if more and more wireless and new technologies are installed that radiate into my home and neighborhood that regulated by insufficient safety standards.

She worries that her married daughter in New York, who also has some of the same

symptoms and was able to reduce her symptoms by putting up shielding material on her windows, will not be able to avoid radiation if wireless broadband is deployed nationally.

Exhibit 63 RICK DUBOV of Valley Village, California recounts that his life has been dramatically changed by what he characterizes as “this EMR assault”. “My life as I once knew it has been taken away from me by the insanity of this massive introduction of EMR...” Daily life has become a struggle. His ears and brain ring and sizzle 24 hours a day. He has been told this is “tinnitus”. Extreme dizziness, impaired motor skills, hand tremors, nausea, blurred vision, extreme fatigue, joint pain, sleep loss plague his daily living. He can not function professionally and his social interactions have become difficult. “I feel that my God given right to move freely as a human being has been removed and robbed from me.”

Exhibit 64 SANDRA CHIANFONI of Monterey, Massachusetts and her partner have had difficulty sleeping, a feeling of full ears filled with noise non stop, body heating, nausea, head aches, nose bleeds, disorientation, itchy watery eyes, lack of focus and concentration since the installation of a “smart meter” on their home. Their home has double the harmonics allowed by IEE519-1992. Their lights flicker and their satellite signal fluctuate with interference. Engineers have advised that they have a serious problem with both noise and wireless signals. Their children are also exposed during school hours to WiFi.

Although she has measured this RF with a spectrum analyzer over the last 2 years and reported it to the utility, the local and State Government agencies, no one in the government has responded or offered any help in mitigating this problem. “We are suffering and have lost our right to happiness and safety in our community and home.” Sandra has researched this radiation and includes numerous citations that demonstrate it is hazardous. They have suffered monetary hardship in trying to get help and mitigation. They cannot sell their home to get away because they have made the problems known and the housing market has collapsed.

Exhibit 65 LAURA MUNSON of Falls Village, Connecticut, fears for the well being of her grade school-aged children since a cell tower is being built near the school. She urges review of ElectromagneticHealth.org; Expressions of Concern from Scientists, Physicians, Health Policy Experts and others.

RELEVANT COMMENTS ON HEALTH FILED BY OTHERS

Other individuals whose initial Comments address questions about the public health impacts of wireless infrastructure include:

- Bill Rosendahl, Councilmember of the City of Los Angeles, at p.1: I am very concerned about recent cell tower proliferation in residential areas of my communities. Overriding these concerns are the severe limits on local authority imposed by Section 704 of the Telecommunications Act and the prohibition on objections based on possible health effects from EMF emissions.
- Sally Hampton, of REACT, Marina del Rey, CA, at p.2: As more communities come face to face with the ugly realities of wireless infrastructure, the large majority of fully informed citizens find they prefer responsible deployment of fiber optic broadband technology, which is superior to wireless technology in speed, reliability, security, durability, energy efficiency, and protections it affords people and the environment from potential hazards of low-intensity radiofrequency radiation.
- Susan Molloy of Snowflake, AZ, at p. 1: Promote broadband access using communication cables and fiber optics – discourage universal wireless broadband and broadband over power lines. Give the highest priority to public health, and effective protection of vulnerable populations, and employ the precautionary principle when safety issues arise.
- Richard Conrad of Waianae, HI, at p.1: Electrical Sensitivities is a real and rapidly growing physical (not psychological) disability. EMF pollution is already at high levels. Please select Broadband technologies that reduce, rather than amplify this problem. The best solution is fiber all the way, or second best, optical and then electrical cable. Adding high frequency signals to powerlines would be sending more electrical pollution directly into everyone’s home, without their consent.
- Shivani Arjuna of Belgium WI, at p. 2: Two of the medical doctors I had been consulting concluded that my symptoms had been caused by my exposure to electrical pollution . . . Americans deserve to have exposure standards that are based on reality and current science . . . We deserve the freedom to choose what

electromagnetic frequencies we are exposed to, just as we may choose whether to use certain chemicals.

HEALTH IMPACTS MUST BE CONSIDERED

Congressman Dennis Kucinich, scientists and individuals all stress the need for the FCC to address the potential health and environmental effects of wireless infrastructure. The FCC failed to include this question in the Broadband NOI as issued. Nonetheless the FCC is required to comply with the National Environmental Policy Act (NEPA) when it undertakes an effort that is, in the words of Acting FCC Chairman Copps, “the most formative—indeed transformative—proceeding ever in the Commission’s history.”

(Emphasis added.)

FIBEROPTIC AND HARD-WIRED BROADBAND INFRASTRUCTURE SUPERIOR TO WIRELESS

As expressed in many other initial Commentors’ statements, important additional benefits of choosing fiberoptic and hard-wired broadband infrastructure rather than wireless will be to achieve the additional Broadband NOI goals of deploying the best performing broadband technology along with leveraging broadband technology to make the United States more climate-friendly. Energy consumption required to transmit data through fiber optic cable is minimal compared to the 24-hour-a-day, high-level power consumption required to operate antennas transmitting the same data. Comparison of electric power production demands for hard-wired vs. wireless infrastructure implementation must be factored into the choice of infrastructure build out for the Broadband Plan if climate issues are truly to be addressed in this NOI.

