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April 14, 2022

BY EMAIL

Michelle Phillips, Secretary
New York State Public Service Commission
secretary@dps.ny.gov

Re: The LED Fraud

Dear Michelle Phillips,

The Soft Lights Foundation is a registered non-profit in the state of Oregon. We advocate on behalf of people with light sensitivity disabilities, especially those who are sensitive to LED light beams.

Light Emitting Diodes can be more dangerous than laser beams, and yet LEDs are under regulated. The lack of oversight by government agencies has allowed the widespread installation of LED devices that emit a toxic and hazardous type of visible radiation that interferes with human nerve signaling, resulting in epileptic seizures, migraines, panic attacks, anxiety, agitation, anger, and eye injury. The use of LEDs creates discriminatory conditions, causing severe physical harm and often preventing access to public services and navigation for those who have light sensitivity disabilities. This includes those with epilepsy, migraines, Autism Spectrum Disorder, PTSD, lupus, Electromagnetic Sensitivity Disorder, and other neurological conditions. People with these disabilities are covered by the Americans with Disabilities Act and are entitled to protection from discrimination and entitled to take part in civic life without fear of being harmed by public LED installations.

There are now two types of light on earth: point sources and surface sources. **Point sources** (meaning an infinitely small mathematical point) emit light uniformly in all spherical directions. Examples include the sun, a candle, tungsten filament, and High-Pressure Sodium. **Surface sources** (meaning a non-curved, 2-dimensional surface) emit a directed beam of non-uniform energy. Examples include LEDs and lasers.

While the government has long had regulations for lasers, the government has failed to create specific regulations for LEDs. LEDs are only slightly less focused than a laser, so the light is exceedingly dense, and LEDs emit non-uniform energy, making LEDs even more dangerous than laser light. Human nerves have evolved to receive uniform energy such as from the sun. Humans do not have an evolutionary mechanism to receive non-uniform energy such as from LEDs. LED light can cause sensory overload like a short circuit for those who have a fine sensitivity to electromagnetic radiation.

The Soft Lights Foundation has been collecting research on this topic since 2017 and we have found no way to make LED light safe for everyone. The unnatural non-uniform spatial energy of LED

light is simply not tolerated by many individuals. LED light is a known toxin, and has been shown to cause nausea, epileptic seizures, migraines, panic attacks, lupus flares, and other negative neurological reactions.

The NYSDPS mission is posted on the website as follows:

The primary mission of the New York State Department of Public Service is to ensure affordable, safe, secure, and reliable access to electric, gas, steam, telecommunications, and water services for New York State's residential and business consumers, while protecting the natural environment.

Given that LEDs are not safe for either humans or the natural environment, we see no mechanism to allow their continued use in public spaces. People with Autism Spectrum Disorder, Migraines, Epilepsy, PTSD, Lupus, and others are members of the public and since LED light is unsafe for these members of the public, surface source LED light cannot be used in public spaces without being discriminatory.

The switch to LED technology was based on the claim that LEDs are energy efficient. However, our research has shown that this claim is false. As far as we can tell, this false claim originated as part of the ASSIST program at Rensselaer Polytechnic Institute Lighting Resource Center in New York. The mission of the ASSIST program was to enable the broad adoption of solid-state lighting.¹ The LRC apparently accomplished this mission by performing a sleight-of-hand magic trick which equated luminous efficacy with energy efficiency.

Luminous Efficacy is a measure of the luminous efficiency of a light source. It is the ratio of the total luminous flux emitted to the total power input, expressed in lumens per watt. **Energy Efficiency** is providing the same quality of service using less energy. Luminous Efficacy and Energy Efficiency are not the same thing and thus the statement "LEDs are energy efficient" is false. The switch to LED streetlighting is based on the false claim that LEDs are energy efficient. LED light is a low-quality, industrial light, good for fiber optic communications because of its narrow beam, but toxic to humans when used for the purpose of illuminating a volume of space.

The company Industrial Light and Power provides a typical statement about High-Pressure Sodium light. Quote: "High pressure sodium lamps are quite efficient at about 100 lm/W."² Since HPS is already known to be "quite efficient", it makes no sense to us why city and state governments and utility companies replaced HPS with low-quality LED streetlighting. A document from Pacific Gas and Electric states that the luminous efficacy of HPS is highly efficient, with a luminous efficacy as high as 140 lm/W.³ A Low-Pressure Sodium lamp reaches a luminous efficacy of 200 lm/W.⁴ Given that LPS and HPS have high luminous efficacy, we see no advantage to using LED streetlights, especially considering that LEDs create fundamental barriers to access for anyone whose nerves do not tolerate non-uniform electromagnetic radiation.

¹ <https://www.lrc.rpi.edu/programs/solidstate/assist/>

² <https://www.industriallightandpower.com/lighting-maintenance/high-pressure-sodium/>

³ https://www.lightingassociates.org/i/u/2127806/f/tech_sheets/high_pressure_sodium_lamps.pdf

⁴ https://www.ledrise.eu/blog/led_efficacy_efficiency_explained-lr/

Given that LEDs emit a type of light that cannot be tolerated by certain individuals and given that LEDs create barriers to access and interfere with major life functions such as seeing, thinking, concentrating, and thinking, and given that artificial light at night is highly toxic, and given that LED streetlights are not energy efficient as claimed, the only rational conclusion that we can draw is that LED streetlights must be eliminated.

Sincerely,

Mark Baker

Mark Baker

President

Soft Lights Foundation

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cc: Sachin Pavithran, Executive Director, US Access Board

