#1 original

The Commonwealth of Massachusetts

Initiative Petition for a Law Relative to Corporate Radiation Limits

Be it enacted by the People, and by their authority:

SECTION 1. *The following legislative summary may be removed upon passage of the law.*

This proposed law would establish new requirements for corporations to reduce exposure to wireless and electrical radiation emitted by technology.

The proposed law would require technology companies that design, manufacture, install, or which maintain digital, internet or wireless infrastructure, technology, or services to make design and technology choices that reduce exposure to electromagnetic radiation.

These companies would be required to limit consumer exposure to wireless radiation from personal devices, personal computers, and other technologies, by requiring that these products meet certain design requirements, such as having the ability to limit the number of wireless transmissions, greater functionality in offline, non-wireless, or airplane modes, and increased non-wireless options.

These companies would also be required to design their infrastructure, technology, or services to limit electrical radiation frequencies by using appropriate connectors and good electrical design.

These requirements would apply to new products, services, installations, and infrastructure and, where compatible, to service and product upgrades and software updates. These requirements must be implemented immediately, within two years, or within four years, as further specified in the proposed law.

The proposed law directs the Attorney General to enforce compliance and creates a private right of action.

The proposed law states that, if any of its parts were declared invalid, the other parts would stay in effect.

SECTION 2. The legislature finds and confirms all of the following:-

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Whereas, the International Commission on the Biological Effects of Electromagnetic Fields (ICBE-EMF.org) has provided simple software and hardware solutions that could dramatically reduce our wireless exposures, while noting that even if such exposures continue they are harmful.

Whereas, cellphones are typically the largest individual exposure to radiofrequency radiation, exceeding that of far field cell towers, with requirements to utilize cellphones in all facets of life have increasing since 2004.

Whereas, studies show proximity to cell towers increases cancer, such as a study finding 10.5 times greater cancer incidence *for women* after only the second year of a cell tower installation, despite electromagnetic radiofrequency exposures 1000 times less that U.S. FCC limits; or another study finding cancer death rates significantly elevated within 500 meters of a cell tower (Wolf & Wolf, 2004; Dode et al, 2011)

Whereas, scientists Henry Lai and Narendra Singh decades ago found that radiation comparable to cellphones could cause DNA breaks, but then faced propaganda from industry to discredit their work; Lai has since then compiled peer-reviewed studies to show that most studies find DNA damage, neurological effects, genetic effects, etc., as listed at the Bioinitiative (.org), a scientific project which industry has also sought to discredit.

Whereas, the scientific literature reveals serious threats to life from current wireless exposures such as numerous studies finding damage to sperm and ovaries; DNA damage that can cause germ line mutations in following generations; and infertility in mice after a few generations of wireless radiation exposure (Magdas & Xenos, 1997).

Whereas, reducing power density may reduce some mechanisms of harm as may increasing off-line functionality of wireless devices, although scientific studies also show that extremely low power density exposure allows serious biological effects that still must otherwise be addressed, beginning with limits on particularly vulnerable populations such as children and pregnant women.

Resolved, that the policy goals of this act shall be to limit electromagnetic radiation that is emitted by technology by requiring technology and electrical:

(a) companies to add design modifications in their products that reduce wireless exposures such as limiting transmissions and improving off-line functionality;

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(b) companies to include design modifications that reduce electric and magnetic fields such as shielding and quality filtering;

(c) best practices for settings, selection, and installation of technology software, equipment, and relevant infrastructure;

(d) future-proofing of products and equipment to enable wired functionality with reduced electromagnetic emissions.

SECTION 3. The General Laws are hereby amended by inserting after chapter 166A the following new chapter:

CHAPTER 166B.

CORPORATE RADIATION LIMITS

Section 1.

(a) As used in this section, the following terms shall have the following meanings:

"As Safe As Reasonable and Achievable" or "ASARAA" means that when humans or the environment are exposed to radiation from technology, the exposure should be as safe as is reasonable and achievable with respect to all software design, installation, and technological aspects, such as with regard to but not limited to non-use (an elimination of exposure), pulsing, modulation, frequencies, resonance, power density, polarization, power quality, distance of reach, shielding, filters, grounding, and synergism between frequencies or other bio-active substances.

"Reasonable" means within the term ASARAA a prioritization of safety and does not refer to a risk and benefits analysis - reasonable refers to the fact that prioritizing safety is reasonable. Reasonable design means that non-use or elimination of radiation applies when a potential for great danger to the public or environment exists as judged by a reasonable interpretation of available science, expert warnings, or when effects are unknown.

