

SENATE No. 1849

The Commonwealth of Massachusetts

PRESENTED BY:

James B. Eldridge

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 transitioning Massachusetts to 100 percent renewable energy.

PETITION OF:

NAME:	DISTRICT/ADDRESS:	
<i>James B. Eldridge</i>	<i>Middlesex and Worcester</i>	
<i>Sean Garballey</i>	<i>23rd Middlesex</i>	
<i>Carmine L. Gentile</i>	<i>13th Middlesex</i>	<i>1/25/2017</i>
<i>Jason M. Lewis</i>	<i>Fifth Middlesex</i>	<i>1/25/2017</i>
<i>Denise Provost</i>	<i>27th Middlesex</i>	<i>1/26/2017</i>
<i>Jack Lewis</i>	<i>7th Middlesex</i>	<i>1/26/2017</i>
<i>Mike Connolly</i>	<i>26th Middlesex</i>	<i>1/26/2017</i>
<i>Dylan Fernandes</i>	<i>Barnstable, Dukes and Nantucket</i>	<i>1/27/2017</i>
<i>Cory Atkins</i>	<i>14th Middlesex</i>	<i>2/28/2017</i>
<i>Paul R. Heroux</i>	<i>2nd Bristol</i>	<i>2/1/2017</i>
<i>William N. Brownsberger</i>	<i>Second Suffolk and Middlesex</i>	<i>2/1/2017</i>
<i>James Arciero</i>	<i>2nd Middlesex</i>	<i>2/1/2017</i>
<i>Jay R. Kaufman</i>	<i>15th Middlesex</i>	<i>2/2/2017</i>
<i>Kenneth J. Donnelly</i>	<i>Fourth Middlesex</i>	<i>2/2/2017</i>
<i>John C. Velis</i>	<i>4th Hampden</i>	<i>2/2/2017</i>
<i>Patricia D. Jehlen</i>	<i>Second Middlesex</i>	<i>2/3/2017</i>
<i>Eric P. Lesser</i>	<i>First Hampden and Hampshire</i>	<i>2/3/2017</i>
<i>Chris Walsh</i>	<i>6th Middlesex</i>	<i>2/6/2017</i>

<i>Jennifer L. Flanagan</i>	<i>Worcester and Middlesex</i>	<i>2/14/2017</i>
<i>Mark C. Montigny</i>	<i>Second Bristol and Plymouth</i>	<i>2/21/2017</i>
<i>Marc R. Pacheco</i>	<i>First Plymouth and Bristol</i>	<i>5/9/2017</i>
<i>Cynthia Stone Creem</i>	<i>First Middlesex and Norfolk</i>	<i>6/6/2017</i>
<i>Cindy F. Friedman</i>	<i>Fourth Middlesex</i>	<i>10/3/2017</i>

SENATE No. 1849

By Mr. Eldridge, a petition (accompanied by bill, Senate, No. 1849) of James B. Eldridge, Sean Garballey, Carmine L. Gentile, Jason M. Lewis and other members of the General Court for legislation to transition Massachusetts to 100 percent renewable energy. Telecommunications, Utilities and Energy.

The Commonwealth of Massachusetts

**In the One Hundred and Ninetieth General Court
(2017-2018)**

An Act transitioning Massachusetts to 100 percent renewable energy.

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. The General Laws, as appearing in the 2016 Official Edition, are hereby
2 amended by inserting after chapter 25C the following chapter:-

3 CHAPTER 25D.

4 100 Percent Renewable Energy Act

5 Section 1. The purpose of this chapter is to steadily transition the commonwealth to 100
6 percent clean, renewable energy by 2050 in order to (1) avoid pollution of our air, water and
7 land, reduce greenhouse gas emissions, and ultimately eliminate our use of fossil fuels and other
8 polluting and dangerous forms of energy; (2) increase energy security by reducing our reliance
9 on imported sources of energy and maximizing renewable energy production in Massachusetts
10 and in our region; (3) increase economic development by stimulating public and private
11 investments in clean energy and energy efficiency projects; (4) create local jobs by harnessing

12 Massachusetts' skilled workforce, business leadership, and academic institutions to advance new
13 technologies, improve the energy performance of homes and workplaces, and deploy renewable
14 energy across the commonwealth; and (5) improve the quality of life and economic well-being of
15 all Massachusetts residents, with an emphasis on communities and populations that have been
16 disproportionately affected by pollution and high costs under our energy system.

