



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF
ENERGY AND ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENERGY RESOURCES
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October 13, 2017

VIA HAND DELIVERY

Steven T. James
Clerk of the House of Representatives
24 Beacon Street, Room 145
State House
Boston, MA 02133

RE: Proposed Amendments to 225 CMR 16.00; submission to General Court

Dear Clerk James:

On behalf of the Massachusetts Department of Energy Resources (“Department”), and in accordance with Section 12 of Chapter 25A of the Massachusetts General Laws, enclosed for filing please find proposed amendments to 225 CMR 16.00—the Alternative Energy Portfolio Standard (“APS”) for referral to the Joint Committee on Telecommunications, Utilities, and Energy.

The APS offers an opportunity for Massachusetts individuals, businesses, institutions, and governments to receive an incentive for using certain types of alternative energy technologies. The APS requires a certain percentage of the state’s electric load to be met by these eligible technologies. The proposed revisions to the APS regulations are necessary to meet requirements pursuant to amendments made to M.G.L. c. 25A (“the Statute”). In 2014, the Statute was amended by Section 2 of Chapter 251 of the Acts of 2014. The Statute was further amended by Sections 3, 4, and 17 of Chapter 188 of the Acts of 2016. As amended, the Statute now includes new renewable heating and cooling technologies, fuel cells, and waste-to-energy thermal, and removes a number of previously eligible technologies (e.g., Gasification and Paper Derived Fuel). The draft regulations reflect these statutory changes to accommodate prospective APS project applicants.

These proposed revisions to the Department’s APS regulations are being submitted to your office for further action, after complying with all applicable provisions of Chapter 30A of the Massachusetts General Laws, except Section five. Also enclosed please find a summary of the

proposed changes to the APS regulations, in layman's terms, in accordance with Section 12 of Chapter 25A.

Thank you for your attention to this matter.

Sincerely,

Judith Judson
Commissioner

Enclosures

Summary of Proposed Changes to 225 CMR 16.00

The Alternative Energy Portfolio Standard (APS) was established as of January 1, 2009, under the Green Communities Act of 2008. The APS offers an opportunity for Massachusetts individuals, businesses, institutions, and governments to receive an incentive for using certain types of alternative energy technologies. These alternative energy technologies contribute to the Commonwealth's clean energy goals by increasing energy efficiency and reducing the need for conventional fossil fuel-based power generation.

The APS requires a certain percentage of the state's electric load to be met by these eligible technologies. In 2017, the Suppliers obligation is 4.25% of retail load served, and is set to increase 0.25% each following year.

In 2014, the Statute was amended pursuant to Section 2 of Chapter 251 of the Acts of 2014. The Statute was further amended pursuant to Sections 3, 4, and 17 of Chapter 188 of the Acts of 2016. As amended, the Statute now includes new renewable heating and cooling technologies, fuel cells, and waste-to-energy thermal, but also removes a number of previously eligible technologies (e.g., Gasification and Paper Derived Fuel). The draft Regulations reflect these statutory changes to accommodate prospective APS project applicants.

An initial draft version of the revised APS Regulations was released for public comment on May 19, 2016. A public comment period opened on May 24, 2016 and closed June 30, 2016. During that time, the DOER held two public hearings on June 15 and June 17, 2016. The DOER received approximately fifty (50) written public comments. The DOER revised the draft Regulations and associated guidelines after review of the public comments received.

A second draft of the APS Regulations that incorporated statutory changes from Chapter 188 of the Acts of 2016 and other changes in response to the first public comment period was filed with the Secretary of the Commonwealth on June 2, 2017. A public comment period opened on June 16, 2017 and closed August 7, 2017. During that time, the DOER held two public hearings on July 14 and August 7, 2017. The DOER received approximately seventy-five (75) written public comments. The DOER has made further revisions to the attached draft Regulations based on the comments received.

225 CMR 16.02

- Revised the definition of APS Alternative Generation Attribute
- Added definition of APS Renewable Thermal Generation Unit
- Struck definition of Capture and Permanent Sequestration
- Added definition of Clean Wood
- Revised the definition of Commercial Operation Date
- Added definition of DCR
- Added definition of Dedicated Energy Crops
- Added definition of Eligible Biogas Fuel
- Added definition of Eligible Biomass Fuel
- Added definition of Eligible Biomass Woody Fuel

- Added definition of Eligible Liquid Biofuel
- Struck definition of Gasification
- Added definition of Fuel Cell Generation Unit
- Revised the definition of Generation Unit
- Revised the definition of Guidelines
- Added definition of International Association of Plumbing and Mechanical Officials
- Added definition of Manufactured Biomass Fuel
- Added definition of Massachusetts Clean Energy Technology Center
- Revised definition of Megawatt-hour
- Struck definition of Paper Derived Fuel
- Added definition of Solar Rating and Certification Corporation
- Added definition of Sustainable Forestry Management
- Added definition of Thermal Waste-to-Energy Generation Unit
- Revised definition of Useful Thermal Energy

225 CMR 16.05

- Struck Gasification as an eligible technology
- Struck Paper-derived Fuel as an eligible technology
- Added special provisions for APS Renewable Thermal Generation Unit eligibility
- Added special provisions for Fuel Cell Generation Unit eligibility
- Added special provisions for Thermal Waste-to-Energy eligibility
- Modified Commercial Operation Date provisions
- Modified Net Carbon Dioxide Emissions Rate provisions
- Clarified dual-eligibility provisions for RPS Class I and II Units under the APS
- Other minor clarifications and technical edits

225 CMR 16.07

- Added language requiring 2020 review of Minimum Standard provisions

225 CMR 16.11

- Revised language to allow the Department to develop an inspection and auditing protocol for suppliers of Eligible Biomass Fuel and Generation Units

HOUSE No. 3955

Communication from the Division of Energy Resources of the Executive Office of Energy and Environmental Affairs (under the provisions of section 12 of Chapter 25A of the General Laws) submitting amendments to 225 CMR 16, Alternative Energy Portfolio Standard (APS).
Telecommunications, Utilities and Energy.

The Commonwealth of Massachusetts

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

1 **225 CMR 16.00: ALTERNATIVE ENERGY PORTFOLIO STANDARD (APS)**
2

3 Section
4

- 5 16.01: Authority
- 6 16.02: Definitions
- 7 16.03: Administration
- 8 16.04: Applicability
- 9 16.05: Eligibility Criteria for APS Alternative Generation Units
- 10 16.06: Statement of Qualification Process for APS Alternative Generation Units
- 11 16.07: Alternative Energy Portfolio Standard
- 12 16.08: Compliance Procedures for Retail Electricity Suppliers
- 13 16.09: Annual Compliance Filings for Retail Electricity Suppliers
- 14 16.10: Reporting Requirements
- 15 16.11: Inspection
- 16 16.12: Non-compliance
- 17 16.13: Severability

18
19 16.01: Authority
20

21 225 CMR 16.00 is promulgated pursuant to M.G.L. c. 25A, §§ 6 and 11F½.
22

23 16.02: Definitions
24

25 Aggregation. A group of one or more Generation Units that receives a single
26 Statement of Qualification from the Department under criteria and procedures set
27 forth in 225 CMR 16.05(3).
28

29 Alternative Compliance Payment (ACP). A payment of a certain dollar amount per
30 MWh, resulting in the issuance of Alternative Compliance Credits, which a Retail

31 Electricity Supplier may submit to the Department in *lieu* of providing APS
32 Alternative Generation Attributes required under 225 CMR 16.07.

33
34 Alternative Compliance Credit. A credit obtained by a Retail Electricity Supplier
35 upon making an Alternative Compliance Payment. Such credit may be used to
36 document compliance with 225 CMR 16.07. One unit of credit shall be equivalent
37 to the APS Alternative Generation Attribute associated with one MWh of electrical
38 energy output, or with the equivalent of such output as provided in 225 CMR
39 16.05(1)(a)2.c. and in 225 CMR 16.05(1)(a)3., from an APS Alternative Generation
40 Unit.