"Electromagnetic radiation" or "radiation" means all radiation emitted by technology, whether intentionally or unintentionally, and which typically ranges from but is not limited

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to zero hertz to 300 gigahertz as utilized for electrical power and communications. Radiation includes the radiative fields emitted by electricity, including from poor power quality or strong fields; the radiating frequencies that are emitted by wireless technologies; and visible light.

(b) Corporations which design, manufacture, install, or maintain digital, internet, or wireless infrastructure, technological products, or their respective services must within their purview make design and technological choices that limit harm from electromagnetic radiation - exposures from technology must be 'As Safe as Reasonable and Achievable', which will hereafter be called 'ASARAA'. Where products or services are actually intended to operate wirelessly or otherwise intentionally emit radiation, such corporations are to minimize harm with ASARAA design, selection, and best practices.

This directive for ASARAA design refers to all new products, services, installations, settings, infrastructure and, where compatibility exists, to service upgrades, product upgrades, repairs, and ongoing software updates.

(c) General ASARAA design principles and more specific requirements are as follows:

(1) Limit personal and work exposure to wireless radiation from personal devices, personal computers, and other radiating technologies including but not limited to the following requirements:

i. Insure ASARAA design, installation, and selection is easy for users to identify, access, and operate.

ii. Provide hard-wired integration options for wireless technologies and services so that any wireless antenna can be turned off when hard-wired transmission is preferred, including but not limited to smart entertainment systems;

iii. Except where only wireless connectivity can provide functionality of a product or service, insure wired or offline functionality is available and better or comparable in quality than wireless functionality;

iv. Automatically block wireless radiation emissions, but not reception, when positioned close to the head or body;

v. Include a soft key that easily allows *all* wireless transmissions to be turned on or off;

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vi. Include a soft key for a mode that only receives and does not transmit;

vii. Set factory and default mode to wired connectivity, allowing updates, downloads, and installations to occur with wired instead of wireless connectivity and insuring that updates do not restart wireless transmissions that were preset as wired;

viii. With new personal computer, cellphone, and other wireless technology product sales, provide the connecting necessities and ports, with or without Ethernet cables, for hard-wired functionality as part of the sales package so that users are not required to use wireless mice, wireless headphones, and other wireless antennas for functionality.

ix. With respect to data collection, integration, and related work on the part of the user of a device, include simple, preferential functionality for inputting and collecting data offline and for use of wired connectivity for downloading and syncing onto any pertinent device, including a passive storage device.

x. As related to messaging, data collection, and other applications, provide an application that allows users to turn off antenna transmissions individually, as well as identifies the antenna purpose.

xi. As related to messaging, data collection, and other applications, provide an application that easily allows users to specify when a wireless transmission shall begin to send data, such as in 5 minutes or at specific time such as noon, including with preset keys specified by the user that set the time for the signal to begin.

xii. Provide a visible, easily identifiable marker that indicates when wireless transmissions are occurring and which an option of visual and auditory markers to indicate the transmission has completed.

xiii. For wireless transmissions, where possible include an estimation of the length of time expected for data transmission.

xiv. With respect to wireless transmissions, use automated protocol-based reductions of all of the following: the number of emissions, emission duration, and the integrated dose.

xv. Limit the number, reach or distance of, and the power density of antennas to only that necessary for functionality.

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xvi. Where possible and within reason, minimize data collection and increase options to curtail data collection in order to reduce exposures, such as but not limited to collecting billing data quarterly instead of monthly.

xvii. Eliminate continuing transmissions of location so that transmissions only occur when expressly and actively sought by the user for an immediate, defined use, for a time and purpose set by the user.

xviii. Provide an application to turn on location services upon remote inquiry in order to find lost mobile devices.

xix. Set routers, wireless home phones, and other wirelessly transmitting devices to only transmit on demand to provide the specific service intended, turning off when no longer in use, and enable the option to set transmissions to occur only during a certain time frame if so desired by the user.

xx. Provide an easy to access, free application with personal wireless devices to limit call durations according to an estimation of the effective radiated power emitted by the device that allows: (A) users to track and further refine call duration limits beyond any default settings; (B) allow guardians to easily set limits for their children's devices, including disallowing wireless for times specified, with allowances to bypass only under specific conditions specified by the guardian except for allowing continuing access on mobile phones to dial relevant emergency and crisis numbers.

xxi. Insure use of quality connectors and connections that prevent leakage of radiation, and provide information to the user on how long before replacement is needed due to deterioration.

xxii. Modify the antenna of personal mobile devices so the emission pattern is more hemispherical and radiates away from the head and the body.

xxiii. Provide simple, accessible information on how to hard-wire products such as routers.