17 Section 2. As used in this chapter the following words shall have the following meanings
18 unless the context clearly requires otherwise:-

19 "Building sector," the energy consumed to heat, cool, provide hot water for, and provide
20 electricity for buildings. The building sector shall not include energy used for heavy industrial
21 activities.

22 "Commissioner," the commissioner of the department of energy resources

23 "Department," the department of energy resources

24 "Emission," as defined in chapter 21N of the General Laws.

25 "Greenhouse gas," as defined in chapter 21N of the General Laws.

26 "Non-renewable energy," energy produced from any source that fails to meet one or more
27 of the criteria for renewable energy.

28 "Renewable energy," energy produced from sources that meet all of the following
29 criteria:

30 (1) Virtually pollution-free, producing little to no global warming pollution or health-
31 threatening pollution;

32 (2) Inexhaustible, coming from natural sources that are regenerative or practically
33 unlimited;

34 (3) Safe, having minimal impacts on the environment, community safety and public
35 health; and

36 (4) Efficient, a wise use of resources.

37 Renewable energy shall include energy produced with the following technologies,
38 provided that the use of these technologies conforms to the requirements above: solar
39 photovoltaic, solar thermal electric, solar thermal heating, offshore wind energy, onshore wind
40 energy, and geothermal energy. Renewable energy may include other technologies that meet the
41 requirements above.

42 “Secretary,” the secretary of energy and environmental affairs

43 “Sector,” a major category of energy usage. Sectors shall include electricity generation,
44 heating, transportation, and industry, and may include other major categories as identified by the
45 department of energy resources.

46 “Subsector,” a subcategory within a sector of energy usage, characterized by a common
47 energy generation technology, industry, application, end-use sector, or type of consumer.

48 “Transportation sector,” the technologies and uses of energy that are applied to move
49 people and goods within, into, and out of the commonwealth, including non-motorized forms of
50 transportation such as walking and bicycling.

51 “Zero net energy building,” an energy-efficient building where, on a source energy basis,
52 the actual annual delivered energy is less than or equal to the on-site renewable exported energy.

53 Section 3. (a) It shall be the goal of the commonwealth to meet 100 percent of
54 Massachusetts' energy needs with renewable energy by 2050, including the energy consumed for
55 electricity, heating and cooling, transportation, agricultural uses, industrial uses, and all other
56 uses by all residents, institutions, businesses, state and municipal agencies, and other entities
57 operating within its borders.

58 (b) It shall be the goal of the commonwealth to obtain 100 percent of the electricity
59 consumed by all residents, institutions, businesses, state and municipal agencies, and other
60 entities operating within its borders from renewable energy sources by 2035.

61 (c) In meeting these goals, the commonwealth and its agencies shall prioritize (1) sources
62 of renewable energy that are located in Massachusetts or elsewhere in New England, (2) sources
63 of renewable energy that represent additional renewable generation capacity added to the grid,
64 (3) models for local and community ownership of renewable energy generation, particularly
65 those models that bring direct financial benefits to low-income communities, and (4) reducing
66 energy consumption through efficiency measures to the greatest extent practicable.

67 Section 4. (a) In order to integrate the goal of 100 percent renewable energy throughout
68 state government operations, the secretary shall establish an administrative council for the clean
69 energy transition not later than 90 days from the passage of this act.

70 (b) The council shall be chaired by the secretary or the secretary's designee; and shall
71 include a representative from the department of environmental protection, the department of
72 energy resources, the department of public utilities, the Massachusetts Clean Energy Center, the
73 office of the governor, and the executive offices of administration and finance, education, health
74 and human services, housing and economic development, labor and workforce development,

75 public safety and security, and transportation and public works. The council shall also include a
76 representative designated by the attorney general, the treasurer and receiver general, the secretary
77 of the commonwealth, the state auditor, and the President of the University of Massachusetts.
78 The council shall also include a member designated by the secretary of education to represent the
79 community college system and a member designated by the secretary of education to represent
80 the the state university system.

