

**SENATE . . . . . No. 1822**

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**The Commonwealth of Massachusetts**

PRESENTED BY:

***Paul R. Feeney***

*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 advancing renewable heating solutions for the Commonwealth.**

PETITION OF:

NAME:

*Paul R. Feeney*

DISTRICT/ADDRESS:

*Bristol and Norfolk*

**SENATE . . . . . No. 1822**

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By Mr. Feeney, a petition (accompanied by bill, Senate, No. 1822) of Paul R. Feeney for legislation to advance renewable heating solutions for the Commonwealth. Revenue.

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**The Commonwealth of Massachusetts**

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**In the One Hundred and Ninety-Third General Court  
(2023-2024)**  
\_\_\_\_\_

An Act advancing renewable heating solutions for the Commonwealth.

*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. Section 3 of chapter 25 of the General Laws, as so appearing, is hereby  
2 amended by striking out, in line 14, the words “chapter 164” and inserting in place thereof the  
3 following words:- chapters 164 and 164C.

4           SECTION 2. Chapter 29 of the General Laws is hereby amended by inserting after  
5 section 200000, as inserted by section 13 of chapter 358 of the acts of 2020, the following  
6 section:-

7           Section 2PPPPP. (a) There is hereby established and set up on the books of the  
8 commonwealth a fund known as the Renewable Heating Solutions Development Fund to be  
9 administered by the department of energy resources. The purpose of the fund shall be reduce the  
10 carbon intensity of the fuel consumed by end-use customers and increase the supply of  
11 renewable thermal resources through procurement of qualified renewable heating fuels and  
12 useful thermal energy from renewable thermal resources including environmental attributes for

13 compliance use by obligated entities, as defined in section 1 of chapter 164C and consistent with  
14 Section 3A of Chapter 21N. There shall be credited to the fund all alternative compliance  
15 payments made by obligated entities as provided in section 2 of said chapter 164C. Amounts  
16 credited to the fund shall be expended without further appropriation. Money remaining in the  
17 fund at the end of a fiscal year shall not revert to the General Fund and shall be available for  
18 expenditure in subsequent fiscal years. No expenditure shall be made from said fund that shall  
19 cause said fund to be in deficit at the close of a fiscal year.

20 (b) Money in the fund shall be expended to: (i) stimulate investment in development of  
21 qualified renewable heating fuels and renewable thermal resources by entering into agreements,  
22 including multi-year agreements, for qualified renewable heating fuels and for renewable thermal  
23 resources including environmental attributes for the purposes of compliance with the renewable  
24 heat standard; (ii) provide technical and financial assistance for interconnection and feasibility  
25 studies, the development or the installation of qualified renewable heating fuel and renewable  
26 thermal resource projects; (iii) issue assurances or guarantees to support the acquisition of  
27 environmental attributes; (iv) establish escrows, reserves or acquire insurance for the obligations  
28 of the fund; and (v) pay administrative costs of the fund incurred not to exceed 10 percent of the  
29 income of the fund, including, but not limited to, alternative compliance payments.

30 (c) The department shall adopt plans and guidelines for the management and use of the  
31 fund and enter into agreements with obligated entities to accept alternative compliance payments  
32 consistent with rules or purposes of the renewable heating standards established in said section 2  
33 of said chapter 164C. The department shall pursue opportunities at the state or federal level to  
34 advance the research and development of eligible resources, as defined in section 1 of said  
35 chapter 164C.

36 SECTION 3. Section 6 of chapter 62 of the General Laws, as amended by section 57 of  
37 chapter 358 of the acts of 2020, is hereby amended by adding the following 3 subsections:-

38 (x) (1) A partnership, limited liability corporation or other legal entity engaged in  
39 business in the commonwealth that: (i) is not a business corporation subject to the excise under  
40 chapter 63; and (ii) produces qualified renewable heating fuels, as defined in section 1 of chapter  
41 164C, shall be allowed a refundable credit against its excise due under this chapter.

42 (2) The credit under this subsection shall be attributed on a pro rata basis to the owners,  
43 partners or members of the legal entity entitled to the credit under this subsection and shall be  
44 allowed as a credit against the tax due under this chapter from the owners, partners or members  
45 in a manner determined by the commissioner.