41
42 APS Alternative Generation. The energy output of an APS Alternative Generation
43 Unit, or the equivalent of such output as provided in 225 CMR 16.05(1)(a)2.b., 225
44 CMR 16.05(1)(a)3.b., and in 225 CMR 16.05(1)(a)6.b. or that portion of the energy
45 output of an Alternative Generation Unit that qualifies under a Co-firing Waiver
46 pursuant to 225 CMR 16.05(2) or under any other applicable provision of 225 CMR
47 16.00.

48
49 APS Alternative Generation Attribute (Attribute). The Generation Attribute of the
50 energy output, or the equivalent of such output as provided in 225 CMR
51 16.05(1)(a)2.b., 225 CMR 16.05(1)(a)3., and in 225 CMR 16.05(1)(a)6.b. of a
52 specific APS Alternative Generation Unit that derives from the Generation Unit's
53 production of APS Alternative Generation.

54
55 APS Alternative Generation Unit. A Generation Unit or Aggregation that has
56 received a Statement of Qualification from the Department.

57
58 APS Ineligible Energy Source. Any of the following fuels and energy sources,
59 whose use is not eligible for APS Alternative Energy Attributes:

- 60 (a) coal;
61 (b) petroleum coke;
62 (c) oil, other Petroleum Products as defined in M.G.L. C. 25A, § 3, and other
63 petroleum-derived materials;
64 (d) natural gas, except when used in Combined Heat and Power or fuel cell
65 technology;
66 (e) Construction and Demolition Waste as defined in 310 CMR 19.006:
67 *Definitions* including, but not limited to, chemically-treated wood; and
68 (f) nuclear power.

69
70 APS Renewable Thermal Generation Unit. An APS Alternative Generation Unit or
71 Aggregation that uses one of the technologies provided in 225 CMR 16.05(1)(a)(6)
72 a. to generate Useful Thermal Energy and has received a Statement of Qualification
73 from the Department.

74
75 Business Day. A business day shall mean Monday through Friday, exclusive of
76 state and federal legal holidays.

77
78 Certificates Obligation. A term defined in the NEPOOL GIS Operating Rules at
79 Rule 4.1(b).
80

81 Clean Wood. Means Clean Wood as defined in 310 CMR 19.006: *Definitions*.
82

83 Combined Heat and Power (CHP). The generation of electrical and Useful Thermal
84 Energy in a single integrated system.
85

86 Commercial Operation Date. The date that a Generation Unit first produces
87 electrical energy for sale within the ISO-NE Control Area. In the case of a
88 Generation Unit that is connected to the End-use Customer's side of the electric
89 meter or produces Off-grid Generation, the date that such Generation Unit first
90 produces electrical energy. In the case of an APS Renewable Thermal Generation
91 Unit, the Commercial Operation Date is the date that such APS Renewable Thermal
92 Generation Unit first produces Useful Thermal Energy.
93

94 Compliance Filing. A document filed annually by a Retail Electricity Supplier with
95 the Department documenting compliance with 225 CMR 16.07, consistent with the
96 format set forth in the Guidelines and submitted no later than the first day of July, or
97 the first Business Day thereafter, of the subsequent Compliance Year.
98

99 Compliance Year. A calendar year beginning January 1st and ending December 31st,
100 for which a Retail Electricity Supplier must demonstrate that it has met the
101 requirements of 225 CMR 16.07 and 16.08.
102

103 Control Area. A geographic region in which a common generation control system is
104 used to maintain scheduled interchange of electrical energy within and without the
105 region.
106

107 DCR. The Massachusetts Department of Conservation and Recreation (DCR)
108 established by M.G.L. c. 21, § 1.
109

110 Dedicated Energy Crops. Crops grown for the purpose of producing fuel, provided
111 that such crops are not grown on land that sequestered significant amounts of
112 carbon, such as a forest, and provided that such land does not have the economic
113 potential to support production of any other agricultural crop grown for human
114 consumption.
115

116 Department. The Massachusetts Department of Energy Resources (DOER),
117 established by M.G.L. c. 25A §1.
118

119 Efficient Steam Technology. [RESERVED]
120

121 Eligible Biogas Fuel. A gaseous fuel that is produced by the contemporaneous
122 bacterial decomposition or thermal gasification of Eligible Biomass Fuel. Eligible

123 Biogas Fuel does not include natural gas but does include renewable natural gas,
124 which is Eligible Biogas Fuel upgraded to a quality similar to natural gas.
125

126 Eligible Biomass Fuel. Fuel sources consisting of the following:
127

- 128 (a) Eligible Biomass Woody Fuel;
- 129 (b) Dedicated Energy Crops;
- 130 (c) Manufactured Biomass Fuel;
- 131 (d) Eligible Biogas Fuel;
- 132 (e) by-products or waste from animals or agricultural crops;
- 133 (f) food or vegetative material;
- 134 (g) algae;
- 135 (h) organic refuse derived fuel; and
- 136 (i) Eligible Liquid Biofuel.

137
138 Eligible Biomass Woody Fuel. Woody fuels that are derived from the following
139 sources, consistent with the requirements of 225 CMR 16.05(4)(g):
140

141 (a) Forest-Derived Residues (Residues):

- 142 1. Tops, crooks and other portions of trees produced as a byproduct,
143 and trees collaterally damaged, during the normal course of
144 harvesting material, such as timber, pulpwood or cordwood in
145 the implementation of a silvicultural prescription as administered
146 by a licensed or certified forester as prescribed in the
147 Department's *Guideline on Biomass, Biogas, and Biofuels for*
148 *Eligible Renewable Thermal Generation Units*.
- 149 2. Trees and portions of trees harvested for the purposed of the
150 restoration and management of habitat for rare & endangered
151 species as listed by the Massachusetts Division of Fisheries and
152 Wildlife. Qualifying harvest areas must be approved by the
153 Massachusetts Division of Fisheries and Wildlife Natural
154 Heritage Program.
- 155 3. Other woody vegetation that interferes with regeneration or the
156 natural growth of the forest, limited to locally invasive native
157 species and non-native invasive woody vegetation.

158
159 (b) Forest-Derived Thinnings (Thinnings):

- 160 1. Unacceptable growing stock which is defined as trees considered
161 structurally weak or have low vigor and do not have the potential
162 to eventually yield an 8 foot saw log or survive for at least the
163 next 10 years.
- 164 2. Trees removed during thinning operations, the purpose of which
165 is to reduce stand density and enhance diameter growth and
166 volume of acceptable growing stock within the residual stand.

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168 (c) Forest Salvage:

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1. Damaged, dying, or dead trees removed due to injurious agents, such as wind or ice storms or the spread of invasive epidemic forest pathogens, insects and diseases or other epidemic biological risks to the forest, but not removed due to competition. Such eligible trees may be removed without limitation for biomass fuel, only if the injurious agent is a threat to forest health or risk to private or public resources, and if the United States Department of Agriculture Animal and Plant Health Inspection Service, the United States Department of Agriculture Forest Service, or appropriate federal or state governmental agency has issued a declaration, rule, or order declaring a major threat to forest health or risk to private or public resources.
 2. Trees removed to reduce fire hazard within fire-adapted forest ecosystems, as certified by a letter to the Department from the state agency responsible for forestry in consultation with the appropriate environmental state agencies.

186 (d) Non-Forest-Derived Residues:

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1. Forest products industry: Residues derived from wood products manufacturing consisting of Clean Wood.
 2. Land use change – agricultural: Trees cut or otherwise removed in the process of converting forest land to agricultural usage, either for new or restored farm land.
 3. Wood waste: Pruned branches, stumps, and whole trees removed during the normal course of maintenance of public or private roads, highways, driveways, utility lines, rights of way, and parks.
 4. Agricultural wood waste: Pruned branches, stumps, and whole trees resulting from maintenance activities directly related to the production of an agricultural product.

200 Eligible Liquid Biofuel. A liquid fuel that is derived from organic waste feedstocks.
201 Organic waste feedstock shall include, but not be limited to, waste vegetable oils,
202 waste animal fats, or grease trap waste. Eligible Liquid Biofuel shall not include
203 petroleum-based waste or Hazardous Waste as defined in 310 CMR 40.0006:
204 *Terminology, Definitions, and Acronyms*, unless otherwise determined by the
205 MassDEP.
206

207 End-use Customer. A person or entity in Massachusetts that purchases electrical
208 energy at retail from a Retail Electricity Supplier, except that a Generation Unit
209 taking station service at wholesale from ISO-NE or self-supplying from its owner's
210 other generating stations, shall not be considered an End-use Customer.
211

212 Flywheel. A device used to store rotational kinetic energy.
213

214 Fuel Cell Generation Unit. A device that uses Hydrogen as a fuel in an electro-
215 chemical reaction to produce electricity, thermal energy, and water.