81 (c) The council shall identify all existing laws, regulations, and agency programs with an
82 impact on energy production and consumption, and evaluate them based on (1) their potential to
83 support the state's transition to 100 percent renewable energy and (2) their ability to maximize
84 the environmental and economic benefits of the transition for Massachusetts residents and
85 businesses, particularly but not exclusively for (i) residents of gateway municipalities as defined
86 in section 3A of chapter 23A of the General Laws, (ii) communities that have been impacted by
87 pollution from energy sources, and (iii) neighborhoods identified as Environmental Justice
88 Populations under the Environmental Justice Policy of the executive office of energy and
89 environmental affairs.

90 (d) Each executive department shall conduct a review of the laws, regulations, and
91 programs in its jurisdiction, and submit a report to the council describing how these laws,
92 regulations, and programs can be modified in order to accelerate the transition to 100 percent
93 renewable energy. Each executive department shall further consider how modifying its programs
94 to accelerate the transition to 100 percent renewable energy can help achieve the department's
95 other objectives.

96 (e) The secretary shall publish the council's findings under subsections (c) and (d) of this
97 section within 6 months of the formation of the council. The secretary and the council shall
98 review and update these findings every 3 years from the date of initial publication.

99 (f) Within one year from the passage of this act, the council shall determine a date by
100 which the operations of state government will be powered with 100 percent renewable energy,
101 provided that the date is not later than January 1, 2035. Within eighteen months of the passage of
102 this act, each executive department shall present a plan to achieve this goal for the facilities and
103 activities in its jurisdiction. Each executive department shall report on its progress to the council
104 and update its plan annually.

105 (g) The council shall meet at least once per quarter to review progress in modifying laws,
106 regulations, and agency programs to accelerate the transition to 100 percent renewable energy.
107 These meetings shall be open to members of the public and shall provide opportunities for public
108 comment.

109 Section 5. (a) The commonwealth shall establish a clean energy center of excellence at a
110 public institution of higher education to conduct and sponsor research on (1) renewable energy
111 and energy efficiency technologies; (2) effective practices for renewable energy adoption by
112 residents, institutions, businesses, state and municipal agencies, and other entities; (3) barriers
113 preventing access to renewable energy, particularly but not exclusively for low-income
114 communities; and (4) community outreach models and other tools to increase the adoption of
115 renewable energy, particularly for low-income communities.

116 (b) The center shall be advised by a 15-member committee composed of experts
117 knowledgeable in (1) renewable energy, energy efficiency, and energy storage technologies; (2)

118 architecture, building engineering, and construction; (3) transportation; (4) affordable housing;
119 (5) environmental justice; and (6) other relevant fields.

120 Section 6. (a) The commonwealth shall establish a council for clean energy workforce
121 development. The council shall be co-chaired by the commissioner of the department of energy
122 resources and the secretary of labor and workforce development. The council shall include
123 representatives from the Massachusetts Clean Energy Center, the executive office of education,
124 the University of Massachusetts, the state universities and community colleges, organized labor,
125 renewable energy businesses, occupational training organizations, economic development
126 organizations, community development organizations, and organizations serving Environmental
127 Justice Populations.

128 (b) The council shall identify the employment potential of the energy efficiency and
129 renewable energy industry and the skills and training needed for workers in those fields, and
130 make recommendations to the governor and the general court for policies to promote
131 employment growth and access to jobs. The council shall prioritize maximizing employment
132 opportunities for fossil fuel workers displaced in the transition to renewable energy, residents of
133 gateway municipalities as defined in section 3A of chapter 23A of the General Laws, and
134 residents of areas identified as Environmental Justice Populations under the Environmental
135 Justice Policy of the executive office of energy and environmental affairs.