46 (3) The commissioner, in consultation with the commissioner of energy resources, shall  
47 promulgate regulations for the administration and implementation of this subsection.

48 (y) (1) As used in this subsection the following terms shall, unless the context clearly  
49 requires otherwise, have the following meanings:

50 “Geothermal district heating”, as defined in section 1 of chapter 164C.

51 “Qualified heating equipment”, renewable heating systems approved by the department  
52 of energy resources, including but not limited to air source heat pumps, ground source heat  
53 pumps, and heating equipment using renewable hydrogen and renewable propane.

54 “Renewable hydrogen,” as defined in section 1 of Chapter 164C.

55 “Taxpayer”, a taxpayer subject to taxation under this chapter.

56           (2) A taxpayer shall be allowed a tax credit against the taxes imposed by this chapter  
57 equal to 30 percent of the total qualified expenditures incurred in connection with the purchase  
58 and installation of qualified heating equipment during the taxable year; provided, however, that  
59 the amount of credit allowed shall not exceed 30 percent of the net expenditure for renewable  
60 energy source property.

61           (3) If the amount of the credit allowed under this subsection exceeds the taxpayer's tax  
62 liability, the commissioner shall treat the excess as an overpayment and shall pay the taxpayer  
63 the entire amount of the excess.

64           (4) The commissioner, in consultation with the commissioner of energy resources, shall  
65 promulgate regulations for the administration and implementation of this subsection.

66           (z) (1) As used in this subsection the following terms shall, unless the context clearly  
67 requires otherwise, have the following meanings:

68           (2) A taxpayer shall be allowed a tax credit against the taxes imposed by this chapter  
69 equal to 30 percent of the total qualified expenditures incurred in connection with the purchase  
70 and installation of geothermal district heating infrastructure during the taxable year.

71           (3) If the amount of the credit allowed under this subsection exceeds the taxpayer's tax  
72 liability, the commissioner shall treat the excess as an overpayment and shall pay the taxpayer  
73 the entire amount of the excess.

74           (4) The commissioner, in consultation with the commissioner of energy resources, shall  
75 promulgate regulations for the administration and implementation of this subsection.

76 SECTION 4. Chapter 63 of the General Laws is hereby amended by inserting after  
77 section 38HH, as appearing in the 2018 Official Edition, the following 3 sections:-

78 Section 39II. There is hereby established a qualified renewable heating fuels production  
79 tax credit. A corporation engaged in business in the commonwealth that produces qualified  
80 renewable heating fuels, as defined in section 1 of chapter 164C, shall be allowed a refundable  
81 credit against its excise due under this chapter. The credit shall be equal to 30 percent of the total  
82 qualified expenditures incurred in connection with the purchase and installation of equipment for  
83 the production of qualified renewable heating fuels.

84 The credit allowed under this section shall be allowed for the taxable year in which the  
85 production of qualified renewable heating fuels or purchase of equipment to produce qualified  
86 renewable heating fuels is made. The commissioner, in consultation with the commissioner of  
87 energy resources, shall promulgate regulations for the administration and implementation of this  
88 section.

89 Section 39JJ. There is hereby established a renewable heating systems tax credit. A  
90 corporation engaged in business in the commonwealth that purchases or installs qualified heating  
91 equipment, as defined in paragraph (1) of subsection (y) of section 6 of chapter 62, shall be  
92 allowed a refundable credit against its excise due under this chapter equal to 30 percent of the  
93 total qualified expenditures incurred in connection with said purchase and installation during the  
94 taxable year; provided, however, that the amount of credit allowed shall not exceed 30 percent of  
95 the net expenditure for renewable energy source property.

96 The credit allowed under this section shall be allowed for the taxable year in which the  
97 purchase or installation of qualified heating equipment is made. The commissioner, in

98 consultation with the commissioner of energy resources, shall promulgate regulations for the  
99 administration and implementation of this section.

100 Section 39KK. There is hereby established a geothermal district heating infrastructure tax  
101 credit. A corporation engaged in business in the commonwealth that purchases or installs  
102 infrastructure supporting geothermal district heating, as defined in section 1 of chapter 164C,  
103 shall be allowed a refundable credit against its excise due under this chapter equal to 30 percent  
104 of the total qualified expenditures incurred in connection with said purchase and installation  
105 during the taxable year.