216
217 Generation Attribute. A non-price characteristic of the energy output of a
218 Generation Unit including, but not limited to, the Unit's fuel type, emissions,
219 vintage and APS eligibility.

220
221 Generation Unit. A facility that converts a fuel or an energy resource into electrical
222 energy, thermal energy, or both.

223
224 GIS Certificate. An electronic record produced by the NEPOOL GIS that identifies
225 Generation Attributes of each MWh accounted for in the NEPOOL GIS.

226
227 Guidelines. A set of clarifications, interpretations, and procedures, including forms,
228 developed by the Department to assist in compliance with the requirements of 225
229 CMR 16.00. The Department may issue new or revised Guidelines, after a public
230 comment period. Each Guideline shall be effective on its date of issuance or on
231 such date as specified, except as otherwise provided in 225 CMR 16.00.

232
233 International Association of Plumbing and Mechanical Officials (IAPMO). The
234 International Association of Plumbing and Mechanical Officials is a non-profit,
235 accredited standards developer and certification body which rates and certifies solar
236 heating collectors and systems.

237
238 Incremental Electrical Energy. Electrical energy generated by a CHP Unit that is
239 either greater than (expressed as a positive amount) or less than (expressed as a
240 negative amount) the electrical energy generated by the CHP Unit prior to the
241 addition of new electric generation nameplate capacity, Useful Thermal Energy, or
242 Incremental Useful Thermal Energy.

243
244 Incremental Fuel. The amount of additional fuel used by a CHP Generation Unit
245 which is attributable to the production of Incremental Useful Thermal Energy or
246 Incremental Electrical Energy.

247
248 Incremental Useful Thermal Energy. Useful Thermal Energy produced by a CHP
249 Unit that is distinct in its final distribution, beneficial measure, and metering from
250 Useful Thermal Energy previously produced by the CHP Unit, but only to the extent
251 that the Incremental Useful Thermal Energy does not reduce the Useful Thermal
252 Energy previously produced.

253
254 ISO-NE. ISO New England Inc., the independent system operator for New England,
255 the regional transmission organization for most of New England, which is
256 authorized by the Federal Energy Regulatory Commission (FERC) to exercise for
257 the New England Control Area the functions required pursuant to the FERC's Order
258 No. 2000.

259

260 ISO-NE Settlement Market System. The ISO-NE's electronic database system into
261 which all real-time load and generation data are entered and from which such data
262 are provided to the NEPOOL GIS.

263
264 Manufactured Biomass Fuel. A biomass fuel that is prepared, other than by means of
265 fuel drying, through a fuel processing facility that is separate from a Generation Unit
266 and that utilizes Eligible Biomass Woody Fuel for production. Examples include,
267 but are not limited to, the mechanical production of wood pellets or bio-dust, and the
268 refinement of bio-oil through pyrolysis.

269
270 Massachusetts Clean Energy Technology Center (MassCEC). The center established
271 by M.G.L. c. 23J, § 2.

272
273 MassDEP. The Massachusetts Department of Environmental Protection established
274 by M.G.L. c. 21A, § 7.

275
276 Megawatt-hour (MWh). A unit of electrical energy or work equivalent to one
277 million watts of power operating for one hour, or for the purpose of thermal energy,
278 a unit of energy equal to 3,412 thousand British Thermal Units (Btu).

279
280 NEPOOL GIS. The NEPOOL Generation Information System, which includes a
281 generation information database and certificate system, operated by the New
282 England Power Pool (NEPOOL), its designee or successor entity, that accounts for
283 Generation Attributes of electrical energy consumed within, imported into, or
284 exported from the ISO-NE Control Area.

285
286 North American Electric Reliability Council (NERC) Tag. An identification of an
287 electrical energy interchange transaction assigned in accordance with rules set forth
288 by the North American Electric Reliability Council.

289
290 Off-grid Generation. The electrical energy produced by a Generation Unit that is
291 not connected to a utility transmission or distribution system.

292
293 Operator. Any person or entity who has charge or control of a Generation Unit
294 subject to 225 CMR 16.00, including without limitation a duly authorized agent or
295 lessee of the Owner, or a duly authorized independent contractor.

296
297 Owner. Any person or entity who, alone or in conjunction with others, has legal
298 ownership, a leasehold interest, or effective control over the real property or
299 property interest upon which a Generation Unit is located, or the airspace above said
300 real property, including without limitation a duly authorized agent of the Owner.
301 For the purposes of 225 CMR 16.02, Owner does not mean a person or entity
302 holding legal title or security interest solely for the purpose of providing financing.
303

304 Retail Electricity Product. An electrical energy offering that is distinguished by its
305 Generation Attributes and that is offered for sale by a Retail Electricity Supplier to
306 End-use Customers.
307

308 Retail Electricity Supplier. A person or entity that sells electrical energy to End-use
309 Customers in Massachusetts, including but not limited to electric utility distribution
310 companies supplying basic service or any successor service to End-use Customers.
311 A Municipal Lighting Plant shall be considered a Retail Electricity Supplier;
312 however, it shall be exempt from the obligations of a Retail Electricity Supplier
313 under 225 CMR 16.00 so long as and insofar as it is exempt from the requirements
314 to allow competitive choice of generation supply pursuant to M.G.L. c. 164, § 47A.
315

316 Solar Rating and Certification Corporation (SRCC). The Solar Rating and
317 Certification Corporation is a non-profit organization with the primary goal to
318 develop and implement national rating standards and certification programs for solar
319 energy equipment.
320

321 Statement of Qualification (SQ). A written document from the Department that
322 qualifies a Generation Unit or Aggregation as an APS Alternative Generation Unit,
323 or that qualifies a portion of the energy output of a Generation Unit or Aggregation
324 as APS Alternative Generation.
325

326 Sustainable Forestry Management. Practicing a land stewardship ethic that integrates
327 the reforestation, managing, growing, nurturing, and harvesting of trees for useful
328 products with the conservation of soil, air and water quality, wildlife and fish
329 habitat, and aesthetics and the stewardship and use of forests and forest lands in a
330 way, and a rate, that maintains their biodiversity, productivity, regeneration
331 capacity, vitality, and potential to fulfill, now and in the future, relevant ecological,
332 economic, and social functions at local, national, and global levels, and that does not
333 cause damage to other ecosystems. Criteria for sustainable forestry include:

- 334 (a) conservation of biological diversity;
- 335 (b) maintenance of productive capacity of forest ecosystems;
- 336 (c) maintenance of forest ecosystem health and vitality;
- 337 (d) conservation and maintenance of soil and water resources;
- 338 (e) maintenance of forest contributions to global carbon cycles;
- 339 (f) maintenance and enhancement of long-term multiple socioeconomic benefits
340 to meet the needs of societies; and
- 341 (g) a legal, institutional, and economic framework for forest conservation and
342 sustainable management.
343

344 Thermal Waste-to-Energy Generation Unit. A Generation Unit that utilizes
345 conventional municipal solid waste plant technology in commercial use to generate
346 Useful Thermal Energy and was in operation as of January 1, 2016.
347

348 Useful Thermal Energy. Energy in the form of direct heat, steam, hot water, hot air,
349 or other thermal form that is used in the production and beneficial measures of

350 heating, cooling, humidity control, process use, or other valid thermal end use
351 energy requirements, for which fuel or electricity would otherwise be consumed.

352
353 Valid Air Permit. Within the United States, a current and effective authorization,
354 license, certificate, or like approval to construct and/or operate a source of air
355 pollution, issued or required by the regulatory agency designated in the applicable
356 State Implementation Plan to issue permits under the Clean Air Act, 42 U.S.C. §§
357 7401, *et seq.* In jurisdictions outside of the United States, it shall be a document
358 demonstrating an equivalent authorization.