136 (c) The council shall establish a target for the number of new renewable energy jobs to be
137 created in Massachusetts by 2030 not later than January 1, 2019. The Council shall also set a
138 target for the number of new renewable energy jobs to be created for members of the prioritized
139 categories identified in subsection (b); and this target shall be no less than 10 percent of the total

140 number of jobs created or 7,500 jobs, whichever is greater. The council shall create job growth
141 targets for each subsequent ten-year period beginning in 2030, including a target for the number
142 of jobs to be created for members of the prioritized categories identified in subsection (b); and
143 this target shall be no less than 10 percent of the total number of jobs created or 7,500 jobs,
144 whichever is greater. The job growth targets for each subsequent ten-year period shall be
145 finalized at least 12 months prior to the start of the ten-year period.

146 (d) At least annually, the council shall submit a report to the general court and the
147 governor recommending changes to existing state policies and programs to meet its job growth
148 targets.

149 (e) The council shall meet at least once per quarter to review progress in expanding
150 renewable energy employment. These meetings shall be open to members of the public and shall
151 provide opportunities for public comment.

152 Section 7. (a) In consultation with the administrative council for the clean energy
153 transition and the clean energy center of excellence, the department shall conduct a study
154 identifying pathways towards 100 percent renewable energy for the building sector, and the
155 policies necessary for all new buildings to be zero net energy buildings by 2030 and for non-
156 renewable energy consumption to be reduced for existing buildings by 50 percent by 2030.

157 (b) The study shall consider how to expand access to renewable heating and electricity
158 technologies, increase access to energy efficiency programs, and minimize costs, particularly but
159 not exclusively for low-income communities.

160 (c) The department shall present the results of this study to the administrative council for
161 the clean energy transition not later than 1 year from the passage of this act. The department shall

162 review and update this study every five years, considering technological developments,
163 demographic changes, the effectiveness of existing programs and policies, and other factors.

164 Section 8. (a) The department shall determine the overall quantity of energy consumed
165 statewide in the calendar year 2016 across all sectors and the percentage of energy consumed
166 that came from renewable energy sources, using the best available data. This determination shall
167 include an analysis of the percentage of renewable energy consumed in Massachusetts that was
168 produced (1) in Massachusetts; (2) in Maine, New Hampshire, Connecticut, Rhode Island, and
169 Vermont; and (3) in states not previously listed or in other countries or territories.

170 (b) The department shall also determine (1) the amount of energy consumed in any
171 individual sector or subsector representing more than 2 percent of total statewide energy
172 consumption, (2) the types and sources of energy consumed in that sector or subsector, and (3)
173 the percentage of energy consumed in that sector or subsector that came from renewable sources.

174 (c) The department shall publish a similar analysis of renewable and non-renewable
175 energy consumption on at least a triennial basis and for the years 2020, 2030, 2040, and 2050.
176 This analysis shall include the amount, percentage, types, and sources of renewable and non-
177 renewable energy consumed across all sectors statewide and in the individual sectors and
178 subsectors identified pursuant to subsection (b), as well as any additional sectors or subsectors
179 that have since come to represent at least 2 percent of total statewide energy consumption.

180 (d) The department shall establish interim limits for the overall percentage of
181 Massachusetts' energy to come from non-renewable sources: (1) in 2030, no more than 50
182 percent non-renewable energy; and (2) in 2040, no more than 20 percent non-renewable energy.
183 The department shall also establish interim limits on non-renewable energy in the individual

184 sectors and subsectors identified under subsections (b) and (c). These interim limits shall
185 maximize the ability of the commonwealth to achieve 100 percent renewable energy by 2050.

186 (e) The department shall establish interim non-renewable energy limits for 2030 and 2040
187 concurrent with the Department of Environmental Protection's establishment of interim 2030
188 and 2040 limits on greenhouse gas emissions pursuant to subsection (b) of section 3 of chapter
189 21N of the General Laws. The Department of Environmental Protection shall establish a 2030
190 interim limit on greenhouse gas emissions and the Department of Energy Resources shall
191 establish a 2030 interim limit on non-renewable energy consumption not later than January 1,
192 2018. The Department of Environmental Protection shall establish a 2040 interim limit on
193 greenhouse gas emissions and the Department of Energy Resources shall establish a 2040
194 interim limit on non-renewable energy consumption not later than January 1, 2027. The
195 Department of Environmental Protection shall establish a 2050 statewide emissions limit not
196 later than January 1, 2037.