xxiv. When installing, programming, or setting up relevant technology as part of an installation service, limit radiation wherever possible, using best practices such as but not limited to providing an installation option for hard-wired connectivity, providing distance from and labeling of any wireless antennas, selecting products

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which minimize all electromagnetic exposures; and providing guidance and labeling to maintain best practices to limit exposures.

xxv. When providing broadband or telecommunications services to a residence or business, include ports for hard-wired connectivity, information on how users can insure hard-wired connectivity that turns off wireless transmissions, and reasonable packages to provide partial and full hard-wired installations.

xxvi. Provide large buttons or manual switches that clearly mark and easily turn off wireless transmissions on equipment such as but not limited to routers.

xxvii. Include the option of a long cord with a switch or another mechanism that allows users to turn on and turn off transmissions at a distance from strong near field exposures emitted by static devices.

xxviii. Prefer use of infrared signals where viable, such as for remote switches.

xxix. Provide the location of antennas and sensors on wireless and digital technology within print and online manuals, and provide instructions for the removal of antennas or the elimination of their transmissions such as but not limited to smart devices and appliances.

xxx. When wireless signal is used for transmission, automatically prefer use of antennas which require less power density for connectivity.

xxxi. Provide an application that clearly identifies all sources and purposes of data transmission alongside any options to eliminate and circumscribe the transmissions.

xxxii. Where possible, utilize software capabilities or removal of wireless antennas to reduce higher power density resulting from multiple antennas congregated in a single location.

(2) Limit consumer exposure to radiation from electric and magnetic fields with good design including the following requirements:

i. Limit extraneous frequencies on electrical lines through the use of appropriate filters, connectors, and quality electrical design to prevent the addition of electromagnetic frequencies other than 60 hertz on the electrical lines and to comply with electrical code standard IEEE 519;

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ii. Limit electric and magnetic fields through the use of shielding, grounding, distance setbacks, and quality electrical design.

(d) While subsection (c) above provides some specific requirements, the general principal of ASARAA means that corporations have a duty to be proactive in the prevention of harm through continuing investigation and application of findings to further additional modifications for the best, safest, future-proof design. Corporations have a duty to pay attention to critics, cautions and guidance from existing scientific knowledge around the world from past to present in order to craft safer technology - and a duty to avoid ignorance or compromised, inadequate research as an excuse to avoid responsibility. Recommended resources to guide design include the Building Biology Institute and the International Commission on the Biological Effects of Electromagnetic Fields.

(e) The attorney general shall enforce good faith compliance of this section through adjudication of complaints alleging such violations in accordance with chapter 93A and with chapter 106, section 2-314. This remedy shall not be exclusive and shall be in addition to all other causes of action, remedies and penalties provided by law, and shall allow for a qui tam action as well as a private right of action for product liability and negligence. The office of the attorney general shall provide a mechanism for anonymous reporting of violations. Corporate whistle-blowers shall be provided comparable rewards and protections to that of the Massachusetts False Claims Act and the Massachusetts Whistleblower Protection Act.

SECTION 4. This act shall take effect upon its passage. Upon the effective date of this section, compliance shall be in good faith with steps initiated to implement changes within a month and changes rolled out as soon as functional. Changes that can take place immediately, such as in the best practices for installation shall be implemented within one month of passage. Specific software requirements which require design modification shall be implemented at minimum within 2 years of passage unless sooner implementation is possible, in which case sooner implementation shall take place. Those changes requiring manufacturing or hardware changes should at minimum take no more than 4 years to be enacted, unless sooner implementation is possible, in which case sooner implementation shall take place. Hardware and software changes should be reflected in the interim in the ongoing design of new models.

SECTION 5. The provisions of this act are severable, and if any clause, sentence,

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paragraph or section of this law or an application thereof shall be adjudged by any court of competent jurisdiction to be invalid, such judgment shall not affect, impair, or invalidate the remainder thereof but shall be confined in its operation to the clause, sentence, paragraph, section or application adjudged invalid and such clause, sentence, paragraph, section or application shall be reformed and construed so that it would be valid to the maximum extent permitted.

The undersigned qualified voters of the Commonwealth of Massachusetts have personally reviewed the final text of this initiative petition, fully subscribe to its contents, agree to be one of its original signers and have signaled that agreement by signing below, and hereby submit the measure for approval by the people pursuant to Article 48 of the articles of amendment of the Constitution of the Commonwealth of Massachusetts, as amended by Article 74 of said articles of amendment.

1. Kristin Beatty

2. X Aurelie Bruno (AB)

3. X [illegible signature]

4. Kristin Beatty

5. [illegible signature]

6. Laura Lamothe

7. Robert T Lamothe

8. Robert E McCarthy

9. Rae McCarthy

10. Kathleen Lyford

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