106 The credit allowed under this section shall be allowed for the taxable year in which the  
107 purchase or installation of qualified heating equipment is made. The commissioner, in  
108 consultation with the commissioner of energy resources, shall promulgate regulations for the  
109 administration and implementation of this section.

110 SECTION 5. The General Laws are hereby amended by inserting after chapter 164B the  
111 following chapter:-

112 Chapter 164C

113 Renewable Heating Solutions

114 Section 1. As used in this chapter the following terms shall, unless the context clearly  
115 requires otherwise, have the following meanings:

116 "Alternative compliance payment", a payment to the renewable heating solutions  
117 development fund established in section 2PPPPP of chapter 29, which may be made in lieu of  
118 standard means of compliance with this statute.

119 “Biogas”, a mixture of carbon dioxide and hydrocarbons, primarily methane gas, released  
120 from the biological decomposition of organic materials, which can be upgraded to meet the  
121 standards for injection into a common carrier pipeline.

122 “Biomass”, energy feedstocks that can be converted or upgraded to meet the standards for  
123 injection into a common carrier pipeline, including brush; stumps; lumber ends and trimmings;  
124 wood pallets; bark; wood chips; shavings; slash and other clean wood; agricultural waste; food  
125 and vegetative material; energy crops; landfill methane; or biogas.

126 "Commission", the commonwealth utilities commission established in section 2 of  
127 chapter 25.

128 “Carbon intensity” means the quantity of full lifecycle greenhouse gas emissions per unit  
129 of fuel energy.

130 "Compliance year", a calendar year beginning January 1 and ending December 31 for  
131 which an obligated entity must demonstrate that it has met the requirements of this chapter.

132 “Department”, the department of energy resources.

133 “District heating”, systems that (i) provide useful thermal energy to multiple buildings  
134 from a central resource; (ii) distribute useful thermal energy among buildings connected to a  
135 common thermal network; or (iii) both provide and distribute useful thermal energy.

136 “Eligible resources”, resources producing qualified renewable heating fuels or useful  
137 thermal energy from a renewable thermal resource where the energy produced by the resource is:  
138 (i) delivered into the commonwealth for use by the commonwealth’s end-use customers; or (ii)  
139 used to provide heating service to customers in the Commonwealth. Delivery of energy from an



140 eligible resource may include: (1) a unit-specific bilateral contract for the sale and delivery of the  
141 energy into the commonwealth; (2) confirmation from the appropriate control entity that the  
142 renewable energy was actually settled in the system; or (3) any other requirements as the  
143 department deems appropriate.

144 “Environmental attributes”, any credits, emissions reductions, offsets, allowances or  
145 other benefits attributable to the production and delivery of qualified renewable heating fuels or  
146 renewable thermal resources. The attributes for qualified renewable heating fuels shall include,  
147 but are not limited to, the avoided greenhouse gas emissions associated with the production,  
148 transport, and combustion of a quantity of alternative fuels compared with the same quantity of  
149 geologic natural gas.

150 “Full life cycle greenhouse gas emissions”, (1) lifecycle greenhouse gas emissions  
151 pursuant to section 7545(o)(1)(H) of title 42 of the United States code, and (2) include any  
152 associated abatement of greenhouse gases including methane.

153 “Geothermal district heating”, the utilization of useful thermal energy generated and  
154 stored in the earth to provide heat to buildings and industry through a distribution network.

155 “Natural gas utility”, a natural gas local distribution company.

156 “Obligated entity”, a person or entity that sells natural gas to end-use customers.

157 “Qualified investment”, any capital investment in gas delivery infrastructure or  
158 renewable thermal infrastructure incurred by a natural gas utility for the purpose of providing  
159 natural gas service or useful thermal energy from a renewable thermal resource while complying  
160 with the renewable heating standard. Qualified investments include costs of procurement of

161 qualified renewable heating fuels or useful thermal energy from a renewable thermal resource  
162 from third parties that contribute to the obligated entity meeting the targets set forth in this  
163 chapter. Qualified investments for qualified renewable heating fuels also include (i) a facility or  
164 any part of the equipment located at a facility that is used to create, gather and process biogas  
165 into renewable natural gas; inject renewable natural gas into an existing natural gas pipeline; or  
166 determine the constituents of renewable natural gas before the injection of the renewable natural  
167 gas into an existing natural gas pipeline; or (ii) a facility or part of equipment located at a facility  
168 that is used to create, gather, methane or inject renewable hydrogen into an existing natural gas  
169 pipeline.