359
360 16.03: Administration

361
362 225 CMR 16.00 shall be administered by the Department.

363
364 16.04: Applicability

365
366 225 CMR 16.00 applies to Retail Electricity Suppliers and to the Owners or
367 Operators of APS Alternative Generation Units.

368
369 16.05: Eligibility Criteria for APS Alternative Generation Units

370
371 (1) Eligibility Criteria. A Generation Unit may qualify as an APS Alternative
372 Generation Unit subject to the limitations in 225 CMR 16.05.

373
374 (a) Technologies. The Generation Unit shall use one or more of the
375 technologies listed in 225 CMR 16.05(1)(a)1. through 6.

376
377 1. Gasification. This technology is no longer eligible because it was
378 eliminated pursuant to Section two of Chapter 251 of the Acts of 2014, now
379 codified at M.G.L. c. 25A, § 11F½.

380
381 2. Combined Heat and Power. A Generation Unit that is operated to
382 produce Combined Heat and Power may qualify as an APS Alternative
383 Generation Unit, subject to the limitations in 225 CMR 16.05(1)(a)2.

384
385 a. CHP Metering and Reporting Requirements. A CHP Unit shall
386 provide for the metering of electrical energy generated, Useful Thermal
387 Energy produced, and fuel consumed; for calculating the net quantity of
388 MWh for which Alternative Energy Attributes are qualified, and for
389 reporting to the NEPOOL GIS of that net qualified MWh quantity in a
390 manner prescribed in 225 CMR 16.05(1)(c), for each quarter of the
391 Compliance Year. Monitoring, reporting, and calculating of electrical
392 energy and Useful Thermal Energy produced in that quarter shall be
393 expressed in MWh, and the total of all fuel and any other energy
394 consumed in that quarter is calculated using the energy content of the fuel
395 based on higher heating value.

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b. Determination of APS Alternative Energy Attributes. The Generation Unit shall be provided APS Alternative Energy Attributes as specified in 225 CMR 16.05(1)(a)2.b.

i. A CHP Unit which produced neither electrical nor Useful Thermal Energy before January 1, 2008, shall be provided APS Alternative Energy Attributes equal to the result, if positive, of the following calculation: take the sum of (1) the electrical energy generated divided by the overall efficiency of electrical energy delivered to the end-use from the electrical grid (which efficiency is equal for this purpose to 0.33); and (2) the Useful Thermal Energy divided by the overall efficiency of thermal energy delivered to the end-use from a standalone heating unit (which efficiency is equal for this purpose to 0.80); and subtract from this sum the total of all fuel and any other energy consumed by the CHP Unit in that quarter expressed in MWh and calculated using the energy content of the fuel based on its higher heating value.

ii. A CHP Unit which produced either or both electrical and Useful Thermal Energy before January 1, 2008, and added either or both Incremental Useful Thermal Energy or Incremental Electrical Energy after such date, shall be provided APS Alternative Energy Attributes equal to the result, if positive, of the following calculation: take the sum of (1) the Incremental Electrical Energy generated divided by the overall efficiency of electrical energy delivered to the end-use from the electrical grid (which efficiency is equal for this purpose to 0.33); and (2) the Incremental Useful Thermal Energy divided by the overall efficiency of thermal energy delivered to the end-use from a standalone heating unit (which efficiency is equal for this purpose to 0.80); and subtract from this sum the total of all Incremental Fuel and any other incremental energy consumed by the CHP Unit in that quarter expressed in MWh and calculated using the energy content of the fuel based on its higher heating value.

c. Energy Deliverability Requirement. The CHP Unit shall deliver Useful Thermal Energy to an end-use load located in the Commonwealth of Massachusetts.

3. Flywheel Storage Unit. A Flywheel Storage Unit that stores and discharges electrical energy may qualify as an APS Alternative Generation Unit, subject to the limitations in 225 CMR 16.05(1)(a)3.

- 441 a. The Flywheel Storage Unit must participate in the ISO-NE regulation
442 market.
443
- 444 b. The portion of the electrical energy output of a Flywheel Storage Unit
445 that may qualify for APS Alternative Generation shall be calculated each
446 quarter of the Compliance Year as 65% of the electrical energy
447 discharged from the Flywheel Storage Unit during the quarter.
448
- 449 c. The electrical energy output, the calculation made to derive the net
450 quantity of MWh for which Alternative Energy Attributes are qualified
451 and that net MWh quantity shall be reported to the NEPOOL GIS as
452 specified in 225 CMR 16.05(1)(c).
453
- 454 4. Paper-derived Fuel. This technology is no longer eligible because it was
455 eliminated pursuant to Section two of Chapter 251 of the Acts of 2014, now
456 codified at M.G.L. c. 25A, § 11F½.
457
- 458 5. Efficient Steam Technology. [RESERVED]
459
- 460 6. APS Renewable Thermal Generation Unit. A Generation Unit that uses
461 one or more of the technologies provided in 225 CMR 16.05(1)(a)6.a. and
462 generates Useful Thermal Energy may qualify as an APS Alternative
463 Generation Unit, subject to the limitations in 225 CMR 16.05(1)(a)6.a. and
464 the provisions in 225 CMR 16.05(4).
465
- 466 a. Eligible APS Renewable Thermal Generation Unit technologies and
467 standards:
468
- 469 i. Air-Source Heat Pump. An air-source heat pump Generation Unit
470 uses compression and evaporation to transfer thermal energy from the
471 ambient outdoor environment to a thermal load as Useful Thermal
472 Energy. The Generation Unit must be designed to operate effectively
473 in cold climates, such that the air-source heat pump provides
474 meaningful net annual reductions in conventional energy use. Air-
475 source heat pumps are provided APS Alternative Energy Attributes
476 only when operating in a heating mode; that is, when transferring
477 thermal energy from the ambient outdoor environment to a thermal
478 load. An applicant must demonstrate to the satisfaction of the
479 Department that the air-source heat pump is the primary source of
480 heating for the residential Generation Unit, building, or process it
481 serves, and meets the design criteria, as provided in the Department's
482 *Guideline on Metering and Calculating the Useful Thermal Output of*
483 *Eligible Renewable Thermal Generation Units*.
484
- 485 ii. Ground Source Heat Pump. A ground source heat pump
486 Generation Unit uses compression and evaporation to transfer thermal

487 energy from the ambient underground or water environment to a
488 thermal load as Useful Thermal Energy. The Generation Unit must
489 receive all applicable permits, approvals, and registrations from the
490 MassDEP. An applicant must demonstrate to the satisfaction of the
491 Department that it meets the design criteria, as provided in the
492 Department's *Guideline on Metering and Calculating the Useful*
493 *Thermal Output of Eligible Renewable Thermal Generation Units*.
494 Ground or water-source heat pumps are provided APS Alternative
495 Energy Attributes only when operating in a heating mode; that is,
496 when transferring thermal energy from the ambient underground or
497 water environment to a thermal load.

498
499 iii. Deep Geothermal Heat Exchange. A deep geothermal heat
500 exchange Generation Unit uses hot geological formations deep below
501 the ground surface to produce heat through direct heat exchange. The
502 Generation Unit must receive all applicable permits, approvals, and
503 registrations from the MassDEP, and must demonstrate to the
504 Department it can operate at or above minimum performance
505 requirements as provided in the Department's *Guideline on Metering*
506 *and Calculating the Useful Thermal Output of Eligible Renewable*
507 *Thermal Generation Units*.

508
509 iv. Solar Thermal. A solar thermal Generation Unit uses collectors,
510 to transfer solar irradiation energy to a working fluid, as well as a
511 pump or fan to actively circulate the air, water, or other working fluid
512 through the collectors. Solar thermal collectors must have a
513 performance certification issued by the Solar Rating and Certification
514 Corporation, International Association of Plumbing and Mechanical
515 Officials, or other performance certification approved by the
516 Department. Unglazed flat plate collectors for pool heating are not
517 eligible to qualify as an APS Renewable Thermal Generation Unit.

