December 4, 2009

Honorable Lisa P. Jackson
Administrator
United States Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, NW
Mail Code 1101A
Washington, DC 20460

Re: CAA §112(b)(3), 42 U.S.C. §7412(b)(3) hazardous air pollutants petition to add anthropogenic light to the list of hazardous air pollutants

Dear Administrator Jackson:

Current trends in illumination toward the use of hi-efficiency Light Emitting Diodes and Compact Fluorescent Lights have resulted in the mass production of luminaires that emit far more blue-white light than their predecessors. Blue-white light is known to have impacts upon the human endocrine system[1], human fetal cell tissue[2], human macular degeneration[3], plants[4] and various bacteria[5][6][7][8][9]. Serious concerns exist related to the impact upon humans and exposure to light at night, especially during periods of rest.

I therefore petition the Administrator of the United States Environmental Protection Agency ("Administrator" or "EPA"), pursuant to the Clean Air Act §112(b)(3), 42 U.S.C. §7412(b)(3), to add anthropogenic light to the list of hazardous air pollutants and determine acceptable exposure levels and wavelengths that protect humans and the environment from harm at night.

Sincerely,

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[1] Sensitivity of the human circadian pacemaker to nocturnal light: melatonin phase resetting and suppression Jamie M Zeitzer, Derk-Jan Dijk, Richard E Kronauer, Emery N Brown, and Charles A Czeisler

[2] Blue Light Induces Apoptosis in Human Fetal Retinal Pigment Epithelium Ophthalmology & Visual Science, University Chicago, Chicago, IL

[3] http://www.mdsupport.org/library/hazard.html

[4] Koning, Ross E. 1994. Blue-Light Responses. *Plant Physiology Information Website*. http://plantphys.info/plant_physiology/bluelight.shtml . (12-2-2009).

[5] http://esciencenews.com/articles/2009/01/29/blue.light.destroys.antibiotic.resistant.staph.infection

[6] Differential Activation of *Escherichia coli* Chemoreceptors by Blue-Light Stimuli Stuart Wright, Bharat Walia, John S. Parkinson, and Shahid Khan

[7] Electron acceptor taxis and blue light effect on bacterial chemotaxis. B L Taylor, J B Miller, H M Warrick, and D E Koshland, Jr

[8] Blue Light May Fight Bacteria Associated with Periodontitis J Am Dent Assoc, Vol 136, No 5, 584. © 2005 American Dental Association

[9] Blue light suppresses black-pigmented bacteria in microcosm biofilms K. RUGGIERO[1], A. ABERNETHY[1], A.G. DOUKAS[2], J.M. GOODSON[1], and N.S. SOUKOS[1], [1]Forsyth Institute, Boston, MA, USA, [2]Massachusetts General Hospital, Boston, USA 2007