

SENATE No. 01651

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 passage of the accompanying bill:

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

PETITION OF:

NAME:	DISTRICT/ADDRESS:
<i>Cynthia S. Creem</i>	<i>First Middlesex and Norfolk</i>
<i>Sean Garballey</i>	<i>23rd Middlesex</i>
<i>Cory Atkins</i>	<i>14th Middlesex</i>
<i>William N. Brownsberger</i>	<i>24th Middlesex</i>
<i>Kenneth J. Donnelly</i>	<i>Fourth Middlesex</i>
<i>Carolyn C. Dykema</i>	<i>8th Middlesex</i>
<i>James B. Eldridge</i>	<i>Middlesex and Worcester</i>
<i>Ann-Margaret Ferrante</i>	<i>5th Essex</i>
<i>Jennifer L. Flanagan</i>	<i>Worcester and Middlesex</i>
<i>Patricia D. Jehlen</i>	<i>Second Middlesex</i>
<i>Thomas M. McGee</i>	<i>Third Essex and Middlesex</i>
<i>Karen E. Spilka</i>	<i>Second Middlesex and Norfolk</i>
<i>Benjamin Swan</i>	<i>11th Hampden</i>
<i>Bruce E. Tarr</i>	<i>First Essex and Middlesex</i>
<i>Daniel A. Wolf</i>	<i>Cape and Islands</i>

SENATE No. 01651

By Ms. Creem, petition (accompanied by bill, Senate, No. 1651) of Wolf, Tarr, Swan and other members of the General Court for legislation to promote energy efficient lighting, conserve energy, regulate outdoor night lighting, and reduce light pollution [Joint Committee on Telecommunications, Utilities and Energy].

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

The Commonwealth of Massachusetts

In the Year Two Thousand Eleven

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 Official
2 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 clearly
5 requires otherwise, have the following meanings:

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

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

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

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

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

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

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

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

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

21 “Lux”, lumens per square meter.

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

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

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

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

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

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

34 Section 38.

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

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

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

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

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

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

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

58 (b) This section shall not apply:

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

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

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

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

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

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

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

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

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

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

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

88 Section 39.

89 (a) The Department of Transportation shall:

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

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

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

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

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