170 “Qualified renewable heating fuels”, renewable natural gas, renewable hydrogen, and  
171 renewable propane.

172 “Renewable heating standard” or “standard”, the required percentage reduction in carbon  
173 intensity described in subsection (a) of section 2.

174 “Renewable hydrogen”, hydrogen produced with electricity generated from renewable  
175 energy systems. Renewable energy systems include those that generate electric or thermal energy  
176 through the use of solar thermal, photovoltaics, wind, hydroelectric, geothermal electric,  
177 geothermal ground source heat, biogas produced by the anaerobic digestion or fermentation of  
178 biodegradable materials, tidal energy, wave energy, ocean thermal and fuel cells that do not  
179 utilize a fossil fuel resource.

180 “Renewable natural gas”, pipeline quality gas derived from any combination of biogas,  
181 biomass, the methanation of hydrogen and waste carbon dioxide, or the thermal gasification of

182 sustainable feedstocks, where the use of the fuel results in lower lifecycle greenhouse gas  
183 emissions than geologic natural gas.

184 “Renewable propane” derived from any combination of the creation of renewable liquid  
185 fuels and biogases, plant materials, cellulosic and anaerobic digestion processes, and future  
186 innovative blends or other recycled material processes, where the use of the fuel results in lower  
187 lifecycle greenhouse gas emissions than geologic propane.

188 “Renewable thermal district heating”, district heating relying primarily on useful thermal  
189 energy from a renewable thermal resource.

190 “Renewable thermal infrastructure”, infrastructure for the conversion or distribution of  
191 thermal energy from a renewable thermal resource.

192 “Renewable thermal resource”, any facility that generates useful thermal energy using:  
193 (i) naturally occurring temperature differences in ground, air or water, via geothermal ground  
194 loop, ambient water loop, air source heat pump or other technology; (ii) excess thermal energy,  
195 also referred to as waste heat, from building energy systems or commercial processes; (iii)  
196 sunlight; (iv) combined heat and power; or (v) energy efficient steam technology.

197 “Useful thermal energy”, (i) energy in the form of direct heat, steam, hot water or another  
198 thermal form that is used in production for which fuel or electricity would otherwise be  
199 consumed; and (ii) beneficial measures for heating, cooling, humidity control, process use or  
200 other valid thermal end use energy requirements for which fuel or electricity would otherwise be  
201 consumed.

202           Section 2. (a) Beginning in compliance year 2027, each obligated entity shall reduce the  
203 carbon intensity of gas delivered or transported annually by the obligated entity in the  
204 Commonwealth by at least 2 percent. Beginning in compliance year 2030, each obligated entity  
205 shall reduce the carbon intensity of gas delivered or transported annually by the obligated entity  
206 in the Commonwealth by at least 7.5 percent. Beginning in compliance year 2035, each obligated  
207 entity shall reduce the carbon intensity of gas delivered or transported annually by the obligated  
208 entity in the Commonwealth by at least 20 percent, continuing thereafter.

209           (b) If the department determines that achievement of the renewable heating standards has  
210 adversely impacted the affordability of gas LDC customer bills, the department may temporarily  
211 suspend compliance for the next compliance year immediately following the determination.

212           (c) The department shall review whether adjustments to the renewable heating standards  
213 for the following 2 compliance years are necessary to ensure that the increase in customer bills  
214 remains affordable. This review shall assess the total incremental annual cost to meet the  
215 renewable heating standards, including accounting for (i) any value received by a natural gas  
216 utility upon any resale of eligible resources, such as any environmental credits or other credits  
217 associated with environmental attributes; and (ii) any savings achieved through avoidance of  
218 conventional gas purchases or development, such as avoided pipeline costs or carbon costs.

219           (d) The department may adjust prospective compliance year targets described in  
220 subsection (a); provided, however, that the cumulative annual percentage of natural gas sold  
221 shall comply with the 2035 target.