197 (f) The interim limit on greenhouse gas emissions for 2030 shall reduce emissions by at
198 least 50 percent below the 1990 level, as determined by the department of environmental
199 protection under subsection (a) of section 3 of said chapter 21N.

200 (g) The interim limits on non-renewable energy consumption for 2030 and 2040 shall be
201 considered binding caps and shall be legally enforceable by any citizen of the commonwealth.

202 Section 9. (a) The department and other state agencies controlling sectors or subsectors of
203 energy consumption shall promulgate regulations establishing declining annual limits on the
204 percentage of non-renewable energy consumed by the sectors and subsectors identified in
205 subsections (b) and (c) of section 8 of this chapter. These regulations shall reduce the use of non-

206 renewable energy at a rate sufficient to meet the interim 2030 and 2040 limits on non-renewable
207 energy consumption, as well as the 2050 goal of 100 percent renewable energy. In adopting these
208 regulations, the department shall consider how to minimize costs and maximize economic,
209 social, public health, and environmental benefits for fossil fuel workers displaced in the
210 transition to renewable energy, residents of gateway municipalities as defined in section 3A of
211 chapter 23A of the General Laws, and residents of areas identified as Environmental Justice
212 Populations under the Environmental Justice Policy of the executive office of energy and
213 environmental affairs.

214 (b) The department shall develop these regulations concurrent with the department of
215 environmental protection's development of regulations to reduce greenhouse gas emissions
216 under subsection (d) of section 3 of chapter 21N of the General Laws.

217 (c) The department of energy resources and the department of environmental protection,
218 along with other agencies that control sectors or subsectors of energy consumption or greenhouse
219 gas emissions, shall promulgate regulations under subsection (a) of section 9 of this chapter and
220 subsection (d) of section 3 of chapter 21N of the General Laws not later than January 1, 2019, to
221 meet the 2030 interim limits on greenhouse gas emissions and non-renewable energy
222 consumption; and not later than January 1, 2029, to meet the 2040 interim limits on greenhouse
223 gas emissions and non-renewable energy consumption; and not later than January 1, 2039, to
224 achieve 100 percent renewable energy and at least 80 percent greenhouse gas emission
225 reductions by 2050.

226 (d) The department of energy resources, the department of environmental protection, and
227 other state agencies may jointly promulgate regulations to satisfy limits on greenhouse gas
228 emissions and non-renewable energy consumption.

229 (e) The regulations promulgated under subsection (a) of section 9 of this chapter and
230 subsection (d) of section 3 of chapter 21N of the General Laws are intended to result in real,
231 permanent reductions in greenhouse gas emissions and the use of non-renewable energy resulting
232 from activities in the commonwealth.

233 Section 10. (a) The department, together with the Massachusetts Clean Energy Center,
234 the executive office for administration and finance, the division of capital asset management and
235 maintenance, and other state agencies, shall identify opportunities to expand solar and other
236 renewable energy generation capacity on state-owned facilities and land. The department and the
237 division of capital asset management and maintenance, in consultation with other state agencies,
238 shall install an additional 100 megawatts of solar and other clean energy generation capacity on
239 state properties by December 31, 2020.

240 (b) The department and the division of capital asset management and maintenance,
241 together with other state agencies, shall establish a goal for the amount of additional renewable
242 energy generation capacity installed on state-owned facilities and lands in each subsequent five-
243 year period beginning in 2020. The goal for each five-year period shall be not less than 25
244 megawatts of renewable energy generation capacity. The department and the division of capital
245 asset management and maintenance, together with other state agencies, shall install enough
246 renewable energy generation capacity to meet the goal for each five-year period.

247 (c) On an annual basis, the division of capital asset management and maintenance shall
248 track the upfront cost of renewable energy projects installed under the provisions of this section,
249 and the revenue and energy cost savings accruing to the state and its agencies from those projects
250 through net metering credits, electricity sales, the sale of renewable energy credits, other state or
251 federal incentive programs, and other sources of revenue or energy cost savings.

