Soft Lights Foundation

9450 SW Gemini Drive
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Beaverton, OR 97008

December 24, 2021

BY EMAIL

David Holt, President
Consumer Energy Alliance
dholt@consumerenergyalliance.org

Re: Spatially Anisotropic Visible-Radiation Devices

Dear David Holt,

We wish to alert the Consumer Energy Alliance of the fraudulent statements being made by the CEA regarding LED radiation devices. Quote: "*There are many benefits including increased energy efficiency*" and "*LED bulbs are designed to be a more energy-efficient light source, by using a semiconductor to convert electricity into light. LED lights use their energy much more efficiently than other types of bulbs*." [1] These are fraudulent statements.

According to the US Department of Energy's website, energy efficiency means "using less energy to get the same job done."[2] The job is to provide uniform illumination with minimal harm. LEDs do not produce uniform illumination[3], but rather they emit radiation from a flat surface which creates a mix of energies that are not uniform. Since LEDs do not do the same job as an incandescent or High-Pressure Sodium, the claim that LEDs are energy efficient cannot be made. LEDs are simply a low quality, toxic, hazardous, and discriminatory type of visible radiation.

Figure 1 is a diagram showing the categorization of radiation and shows that *light* and *illumination* are spatially isotropic radiation in the human visible portion of the electromagnetic spectrum. Radiation emitted by LEDs do meet the regulatory meaning for the purpose of using light for illumination.

[1] https://consumerenergyalliance.org/2021/10/benefits-led-light-bulbs/
[2] https://www.energystar.gov/about/about_energy_efficiency
[3] https://ieeexplore.ieee.org/document/8879542

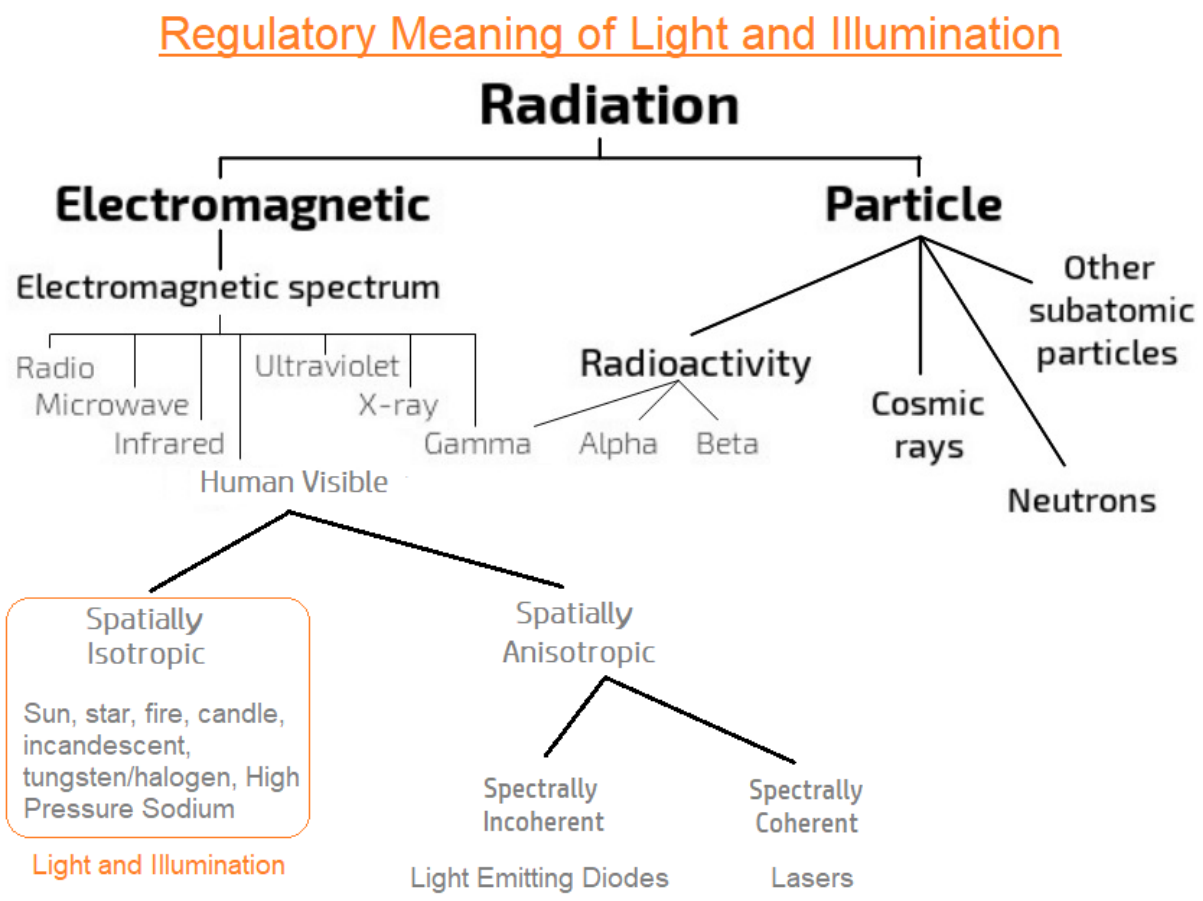

Figure 1 - Radiation Types

Another fraudulent quote on the CEA's website is "*LED bulbs also allow for an overall improved quality of light, as they create a more focused glow than fluorescent and incandescent lights. This allows people to use fewer light bulbs than they would need to with traditional bulbs.*" The truth is that LEDs are an extremely low-quality light because it is non-uniform. The center of the beam is extremely intense and does not spread evenly over the angle to be illuminated. The result of this type of radiation is sickness, epileptic seizures, migraines, psychological trauma, and thoughts of suicide.[4] In an attempt to get complete coverage, typical LED light installations use many more bulbs than traditional incandescent.

As an example of how dangerous LED radiation is, consider this warning shown in Figure 2 from the company Gear Light.

[4] www.softlights.org/stories

Figure 2 - LED Flashlight

To avoid liability, the CEA must remove any claims that LED radiation devices are energy efficient or save energy.

Sincerely,

Mark Baker

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