518
519 v. Woody Biomass. A woody biomass Generation Unit must use
520 automatically fed boilers or furnaces, and must utilize either Eligible
521 Biomass Woody Fuel, or bio-oil refined through pyrolysis or biogas
522 derived from Eligible Biomass Woody Fuel. Woody biomass
523 Generation Units must meet the provisions regarding efficiency,
524 system performance, use of thermal energy storage, particulate matter
525 and carbon monoxide emissions, fuel supply sustainability, fuel
526 quality, and greenhouse gas emissions in 225 CMR 16.05(4)(g), and
527 the Department's *Guideline on Biomass, Biofuels and Biogas for*
528 *Eligible Renewable Thermal Generation Units*, as well as receive all
529 applicable permits from the MassDEP.

530
531 vi. Biogas. A biogas Generation Unit uses Eligible Biogas Fuel
532 derived from either an Anaerobic Digester, as that term is defined in

533 310 CMR 7.70(10)(b): *Definitions*, or a landfill that has received all
534 applicable permits from the MassDEP or comparable environmental
535 agency responsible for regulating such facilities. Eligible Biogas Fuel
536 must be conveyed directly from its source to the biogas Generation
537 Unit in a dedicated pipeline. Biogas Generation Units may co-fire with
538 other fuels subject to the provisions in 225 CMR 16.05(2), and must
539 meet quality and performance criteria provided in the Department's
540 *Guideline on Biomass, Biofuels and Biogas for Eligible Renewable*
541 *Thermal Generation Units*.

542
543 vii. Liquid Biofuels. A liquid biofuel Generation Unit must use
544 Eligible Liquid Biofuels. Liquid biofuel Generation Units may co-fire
545 with other fuels subject to the provisions in 225 CMR 16.05(2), but
546 shall contain at least 10% by volume Eligible Liquid Biofuel. The
547 liquid biofuels Generation Unit must meet quality and performance
548 criteria provided in the Department's *Guideline on Biomass, Biofuels*
549 *and Biogas for Eligible Renewable Thermal Generation Units*, must
550 receive all applicable permits from the MassDEP, and is subject to the
551 provisions in 225 CMR 16.05(4)(f).

552
553 viii. Compost Heat Exchange System. A Generation Unit that uses a
554 facility to recover or exchange heat from the aerobic biodegradation of
555 organic matter during the production of compost.

556
557 b. Determination of APS Alternative Generation Attributes. Each
558 Generation Unit listed in 225 CMR 16.05(1)(a)6. shall earn APS
559 Alternative Energy Attributes as specified in 225 CMR
560 16.05(1)(a)6.b., 225 CMR 16.05(4), and in the Department's
561 *Guideline on Metering and Calculating the Useful Thermal Output of*
562 *Eligible Renewable Thermal Generation Units*, as follows:

563
564 i. An APS Renewable Thermal Generation Unit shall earn APS
565 Alternative Energy Attributes for each MWh of net Useful Thermal
566 Energy generated on a quarterly basis.

567
568 ii. Earned APS Alternative Energy Attributes shall be for the
569 generation of Useful Thermal Energy, net of any fossil fuel energy and
570 electrical energy input to the APS Renewable Thermal Generation
571 Unit necessary for its operation, however, the Department may
572 exclude small energy uses, including but not limited to, fans, pumps,
573 meters, controls, and data collection. The Department shall prescribe
574 the calculations for netting energy input from the Useful Thermal
575 Energy in the Department's *Guideline on Metering and Calculating*
576 *the Useful Thermal Output of Eligible Renewable Thermal Generation*
577 *Units*.

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iii. Notwithstanding 225 CMR 16.05(1)(a)6.b.i., APS Alternative Energy Attributes for an APS Renewable Thermal Generation Unit that meets the criteria of a small Generation Unit, as defined in the Department’s *Guideline on Metering and Calculating the Useful Thermal Output of Eligible Renewable Thermal Generation Units*, may be:

(i) forward minted in each calendar quarter in a quantity equal to the APS Alternative Generation Attributes that the small Generation Unit is expected to generate; or

(ii) pre-minted in one calendar quarter in a quantity equal to the APS Alternative Generation Attributes that the small Generation Unit is deemed to generate over its qualification period; as prescribed in 225 CMR 16.05(4)(c).

c. Energy Deliverability Requirement. An APS Renewable Thermal Generation Unit shall deliver Useful Thermal Energy to an end-use load located in the Commonwealth of Massachusetts.

d. Combination of Funding. If a Generation Unit receives funding in an amount exceeding 80% of the Generation Unit’s total construction and installation costs from a grant or incentive program administered by the Department or any other state agency prior to [**the Effective Date of this Subsection**], the Generation Unit shall not be eligible to qualify in the APS.

7. Fuel Cell. A Fuel Cell Generation Unit that produces electricity and/or Useful Thermal Energy may qualify as an APS Alternative Generation Unit, subject to the limitations in 225 CMR 16.05(1)(a)7.

a. Source of Hydrogen. A Fuel Cell Generation Unit that uses hydrogen generated through the use of propane shall be required to certify that the propane was manufactured using only natural gas.

b. Overall Efficiency. To qualify as an APS Alternative Generation Unit, a Fuel Cell Generation Unit shall be more efficient than the current average for emitting locational marginal units as based on the heat rates for these units shown in the most recent ISO-NE Electric Generator Air Emissions Report available in the same year in which a Fuel Cell Generation Unit submits an SQA. A Fuel Cell Generation Unit that generates both electricity and Useful Thermal Energy must have an overall efficiency of at least 55%. The overall efficiency of a Fuel Cell Generation Unit shall be calculated as the sum of the MWh of electricity generated, excluding any electricity

625 utilized for parasitic load, plus the MWh of Useful Thermal Energy,
626 divided by the total higher heating MWh value of fuel consumed by
627 the Fuel Cell Generation Unit. Supporting operating data, confirming
628 that the Fuel Cell Generation Unit continues to meet the Overall
629 Efficiency requirement in 225 CMR 16.05(1)(a)7.b., must be
630 submitted to the Department on an annual basis in order for the Fuel
631 Cell Generation Unit to maintain its Statement of Qualification.
632

633 c. Attribute Multiplier. A Fuel Cell Generation Unit shall earn one and a
634 half APS Alternative Energy Attributes for each MWh of electricity
635 and/or 3,412,000 British thermal units of net Useful Thermal Energy
636 generated. A Fuel Cell Generation Unit shall retain the multiplier
637 provided at its time of qualification as long as it continues to meet all
638 other applicable eligibility criteria in 225 CMR 16.05.
639

640 d. Metering Requirements. The net energy output from a Fuel Cell
641 Generation Unit shall be metered according to the specifications in the
642 Department's Guideline on Metering and Calculating the Energy Output
643 of Eligible Fuel Cell Generation Units and verified by an independent
644 Third Party Meter Reader, as defined in Rule 2.5(j) of the NEPOOL GIS
645 Operating Rules and approved by the Department. The APS Alternative
646 Generation Attributes reported to the NEPOOL GIS by an independent
647 Third Party Meter Reader shall be the amount that is qualified for
648 Alternative Energy Attributes, as specified in 225 CMR 16.05. This
649 amount will be inclusive of the application of any multiplier provided in
650 225 CMR 16.05(1)(a)7.c.
651

652 8. Thermal Waste-To-Energy. A Thermal Waste-to-Energy Generation
653 Unit may qualify as an APS Alternative Generation Unit and shall be
654 metered according to the specifications in the Department's Guideline on
655 Metering and Calculating the Useful Thermal Output of Eligible
656 Renewable Thermal Generation Units.
657

658 (b) Commercial Operation Date. With the exception of Thermal Waste-to-
659 Energy Generation Units, an APS Alternative Generation Unit's Commercial
660 Operation Date shall be on or after January 1, 2008, however, for an APS
661 Renewable Thermal Generation Unit, the Commercial Operation Date shall be
662 on or after January 1, 2015, and for a Fuel Cell Generation Unit, the Commercial
663 Operation Date shall be on or after January 1, 2017.
664

665 (c) Metering. Except as provided in 225 CMR 16.05(4)(b), the APS
666 Alternative Generation from a Generation Unit shall be verified by an
667 independent verification system or person participating in the NEPOOL GIS
668 accounting system as an independent Third Party Meter Reader, as defined in
669 Rule 2.5(j) of the NEPOOL GIS Operating Rules, or any successor rule, and
670 approved by the Department. The APS Alternative Generation reported to the