222           (e) If the department determines that there are not enough eligible resources to meet the  
223 targets identified in subsection (a) within the constraints of subsections (b) to (d), inclusive, the

224 department may recommend natural gas utilities develop qualified investments sufficient to meet  
225 the targets.

226 (f) The department shall ensure that the reductions in carbon intensity in subsection (a)  
227 are consistent with Section 3A of Chapter 21N.

228 Section 3. (a) Compliance of an obligated entity with the renewable heating standard may  
229 be demonstrated through: (i) sale of qualified renewable heating fuels or useful thermal energy  
230 from a renewable thermal resource and their associated environmental attributes to customers in  
231 Massachusetts;(ii) procurement of environmental attributes by obligated entities representing  
232 qualified GHG emissions reductions in a system of record designated by the department (iii)  
233 payment of alternative compliance payments to the renewable heating solutions development  
234 fund established in section 2PPPPP of chapter 29; or (iv) any combination of qualified renewable  
235 heating fuel procurement, renewable thermal resource procurement, environmental attribute  
236 procurement, or alternative compliance payments.. The commissioner shall promulgate rules and  
237 regulations for the payment of alternative compliance payments.

238 (b) To procure environmental attributes an obligated entity's production source shall be  
239 certified by the department as using eligible resources. Use of eligible resources shall be  
240 evidenced by reports issued by the commissioner of energy resources.

241 (c) In meeting the obligations of the renewable heating standards, to the extent feasible  
242 and consistent with state and federal law, all investments, projects and activities undertaken  
243 pursuant to this chapter by any person or the department shall provide employment opportunities  
244 for all segments of the population and workforce, including minority-owned and female-owned  
245 business enterprises, and utilize labor and materials within the commonwealth to ensure the

246 environmental benefits of avoided carbon emissions are not diminished by emissions associated  
247 with the transportation of labor or materials. The investments, projects and activities shall not  
248 discriminate based on race or socioeconomic status.

249 (d) The commissioner of energy resources shall promulgate rules and regulations for the  
250 implementation of the renewable heating standards on or before July 1, 2025. The rules and  
251 regulations shall include, but be limited to, provisions for:

252 (i) verification of eligibility and production of eligible resources, as well as the energy  
253 content of qualified renewable heating fuels and useful thermal energy from a renewable thermal  
254 resource, including requirements to notify the department in the event of a change in status,  
255 monitor qualified facilities to ensure annual average energy content matches the expected  
256 generation of environmental attributes;

257 (ii) certification of eligible resources by issuing statements of qualification within 90 days  
258 of application, including prospective reviews for applicants seeking to determine whether a  
259 facility would be eligible;

260 (iii) annual compliance filings to be made by all obligated entities within 1 month after  
261 tracking system data is available for the fourth quarter of each calendar year; provided, that all  
262 obligated entities shall cooperate with the department in providing data necessary to assess the  
263 magnitude of obligation and verify the compliance of all obligated entities;

264 (iv) sanctions for obligated entities that, after investigation, have been found to fail to  
265 reasonably comply with the renewable heating standards or department rules and regulations;  
266 provided, that no sanction or penalty shall relieve or diminish an obligated entity from liability  
267 for fulfilling any shortfall in its compliance obligation; provided further, that no sanction shall be

268 imposed if compliance is achieved through alternative compliance payments; provided further,  
269 that the department may suspend or revoke the certification of eligible resources that provide  
270 false information or fail to notify the department in the event of a change in eligibility status or  
271 otherwise comply with department rules; and provided further, that financial penalties resulting  
272 from sanctions from obligated entities shall not be recoverable in rates;

273 (v) mechanisms for the purposes of easing compliance burdens, facilitating bringing new  
274 eligible resources on-line and avoiding or mitigating conflicts with state-level source disclosure  
275 requirements and green marketing claims throughout the region; provided, that mechanisms shall  
276 allow obligated entities to demonstrate compliance over a compliance year and bank excess  
277 compliance for 2 subsequent compliance years, capped at 20 percent of the current year's  
278 obligation; and

279 (vi) public reporting on the status of the implementation of standards, including the  
280 comparative use of environmental attributes and alternative compliance payments and the  
281 amount of rate increases authorized by the standards.