Comments of individuals and organizations from across the country advocate deployment of fiber optic cable and other wired options for their technical superiority over wireless infrastructure. Their interests include achieving access to the technology that provides

the best high-speed broadband service, deployment of the most energy efficient and secure infrastructure, and job creation in building out the infrastructure. As outlined in these Comments, the American public is expecting to get the best use of federal dollars to provide them with the best quality high-speed access with the fewest negative impacts on their environment. For many Commentors these expectations will only be met by building out fiber optic infrastructure to the greatest extent feasible.

Individuals and organizations whose initial Comments address the superior technical capabilities of fiber optic include:

- Allied Fiber of New York, NY, at p. 8: As the Commission recognizes, fiber optic cable, because of its ability to handle high capacity, high bandwidth transport, is an example of an “advanced broadband technology that, if [widely] deployed, [will] better position the nation’s broadband infrastructure for continued evolution.”
At p. 11: The rising popularity of video over the Internet especially is creating tremendous need for additional high capacity, high quality, high speed fiber.
At p. 13: The ever growing reliance on the Internet for day to day activities, the proliferation of new Internet applications and technologies, and the widespread use of broadband video and mobile services is driving a pressing need for more and more fiber worldwide.
- GVNW Consulting of Tualatin, OR, at p. 17, quoting from March 2006 a publication of the Foundation for Rural Services: *Most importantly, one must recognize that without the underlying wireline network, wireless networks could not exist in their current form. In spite of this obvious fact, large wireless carriers and policymakers alike continue to pursue practices that will in fact undermine the critical wireline network.*
- Big Think Strategies who cites the example of France at p.12: France is one of the top three countries in Europe for fiber deployment, and the regulator’s equal access approach will ensure that by 2012 the country will have more fiber subscribers than any other EU member state . . . France Telecom is the only incumbent carrier in Europe that is deploying FttH [Fiber to the Home] on any meaningful scale.
- James C. Nelson of Olathe, KS, President and CEO of a local Internet Service Provider since 1995, KCNet, Inc. at p. 2-3: Wireless broadband alternatives are simply incapable of meeting the demands of future broadband needs. We must have a stable, regulated physical fiber-based infrastructure that connects every home and business just like the interstate highway system does today.

- The American Library Association (ALA) at p.: Currently, libraries are facing a broadband crisis. Growing demand, increasingly bandwidth-intensive applications and limited funding for bigger pipes have left many libraries unable to provide the necessary Internet access for patrons. To address this challenge, ALA has developed a “fiber to the library” initiative.
At p.3: “Fiber to the library” is often a cost-effective solution that will offer almost unlimited capacity for decades because fiber is often less expensive to operate on an ongoing basis than other technologies.
At p. 6: Perhaps the most intriguing requirements of the national broadband plan laid out in the Recovery Act is the inclusion of “a plan for the use of broadband infrastructure and services in advancing” a series of public policy goals. Deploying high-capacity fiber network to America’s public libraries is the best and most efficient way to meet a number of these goals.

ALA goes on to enumerate the goals of: advancing civic participation; public safety and homeland security; community development; education; and job creation.

- Native Public Media and the National Congress of American Indians at p. 15: . . . Congress and the FCC must deploy the most reliable and long-lasting broadband technology, such as fiber, as a national effort to provide the best, reliable broadband highways across the country and fulfill the intent of the Communications Act of 1934 “to make available, so far as possible, to all the people of the United States, a rapid, efficient, nationwide and world wide wire and radio communications service with adequate facilities at reasonable charges.”
- Doug Power, Research Analyst from Chicago, IL, at p.1: Fiber or Wireless? While point-to-point wireless (and possibly WIMAX) can be considered as segments of broadband infrastructure, the fact remains that fiber optic cable is needed as backbone, for long haul to Points of Presence (POPs) and to the Internet.

The countries with which our workers are competing in Europe and Asia are increasingly installing fiber to the premise.

- John G. Olson of Rockford, IL, at p.1: In my opinion, any investments in broadband Internet access must use the best, fastest, least intrusive on other services method available. Fiber optic seems to be the best available at this time. RF-based systems are subject to interference and broadband over powerline (BPL) causes interference to other services such as public safety radio.
- Elise Kalfayan of Glendale, CA, at p.1: In our neighborhood, we have two wireline providers of broadband service. Residents don’t need less efficient wireless broadband service. Federal law should not require municipalities to allow installations of wireless infrastructure where it is not needed for more phone line capacity and where wireline services provide faster broadband speeds.