671 NEPOOL GIS by a Third Party Meter Reader shall be the net amount that is
672 qualified for Alternative Energy Attributes, as specified in 225 CMR 16.05.
673

674 (d) Location. The Generation Unit must be located within the ISO-NE Control
675 Area, except where otherwise specified in 225 CMR 16.00, and subject to the
676 limitations in 225 CMR 16.05(1)(d).
677

678 1. Off-grid Generation. If the Generation Unit produces Off-grid
679 Generation, such Unit must be located in Massachusetts.
680

681 2. Behind-the-meter Generation. If the Generation Unit is wired to the
682 electrical system on the End-use Customer's side of a retail electric meter,
683 such Unit must be interconnected to the electric grid in Massachusetts.
684

685 (e) Net Carbon Dioxide Emissions Rate. A Generation Unit that generates
686 electricity shall not exceed a net site carbon dioxide emissions rate equal to the
687 average emissions rate of the current average value for emitting locational
688 marginal units as shown in the most recent ISO-NE Electric Generator Air
689 Emissions Report available in the same year in which an SQA is submitted for
690 the Generation Unit. In quantifying the net site carbon dioxide emissions, the
691 emissions attributable to any site fuel consumption displaced by the Useful
692 Thermal Energy generated by the Generation Unit is to be subtracted from the
693 emissions due to the direct consumption of fuel by the Generation Unit. The
694 monitoring, calculation, and reporting of the net carbon dioxide emissions rate
695 shall be subject to verification by an independent consultant acceptable to the
696 Department and, in consultation with the MassDEP and at the expense of the
697 Unit's Owner or Operator. An APS Renewable Thermal Generation Unit using
698 Eligible Biomass Fuel shall not be subject to the net carbon dioxide emissions
699 rate in 225 CMR 16.05(1)(e), but instead subject to the net greenhouse gas
700 emission requirement in 225 CMR 16.05(4)(i).
701

702 (f) Eligibility of RPS Class I Renewable Generation Units, and RPS Class II
703 Renewable Generation Units. A Generation Unit that is qualified as an RPS
704 Class I Renewable Generation Unit pursuant to 225 CMR 14.00 or as an RPS
705 Class II Renewable Generation Unit pursuant to 225 CMR 15.00 may also be
706 qualified as an APS Alternative Generation Unit provided it meets all eligibility
707 criteria in 225 CMR 16.00.
708

709 (g) Reclassification of APS Alternative Generation Units. An APS Alternative
710 Generation Unit that meets the eligibility to qualify more than one type of APS
711 Alternative Generation Unit shall only qualify as one type of APS Alternative
712 Generation Unit, which the Owner shall designate in its Statement of
713 Qualification Application. An APS Alternative Generation Unit shall have the
714 option to switch the type of APS Alternative Generation Unit for which it has
715 received a Statement of Qualification one time during the duration of its
716 qualification period.

717
718 (2) Co-firing Waiver. A portion of the electrical energy or Useful Thermal Energy
719 output of a Generation Unit that uses an APS Ineligible Energy Source with another
720 fuel may qualify as APS Alternative Generation provided the Generation Unit meets
721 the eligibility requirements of 225 CMR 16.05, subject to the limitations in 225
722 CMR 16.05(2).
723

724 (a) The percentage of the total electrical energy or Useful Thermal Energy
725 output that qualifies as APS Alternative Generation in a given time period shall
726 be equal to one minus the ratio of the net heat content of the APS Ineligible
727 Energy Source consumed to the net heat content of all fuel consumed in that
728 time period.
729

730 (b) If co-firing an APS Ineligible Energy Source with another fuel, the entire
731 Generation Unit must demonstrate to the satisfaction of the Department in
732 consultation with the MassDEP that the Unit meets or will meet the emission
733 performance standards, including the net carbon dioxide emissions rate, that are
734 or would be required by the MassDEP for comparably-fueled Units within
735 Massachusetts, including the standards specified for the technology type of the
736 Unit as set forth in 225 CMR 16.05(1)(a) and (e). The Department may require
737 the Generation Unit Owner or Operator to retain at its own expense a third-party
738 consultant deemed satisfactory to the Department, to provide DOER and the
739 MassDEP with assistance in determining whether this criterion is or will be met
740 by the Unit.
741

742 (c) The Generation Unit must provide a fuel supply plan that specifies each
743 and every fuel that it intends to use, in what relative proportions in co-firing, and
744 with what individual input heat values. Such plan shall include the procedures
745 by which the Unit will document to the satisfaction of the Department its
746 compliance with the plan.
747

748 (d) The provisions of 225 CMR 16.05(2) shall not apply to the incidental use
749 of an APS Ineligible Energy Source solely for the purpose of cold starting a
750 Generation Unit that otherwise exclusively uses other fuels.
751

752 (3) Special Provisions for Aggregations. An Aggregation of Generation Units that
753 are located behind the customer meter or that are Off-grid Generation Units, each of
754 which could independently meet the relevant requirements of 225 CMR 16.05, may
755 receive a single SQ and be treated as a single APS Alternative Generation Unit under
756 the following criteria and procedures:

757 (a) Each Generation Unit in such Aggregation must use the same technology
758 as all other Units in the Aggregation.

759 (b) Each of the Owners or Operators of Generation Units within the
760 Aggregation must enter into an agreement with a person or entity that serves as

761 the Authorized Agent for the Aggregation in all dealings with the Department
762 and with the NEPOOL GIS, and such agreement must include procedures by
763 which the electrical energy output and, in the case of a CHP Unit, the Useful
764 Thermal Energy output and fuel input, of each Unit shall be monitored and
765 reported to the NEPOOL GIS.

766 (c) The Authorized Agent of the Aggregation must establish and maintain a
767 Generator account at the NEPOOL GIS under the NEPOOL GIS Operating
768 Rules, including all provisions for Non-NEPOOL Generator Representatives, as
769 that term is defined in Rule 2.1(a)(vi) of the NEPOOL GIS Operating Rules.

770 (d) The electrical energy output, or the Alternative Energy Attribute qualified
771 portion of such output as provided in 225 CMR 16.05(1)(a)2.a., 225 CMR
772 16.05(1)(a)3., or 225 CMR 16.05(1)(a)6., of each of the Generation Units in the
773 Aggregation must be individually monitored and recorded, and it must be
774 reported to the NEPOOL GIS as part of an aggregated total for the Aggregation,
775 by an independent Third Party Meter Reader as defined in Rule 2.5(j) of the
776 NEPOOL GIS Operating Rules.

777 (4) Special Provisions for APS Renewable Thermal Generation Units. A
778 Generation Unit that meets the eligibility provisions under 225 CMR 16.05(1)(a)6.,
779 shall be subject to the following provisions:

780 (a) Size Classification. APS Renewable Thermal Generation Units shall be
781 classified as small, intermediate, or large based on the rated capacity of the
782 system. If an APS Renewable Thermal Generation Unit consists of several
783 individual and separate units, the individual unit's capacities shall be summed
784 and the total capacity will be considered against the size threshold. In the case of
785 a combination of solar thermal technologies and other technologies, the
786 thresholds shall be applied separately to the solar and non-solar units. APS
787 Renewable Thermal Generation Unit size classifications are as follows:

Classification	Small	Intermediate		Large
		Calculated net renewable thermal based on <u>indirect</u> metering	Calculated net renewable thermal output based on <u>direct</u> metering of fuel input	
AEC calculation basis	Calculated net renewable thermal output	Calculated net renewable thermal based on <u>indirect</u> metering	Calculated net renewable thermal output based on <u>direct</u> metering of fuel input	Metered net renewable thermal output
Solar thermal: evacuated tube and flat plate solar hot water	Collector surface area less than or equal to 660 sq ft	Collector surface area between 660 and 4,000 sq ft	-	Collector surface area greater than or equal to 4,000 sq ft
Solar thermal: solar hot air	-	Collector surface area less than or equal to 10,000 sq ft	-	Collector surface area greater than 10,000 sq ft
Solar sludge dryer	-	-	-	All
Eligible Biomass Fuel	-	-	Capacity less than or equal to 1,000,000 Btu per hour	Capacity greater than 1,000,000 Btu per hour
Compost heat exchange system	-	-	-	All
Air source heat pump: electric motor or engine driven	Output capacity less than or equal to 134,000 Btu per hour	-	Output capacity between 134,000 and 1,000,000 Btu per hour	Output capacity greater than or equal to 1,000,000 Btu per hour
Ground source heat pump	Output capacity less than or equal to 134,000 Btu per hour	-	Output capacity between 134,000 and 1,000,000 Btu per hour	Output capacity greater than or equal to 1,000,000 Btu per hour
Deep geothermal	-	-	-	All

