

# SENATE . . . . . No. 1651

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## The Commonwealth of Massachusetts

PRESENTED BY:

*Cynthia S. Creem*

*To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts in General Court assembled:*

The undersigned legislators and/or citizens respectfully petition for the adoption of the accompanying bill:

An Act   An Act improving outdoor lighting and increasing dark-sky visibility.

PETITION OF:

NAME:	DISTRICT/ADDRESS:
<i>Cynthia S. Creem</i>	
<i>Sean Garballey</i>	<i>23rd Middlesex</i>
<i>Cory Atkins</i>	<i>14th Middlesex</i>
<i>William N. Brownsberger</i>	
<i>Kenneth J. Donnelly</i>	
<i>Carolyn C. Dykema</i>	<i>8th Middlesex</i>
<i>James B. Eldridge</i>	
<i>Ann-Margaret Ferrante</i>	<i>5th Essex</i>
<i>Jennifer L. Flanagan</i>	
<i>Patricia D. Jehlen</i>	
<i>Thomas M. McGee</i>	<i>Third Essex</i>
<i>Karen E. Spilka</i>	
<i>Benjamin Swan</i>	<i>11th Hampden</i>
<i>Bruce E. Tarr</i>	
<i>Daniel A. Wolf</i>	

# SENATE . . . . . No. 1651

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By Ms. Creem, a petition (accompanied by bill, Senate, No. 1651) of Cynthia S. Creem, Sean Garballey, Cory Atkins, William N. Brownsberger and other members of the General Court for legislation to promote energy efficient lighting, conserve energy, regulate outdoor night lighting, and reduce light pollution. Telecommunications, Utilities and Energy.

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[SIMILAR MATTER FILED IN PREVIOUS SESSION  
SEE SENATE, NO. 1481 OF 2009-2010.]

## The Commonwealth of Massachusetts

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In the Year Two Thousand Eleven  
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An Act An Act improving outdoor lighting and increasing dark-sky visibility.

*Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:*

1 SECTION 1. Chapter 85 of the General Laws, as appearing in the 2008

2 Official Edition, is hereby amended by adding the following 3 sections:-

3 Section 37.

4 As used in sections 38 and 39, the following words shall, unless the context  
5 clearly requires otherwise, have the following meanings:

6 “Direct light”, light emitted by a lamp, off a reflector, or through a refractor of  
7 a luminaire.

8 “Foot-candles”, lumens per square foot.

9                   “Fully shielded luminaire”, a luminaire that allows no direct light from the  
10 luminaire above a horizontal plane through the luminaire's lowest light-emitting part, in its  
11 mounted form.

12                   “Illuminance”, the luminous power incident per unit area of a surface, as  
13 measured in lux or foot-candles.

14                   “Lamp”, the component of a luminaire that produces light.

15                   “Light pollution”, exterior artificial light directed, reflected or scattered  
16 upward.

17                   “Light trespass”, light emitted by a luminaire that shines beyond the boundaries  
18 of the property on which the luminaire is located.

19                   “Lumen”, a standard unit of measurement of luminous flux.

20                   “Luminaire”, a complete lighting unit, including a lamp or lamps together with  
21 the parts designed to distribute the light, to position and protect the lamps and to connect the  
22 lamps to the power supply.

23                   “Lux”, lumens per square meter.

24                   “Municipal funds”, bond revenues or money appropriated or allocated by the  
25 governing body of a town or city within the Commonwealth.

26                   “Outdoor parking-lot lighting”, permanent outdoor luminaires that illuminate  
27 automotive vehicle parking areas.

“Part-night or midnight service”, a rate charged by a utility company to provide unmetered electricity for permanent outdoor luminaires that operate for only a portion of each night’s dusk-to-dawn cycle.

“Permanent outdoor luminaire”, a fixed luminaire that is outdoors and intended to be used for 7 days or longer.

“Roadway lighting”, permanent outdoor luminaires intended to illuminate public roadways for automobiles.

“State funds”, bond revenues or money appropriated or allocated by the General Court.

#### Section 38.

(a) No state or municipal funds shall be used to install a new or replacement permanent outdoor luminaire unless the following conditions are met:

(1) for roadway or parking-lot lighting; whether mounted to poles, buildings or other structures, the luminaire is fully shielded.

(2) for building-mounted luminaires not intended for roadway or parking-lot lighting, the luminaire is fully shielded when the rated initial output of its lamp or lamps is greater than 3500 lumens.

(3) for luminaires specifically intended to illuminate building facades, the luminaire is shielded to reduce glare, light trespass, and light pollution to the greatest extent possible when the rated initial output of its lamp or lamps is greater than 3500 lumens.

(4) if a lighting recommendation or regulation applies, only the illuminance levels required for the intended purpose by these recommendations or regulations are used.

(5) if no lighting recommendation or regulation applies, only the illuminance levels required for the intended purpose as defined in recognized standards, including, but not limited to, recommended practices adopted by the Illuminating Engineering Society (IES), are used;

(6) for roadway lighting unassociated with intersections of 2 or more streets or highways, the Department of Transportation has determined that the purpose of the lighting installation or replacement cannot be achieved by installation of reflectorized roadway markers, lines, warnings or informational signs, or other passive means; and minimization of glare, light pollution and light trespass, and minimization of non-renewable energy usage, must be considered.

(b) This section shall not apply:

(1) if a federal law, rule or regulation preempts state law;

(2) if the outdoor lighting fixture is used temporarily by emergency personnel requiring additional illumination for emergency procedures or temporarily used by repair personnel for road repair;

(3) to navigational lighting systems at airports and other lighting necessary for aircraft safety;

(4) to special events or situations that may require additional illumination, including, but not limited to, the illumination of historic structures, monuments, or flags; provided, however, that all such illumination shall be selected and installed to shield the lamp used from direct view to the greatest extent possible, and to minimize glare, light pollution and light trespass; or

(5) if a compelling and bona fide operational or safety need exists that cannot be addressed by any other method.

(c) No public utility company shall install or replace a permanent outdoor luminaire for roadway lighting or parking-lot lighting, if the cost of operating such luminaire is paid for by state or municipal funds, unless:

(1) the new or replacement luminaire is fully shielded;

(2) the illuminance levels required for the intended purpose, as defined in recognized standards, including, but not limited to, recommended practices adopted by the Illuminating Engineering Society, are met but not exceeded; and

(3) the luminaire is designed to maximize energy conservation and to minimize light pollution, glare and light trespass.

(d) The department of energy resources, in consultation with the Department of Transportation, shall promulgate regulations to implement and enforce this section, including a system to ensure that the use of state or municipal funds complies with the requirements set forth herein.

(e) No person shall install a new or replacement luminaire on a residential or commercial property in a manner that creates light trespass or glare on a public right of way sufficient to visually impair drivers of vehicles on the roadway.

Section 39.

(a) The Department of Transportation shall:

(1) review and update warranting and other criteria for roadway lighting, to comply with current standards, procedures and accepted best practices;

(2) make a study of lighting operational costs, and develop recommendations on cost reduction through replacement of existing fixtures with lower-wattage, fully shielded luminaires, and by removal of unnecessary roadway lighting and installation of passive safety measures where possible;

SECTION 2. The department of public utilities shall, subject to its ratemaking authority, develop a rate for part-night or midnight service for unmetered roadway or parking-lot lighting to apply to each new electric utility rate case submitted after August 31, 2013.

SECTION 3. The Department of Transportation shall issue the first report of its findings and recommendations as required in Section 39 (a)(2) to the department of energy resources on or before August 31, 2013, and annually thereafter.

SECTION 4. This act shall take effect on November 1, 2012.