- Collin Smith of Riverside, CA, at p.1: In regards to improving the nation's broadband access, I feel the federal government should institute public works programs to lay fiber optic cable for a broadband backbone.
- Bruce Heiar of Round Rock, TX at p. 1: All the existing telephone/cable lines need to be replaced with fiber or have fiber run along side them in parallel to eventually replace them. This is something the companies are not willing to do, because they prefer to over charge their customers for service & bandwidth usage so to pocket that extra money, when they should use that money to expand & upgrade their networks for current & future use.

As expressed in many of the initial Commentors' statements, important additional benefits of choosing fiberoptic and hard-wired broadband infrastructure rather than wireless will be to achieve the additional Broadband NOI goals of deploying the best performing broadband technology along with leveraging broadband technology to make the United States more climate-friendly. Energy consumption required to transmit data through fiberoptic cable is minimal compared to the 24-hour-a-day, high-level power consumption required to operate antennas transmitting the same data. Comparison of electric power production demands for hard-wired vs. wireless infrastructure implementation must be factored into the choice of infrastructure build out for the Broadband Plan if climate issues are truly to be addressed in this NOI. FCC's compliance with NEPA requires this complete analysis before deploying the national Broadband Plan.

HUMAN HEALTH MUST BE PROTECTED

If the Broadband NOI goals of open and equal participation in the process, broadband access for all Americans "no matter who they are, where they live, or the particular circumstances of their individual lives," and a full discussion of "any fact or issues not otherwise addressed in this NOI relating to the adoption or implementation of a national broadband plan," are truly to be achieved, the need for adequate public health safeguards for human RF radiation exposure must be a pivotal consideration in this Broadband NOI proceeding. Choice of which infrastructure to deploy must be based on prudent public health policy given the real potential for universal exposure of the entire American public. This is the FCC's duty in order for its Broadband Plan decision to be in

compliance with the requirements of NEPA. Human Health must be protected. The federal government should not mandate universal exposure with complete disregard for human health.

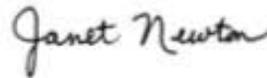
CONCLUSION

EMRPI urges FCC Commissioner Copps to honor his statement that, “the Commission reaffirms its commitment to monitor developments related to the biological effects of RF energy,” issued along with FCC 03-191 Denial of Petition for Inquiry To Consider Amendment of Parts 1 and 2 Regarding Environmental Effects of Radiofrequency Radiation. See: http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-03-191A2.pdf

EMRPI further urges the new FCC Chairman Jenachowski, Commissioner Copps, and their fellow FCC Commissioners to fulfill the goal Commissioner Copps, set out in his June 25, 2009 letter congratulating Chairman Jenachowski upon his confirmation to tenaciously pursue, “a communications policy that puts the public interest first.” See: http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-291690A1.pdf

Respectfully submitted,

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FCC 09-31 Notice of Inquiry GN Docket No. 09-51 - National Broadband Plan for Our Future

**EXHIBIT TABLE To accompany the Reply Comment of The EMR Policy Institute
July 18, 2009**

Number	Name		City State	Description
53	Cindy Sage, MA	Environmental Consultant	Santa Barbara, CA	Expert Testimony on weight of scientific evidence on RF health effects
54	Dahmen <i>et al</i>	<i>Bioelectromagnetics</i> , 2009	Peer-reviewed study scientific journal	“Blood laboratory findings in patients suffering from self-perceived electromagnetic hypersensitivity (EHS).”
55	Landgrebe <i>et al</i>	<i>Journal of Psychosomatic Research</i> 2007	Peer-review study scientific journal	“Altered cortical excitability in subjectively electrosensitive patients: Results of a pilot study.”
56	Landgrebe <i>et al</i>	<i>Psychological Medicine</i> 2008	Peer-reviewed study scientific journal	“Cognitive and neurobiological alterations in electromagnetic hypersensitive patients: results of a case-control study.”
57	Havas	<i>Electromagnetic Biology and Medicine</i> 2008	Peer-reviewed study scientific journal	“Dirty Electricity Elevates Blood Sugar Among Electrically Sensitive Diabetics and May Explain Brittle Diabetes.”
58	Camilla Rees	personal affidavit	Boulder, Colorado	Has not found a new permanent residence because of need to avoid wireless exposures

59	Clark Curtis	personal affidavit	Newport, Vermont	Lives 250 feet in direct line-of-sight from cell phone antenna site with wife and 2 children headaches and sleep loss
60	Olemara Peters	personal affidavit	Redmond, Washington	Points out loss of public spaces free of wireless radiation
61	Diane Anton	personal affidavit	Kokomo, Indiana	Forced to leave home due to RF levels
62	Arlene Ring	personal affidavit	Wickliffe, Ohio	Headaches and vision complaints Public cannot choose to keep away from wireless exposures
63	Rick Dubov	personal affidavit	Valley Village, California	Chronic tinnitus dizziness EHS No longer able to work
64	Sharon Chianfoni	personal affidavit	Monterey, Massachusetts	No help for mitigating exposure issues in home. Children exposed to WiFi at school.
65	Laura Munson	Personal affidavit	Falls Village, Connecticut	Concern for her children exposed to cell tower at school.