252 (d) Annually, the division of capital asset management and maintenance shall determine
253 which renewable energy projects have paid back their initial costs with revenue and energy cost
254 savings. These projects shall be known as revenue positive projects. Once this determination has
255 been made, any future revenue or energy cost savings from revenue positive projects shall be
256 credited into a clean energy workforce development account at the Massachusetts Clean Energy
257 Center. Such funds shall be held in an account separate from other accounts of the Massachusetts
258 Clean Energy Center. In any year in which revenue from renewable energy projects on state
259 properties is not sufficient to credit at least \$5 million into the clean energy workforce
260 development account, the department shall direct funds from alternative compliance payments
261 under subsection (h) of section 11F of the General Laws to bring the total contribution to \$5
262 million.

263 (e) The executive office of energy and environmental affairs and the executive office of
264 labor and workforce development shall direct the use of funds from the clean energy workforce
265 development account, in consultation with the council for clean energy workforce development.
266 These funds shall be used to provide job training, education, and job placement assistance for
267 Massachusetts residents to work in the clean energy and energy efficiency industry.

268 (f) At least half of the funds spent from the clean energy workforce development account
269 on an annual basis shall be spent on programs and initiatives that primarily benefit (1) fossil fuel
270 workers displaced in the transition to renewable energy, (2) residents of gateway municipalities
271 as defined in section 3A of chapter 23A of the General Laws, or (3) residents of areas identified
272 as Environmental Justice Populations under the Environmental Justice Policy of the executive
273 office of energy and environmental affairs.

274 (g) The department and the division of capital asset management and maintenance shall
275 submit an annual report to the governor, the general court, and the council for clean energy
276 workforce development, describing progress towards meeting goals for renewable energy
277 installations on state properties, the costs and revenue associated with each project, and the
278 amount of revenue generated for the clean energy workforce development account.

279 (h) The executive office of energy and environmental affairs and the executive office of
280 labor and workforce development shall submit a report annually to the governor, the general
281 court, and the council for clean energy workforce development, describing the expenditure of
282 funds from the clean energy workforce development account.

283 SECTION 2. Chapter 6C of the General Laws is hereby amended by inserting after
284 section 76 the following section:-

285 Section 77. (a) The department of transportation shall conduct a study identifying
286 pathways towards 100 percent renewable energy for the transportation sector and the policies
287 necessary to power the transportation sector with at least 50 percent renewable energy by 2030.

288 (b) The study shall give preference to transportation options that (1) increase access to
289 mass transportation across all income levels; (2) minimize costs, particularly for low-income
290 communities; and (3) maximize access to employment centers.

291 (c) Without limitations on the department of transportation's evaluation of effective
292 statewide transportation options, the study shall consider the feasibility, cost effectiveness, and
293 environmental and economic benefits of high-speed rail service between major urban centers in
294 Massachusetts, including Boston, Worcester, and Springfield.

295 (d) The department of transportation shall publish the findings from this study not later
296 than 1 year from the passage of this act. The department shall review and update this study every
297 5 years, considering technological developments, demographic changes, the effectiveness of
298 existing programs and policies, and other factors.

299 SECTION 3. Subsection (a) of section 11F of chapter 25A of the General Laws is hereby
300 amended by striking out the third sentence and inserting in place thereof the following words:-
301 Every retail supplier shall provide a minimum percentage of kilowatt-hours sales to end-use
302 customers in the commonwealth from Class I renewable energy generating sources, according to
303 the following schedule: (1) an additional 1 percent of sales by December 31, 2003, or 1 calendar
304 year from the final day of the first month in which the average cost of any renewable technology
305 is found to be within 10 percent of the overall average spot-market price per kilowatt-hour for
306 electricity in the commonwealth, whichever is sooner; (2) an additional one-half of 1 percent of
307 sales each year thereafter until December 31, 2009; (3) an additional 1 percent of sales every
308 year thereafter until December 31, 2017; (4) an additional 2 percent of sales every year thereafter
309 until December 31, 2018; (5) an additional 3 percent of sales every year thereafter until

310 December 31, 2020; (6) an additional 4 percent of sales every year thereafter until December 31,
311 2022; (7) an additional 5 percent of sales every year thereafter until December 31, 2028; and (8)
312 an additional 6 percent of sales every year thereafter.

313 SECTION 4. The provisions of this act shall become effective 90 days from the passage
314 of this act, except where otherwise specified.