282 Section 4. The commission shall adopt regulations authorizing cost recovery by natural  
283 gas local distribution companies of all prudent incremental costs arising from the implementation  
284 of the renewable heating standards, including, without limitation: (i) the purchase of qualified  
285 renewable heating fuels or useful thermal energy from renewable thermal resources or  
286 environmental attributes or the payment of alternative compliance payments; (ii) required  
287 payments to support assessments for compliance purposes; (iii) the incremental costs of  
288 complying with energy source disclosure requirements; (iv) qualified infrastructure investments  
289 or other activities that will grow the supply and utilization of qualified renewable heating fuels

290 and useful thermal energy from renewable thermal resources and provide environmental benefits  
291 to the commonwealth, including approval of investment in conditioning, injection and  
292 distribution infrastructure, such as extending the transmission or distribution system for the  
293 purpose of interconnection with a qualified facility; (v) making a financial investment for the  
294 purposes of interconnecting a qualified facility or otherwise ensuring that gas created by the  
295 facility can be delivered to customers in accordance with statutory requirements for injection,  
296 compression, quality, and safety or other department or federal regulatory requirements; (vi)  
297 participating in a state or federal renewable energy program or project, if participation by the  
298 natural gas local distribution company (1) consists of the purchase or sale of gas produced or  
299 environmental attributes and (2) results in a reduction of the cost of gas produced to the  
300 company's customers; (vii) providing customers with the option to purchase gas produced from a  
301 qualified investment, with or without environmental attributes, directly from the natural gas local  
302 distribution company; (viii) any other activity that develops qualified renewable heating fuel  
303 sources or renewable thermal resources, advances the sale of qualified renewable heating fuel  
304 sources or renewable thermal resources, or promotes the diversification in energy supply within  
305 the commonwealth to advance the commonwealth's environmental or climate goals; and (ix)  
306 geothermal district heating investments. Costs may be recovered by means of an automatic  
307 adjustment clause or any other recovery mechanism authorized by rule. Costs incurred from  
308 clause ix may be recovered from customers receiving heating and cooling services as a result of  
309 said investment, or from gas delivery customers, until such time as a class of geothermal district  
310 heating customers can be established by the commission. Once a class of geothermal district  
311 heating customers has been established, the commission shall investigate the appropriate cost



312 allocation and recovery of any geothermal district heating investments made prior to the  
313 establishment of the class.

314 Section 5. The department shall conduct a qualified renewable heating fuels inventory,  
315 which shall include:

316 (i) a list of the existing eligible resources, including the location, an estimate of lifecycle  
317 greenhouse gas emissions and an assessment of supply chain infrastructure associated with each  
318 eligible resource;

319 (ii) a list of the potential qualified renewable heating fuel sources, including the estimated  
320 potential production quantities and energy content of sources;

321 (iii) discussion of the best use or uses for potential qualified renewable heating fuel  
322 sources, taking into account estimated lifecycle greenhouse gas emissions, costs and whether the  
323 potential source can be used to address local gas or electric constraints; and

324 (iv) a description of the technologies available for use at each potential qualified  
325 renewable heating fuel source, including estimates from qualified renewable heating fuel  
326 sources, small renewable energy generating facilities, as defined in section 143 of chapter 164,  
327 renewable energy facilities that would be otherwise curtailed, or renewable energy generating  
328 sources, as defined in subsection (b) of section 11F of chapter 25A,

329 Section 6. The department shall research and determine gas quality standards for the  
330 injection of renewable natural gas, renewable hydrogen and any other resources qualifying for  
331 the renewable heating standards into the common carrier pipeline system. The purpose of the  
332 standards shall be to identify acceptable levels of constituents of concern for safety and

333 environmental purposes, including ensuring pipeline integrity, while providing reasonable and  
334 predictable access to pipeline transmission and distribution facilities. The department shall  
335 consult industry groups and neighboring jurisdictions, and identify industry best practices in  
336 establishing the standards.

337           Section 7. The department may review and approve siting of renewable hydrogen  
338 production and delivery facilities and infrastructure.

339           SECTION 6. The credit established in subsection (y) of section 6 of chapter 62 shall be  
340 available in tax years 2024, 2025, 2026, 2027, and 2028.

341           SECTION 7. The gas quality standards established in section 6 of chapter 164C shall take  
342 effect not later than July 1, 2025.