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Small Generation Units shall have the option to be classified as either intermediate or large Generation Units if they wish to forgo pre-minting or forward minting and instead meter their Useful Thermal Energy as required by the *Guideline on Metering and Calculations – Part 2 (Metering for Intermediate*

793 *and Large Generation Units*). Intermediate Generation Units shall also have the
794 option to be classified as large Generation Units if they wish to meter their
795 Useful Thermal Energy as required by the *Guideline on Metering and*
796 *Calculations – Part 2 (Metering for Intermediate and Large Generation Units)*.
797 Generation Units which opt to change their size classification must notify the
798 Department in their Statement of Qualification Application and must remain
799 their chosen size classification for the duration of their qualification period.
800

801
802 (b) Metering Requirements. The net Useful Thermal Energy output from an
803 APS Renewable Thermal Generation Unit shall be metered according to the
804 specifications in the Department’s *Guideline on Metering and Calculating the*
805 *Useful Thermal Output of Eligible Renewable Thermal Generation Units* and
806 verified by an independent Third Party Meter Reader, as defined in Rule 2.5(j) of
807 the NEPOOL GIS Operating Rules and approved by the Department. The APS
808 Alternative Generation Attributes reported to the NEPOOL GIS by an
809 independent Third Party Meter Reader shall be the amount as specified in 225
810 CMR 16.05(1)(a)6.b. This amount will be inclusive of any netting of energy use
811 by the APS Renewable Thermal Generation Unit as prescribed in 225 CMR
812 16.05(1)(a)6.b.iii., and the application of any multiplier identified in the
813 Department’s *Guideline on Multipliers for Renewable Thermal Generation*
814 *Units*.

- 815 1. An APS Renewable Thermal Generation Unit that uses more than one
816 eligible technology in 225 CMR 16.05(1)(a)6.a. is required to use the same
817 independent Third Party Meter Reader for all technologies.
- 818 2. Each APS Renewable Thermal Generation Unit is required to have its own
819 individual NEPOOL GIS asset. An APS Renewable Thermal Generation
820 Unit that uses more than one eligible technology in 225 CMR 16.05(1)(a)6.a.
821 is required to have a NEPOOL GIS asset for each technology. APS
822 Renewable Thermal Generation Units that utilize the same technology and
823 are located in the same state may qualify as an Aggregation and share a
824 NEPOOL GIS asset.
- 825 3. An APS Renewable Thermal Generation Unit that meets the criteria of a
826 small Generation Unit or an intermediate as prescribed in 225 CMR
827 16.05(1)(b)(ii) shall be exempt from the metering requirements in 225 CMR
828 16.05(4)(b) and, instead, be subject to the Small and Intermediate Generation
829 Unit Annual Net Useful Thermal Energy Determination in 225 CMR
830 16.05(4)(c).

831 (c) Small and Intermediate Generation Unit Annual Net Useful Thermal
832 Energy Determination. An APS Renewable Thermal Generation Unit that meets
833 the criteria of a small or intermediate Generation Unit as prescribed in 225 CMR
834 16.05(4)(a) may have its annual net Useful Thermal Energy generation output
835 determined by a formula or methodology as prescribed in the Department’s
836 *Guideline on Metering and Calculating the Useful Thermal Output of Eligible*
837 *Renewable Thermal Generation Units*. This approximation shall be a reasonable
838 determination by the Department to estimate the net Useful Thermal Energy

839 delivered by the APS Renewable Thermal Generation Unit, specifically
840 considering the APS Renewable Thermal Generation Unit's capacity,
841 performance characteristics, and load application being served. The MassCEC
842 will act as the independent verifier for all small Generation Units and
843 intermediate Generation Units using Eligible Biomass Woody Fuel, and will
844 deploy appropriate and reasonable measures to verify ongoing operation of the
845 small Generation Units in line with their estimated net Useful Thermal Energy
846 generation.

847 (d) Forward Minting and Pre-Minting of APS Alternative Generation
848 Attributes for small APS Renewable Thermal Generation Units. An APS
849 Renewable Thermal Generation Unit that meets the criteria of a small Generation
850 Unit as prescribed in the Department's *Guideline on Metering and Calculating*
851 *the Useful Thermal Output of Eligible Renewable Thermal Generation Units*
852 may be provided all of its APS Alternative Generation Attributes as follows:

853 1. The APS Renewable Thermal Generation Unit may have all of the APS
854 Alternative Generation Attributes in 225 CMR 16.05(4)(c) pre-minted as
855 APS Alternative Generation Attributes, and may be minted in the first quarter
856 after the APS Alternative Generation Unit's Statement of Qualification or
857 Commercial Operation Date, whichever is later. The volume of pre-minted
858 APS Alternative Generation Attributes shall be equal to 40 times the
859 quarterly volume of the monthly forward minted Attributes determined in
860 225 CMR 16.05(4)(c).

861 2. In a Compliance Year in which the ratio of the APS Alternative
862 Generation Attributes settled for compliance to the APS compliance
863 obligation from the Compliance Year two years prior was more than 0.75, the
864 APS Renewable Thermal Generation Unit shall be forward minted each
865 quarter for the 40 quarters following its Statement of Qualification or its
866 Commercial Operation Date, whichever is later, a quantity of APS
867 Alternative Generation Attributes equal to one-fourth of the annual net useful
868 thermal energy determination as provided in 225 CMR 16.05(4)(c), times any
869 applicable multiplier as provided in the Department's *Guideline on*
870 *Multipliers for Renewable Thermal Generation Units.*

871 (e) Eligibility Criteria for Small Air Source Heat Pumps. All small air source
872 heat pump Renewable Thermal Generation Units, as prescribed in 225 CMR
873 16.05(4)(a), must meet all of the following requirements:

- 874 1. be ENERGY STAR™ certified;
- 875 2. meet the Cold Climate Air Source Heat Pump Specification Version 2.0
876 published by Northeast Energy Efficiency Partnerships effective January 1,
877 2017 or any version thereafter;
- 878 3. have a variable speed compressor;
- 879 4. be part of an Air-Conditioning, Heating, & Refrigeration Institute matched
880 system; and
- 881 5. have a coefficient of performance greater than or equal to 1.9 at 5 degree
882 Fahrenheit and a coefficient of performance greater than or equal to 2.5 at 17
883 degree Fahrenheit.

884 For new construction, the small air source heat pump Renewable Thermal
 885 Generation Unit must supply 100% of the building's total annual heating and
 886 cannot have any supplemental, non-renewable heating sources. In retrofit
 887 construction or existing buildings, all small air source heat pump Renewable
 888 Thermal Generation Units that do not meet the above requirement must be used
 889 as the primary source of heat, supply at least 90% of the total annual heating, be
 890 integrated to a heating distribution system, capable of distributing produced heat
 891 to all conditioned areas of the building, and have a heat-rate capacity at five
 892 degrees Fahrenheit that is at least 50% of the nameplate capacity of the existing
 893 heating source equipment.

894 (f) Eligibility Criteria for Small Ground Source Heat Pumps. All small ground
 895 source heat pumps Renewable Thermal Generation Units, as prescribed in 225
 896 CMR 16.05(4)(a), must meet the following requirements:

897 1. be certified to the International Organization for Standards Standard
 898 13256-1 Water-source heat pumps -- Testing and rating for performance --
 899 Part 1: Water-to-air and brine-to-air heat pumps, 1998 or the International
 900 Organization for Standards Standard 13256-2 Water-source heat pumps --
 901 Testing and rating for performance -- Part 2: Water-to-water and brine-to-
 902 water heat pumps, 1998;

903
 904 2. have American Heating and Refrigeration Institute rated operating
 905 coefficient of performance and operating energy efficiency ratio equal to or
 906 greater than the following:

Small ground source heat pump system type	Cooling energy efficiency ratio	Heating coefficient of performance
Closed loop water to air	17.1	3.6
Open loop water to air	21.1	4.1
Closed loop water to water	16.1	3.1
Open loop water to water	20.1	3.5

909
 910 3. be installed by licensed contractors and/or plumbers in accordance with
 911 the National Electric Code and manufacturer's specifications and must
 912 conform to all applicable municipal, state, and federal codes, standards,
 913 regulations, and certifications, as well as program requirements;

914 4. have blowers that are multi-speed or variable-speed, high-efficiency
 915 motors. Motors qualify as energy-efficient if they meet or exceed the
 916 efficiency levels listed in the National Electric Manufacturers Association's
 917 MG1-1993 publication;

918 5. use compressors that are two-stage, multi-speed, or variable-speed drives,
 919 unless they are water-to-water units. Single-stage water-to-water systems are

- 920 eligible, provided they include accumulator tanks with the greater of ten
921 gallons of capacity per heating ton or industry/m manufacturer recommended
922 best practice;
- 923 6. for vertically bored closed-loop systems, Generation Units must have a
924 minimum depth of 150 feet per 12,000 Btu per hour of heating load served
925 by the system;
- 926 7. all closed-loop bore grouting must have a grout conductivity equal to or
927 greater than anticipated earth conductivity of the drill site up to 1 Btu per
928 hour-foot-degree Fahrenheit;
- 929 8. have at least 15 feet of separation between closed-loop bore holes;
- 930 9. must comply with MassDEP Bureau of Resource Protection Drinking
931 Water Program, Guidelines For Ground Source Heat Pump Wells, and
932 Underground Injection Control Program, December 2013;
- 933 10. all open-loop system wells shall be installed in conformance with
934 MassDEP's Private Well Guidelines or MassDEP's Guidelines and Policies
935 for Public Water Systems, whichever is applicable;
- 936 11. all system wells shall be installed in conformance with 313 CMR 3.00:
937 *Registration of Well Drillers and Filing of Well Completion Reports*;
- 938 12. standing column wells must include bleed circuits and drywells to
939 maximize thermal efficiency based on available water production; and
- 940 13. all systems must supply 100% of a building's total annual heating; non-
941 renewable supplemental heat sources are prohibited.
- 942 14. all closed loop systems must be installed and tested in accordance with
943 subsections 4 and 5 in section 1 of the "Closed-Loop/Geothermal Heat Pump
944 Systems, Design and Installation Standards", published by the International
945 Ground Source Heat Pump Association, dated 2017. In lieu of the pressure
946 testing described in subsection five in section one of the above-referenced
947 standard, closed loop systems shall be hydrostatically pressure tested in
948 accordance with ASTM Standard F2164 using the test pressure specified by
949 the design engineer for the system.

950 (g) Restrictions and Standards on the Use of Eligible Biomass Woody Fuel. An
951 APS Renewable Thermal Generation Unit using Eligible Biomass Woody Fuel is
952 subject to the following restrictions:

953 1. Feedstock Requirements. An APS Renewable Thermal Generation Unit
954 using Eligible Biomass Woody Fuel must use a minimum percentage of
955 Eligible Biomass Woody Fuel derived from Forest Derived Residues, Forest-
956 Derived Thinnings, Forest Salvage, or residues derived from wood products
957 manufacturing consisting of Clean Wood, as defined in the definition of
958 eligible woody biomass fuel in 225 CMR 16.02. The Department shall set the
959 minimum feedstock requirement in the Department's *Guideline on Biomass,*
960 *Biogas, and Biofuel for Eligible Renewable Thermal Generation Units.*

961 2. Fuel Quality and Unit Control Device Requirements. Generation Units
962 shall meet at least one of the following fuel quality specifications:

- 963
- 964 i. A boiler or furnace of less than 3,000,000 Btu per hour rated heat
965 input that utilizes an emission control device (e.g., electrostatic

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precipitator), subject to the approval of the Department in consultation with MassDEP, does not have to meet the fuel quality specifications in 225 CMR 16.05(4)(g)1.ii. The emissions control device shall be designed and operated to ensure that the boiler or furnace does not exceed the applicable particulate matter emission limit in 225 CMR 16.05(4)(g)5.

ii. A boiler or furnace of less than 3,000,000 Btu per hour rated heat input that does not utilize an emission control device (e.g., electrostatic precipitator) must meet the following fuel quality specifications:

Fuel quality specifications	Pellets	Chips
Calorific value	Greater than 8,000 Btu per pound	Greater than or equal to 5,500 Btu per pound
Moisture	Less than or equal to 8 percent	Less than or equal to 35 percent
Ash content by weight	Less than or equal to 1 percent	Less than or equal to 1.5 percent
Chip size (percent retained by a half inch mesh screen)	Not applicable	75 percent or adhere to manufacturer's protocol
Chlorides	Less than or equal to 300 parts per million	Not applicable

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iii. A boiler or furnace of equal to or greater than 3,000,000 Btu per hour rated heat input must receive a MassDEP plan approval pursuant to 310 CMR 7.02(5), which shall dictate fuel quality specifications.

3. Sustainable Forestry Management. Forest Derived Residues and Thinnings shall only be sourced from forests meeting Sustainable Forestry Management practices, as independently verified through the attestation of a licensed forester, certified forester or independent certification.

4. System Performance. APS Renewable Thermal Generation Units shall meet fuel conversion efficiency and performance standards achievable by best-in-class commercially-feasible technologies, identified in the following table:

Performance requirement	Pellets	Chips
Thermal efficiency at nominal output	Greater than or equal to 85 percent Higher Heating Value	Greater than or equal to 75 percent Higher Heating Value

		or Greater than or equal to 80 percent Lower Heating Value if EN303-5 is used to verify particulate emissions
Start up	Adhere to manufacturer's ignition protocol	
Modulation/shut off	The system must automatically modulate to lower output and/or turn itself off when the heating load decreases or is satisfied	
Pressurized portion of the system	Compliant with 522 CMR 4.00	
Thermal storage	Required, unless an exception is issued by the Department	
Fuel storage	The system must have covered bulk storage	
Feedstock conveyance	The system must be automatically fed from feedstock storage to the furnace or boiler	

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5. Thermal Storage. Generation Units shall minimize any significant deterioration of efficiency or air emissions performance due to cycling by applying correctly sized and insulated thermal storage. Thermal storage shall meet the following size thresholds:

Lead boiler system size (heat output)	Thermal storage required
Less than 80,000 Btu per hour	80 gallons
Between 80,000 Btu per hour and 119,000 Btu per hour	1 gallon per 1,000 Btu per hour
Between 119,000 Btu per hour and 1,000,000 Btu per hour	119 gallons
Greater than 1,000,000 Btu per hour	2 gallons per 1,000 Btu per hour

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An Owner or Operator of a Generation Unit may apply for an exception from the requirements in 225 CMR 16.06(4)(g)4 if it can demonstrate to the Department that an inclusion of thermal storage would deteriorate the efficiency or air emissions performance of the Generation Unit, or the system can maintain efficiency and air emissions performance at low capacity without thermal storage.

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6. Emission Performance Standards. APS Renewable Thermal Generation Units shall meet air emission performance standards that are protective of public health, including standards for particulate matter sized 2.5 microns or less and carbon monoxide, as identified in the following table:

A boiler or furnace of less than 3,000,000 Btu per hour rated heat input must meet the applicable emission limits below:		
Pollutant	Pellets / liquid biofuels / biogas	Chips
Particulate Matter	No more than 0.08 lb PM _{2.5} per 1,000,000 Btu _{input} or No more than 0.03 lb PM _{2.5} per 1,000,000 Btu _{input} at sensitive populations	No more than 0.10 lb PM _{2.5} per 1,000,000 Btu _{input} or No more than 0.05 lbs total PM per 1,000,000 Btu _{input} if EN303-5 is used to verify emissions or No more than 0.03 lb PM _{2.5} per 1,000,000 Btu _{input} at sensitive populations
Carbon monoxide	No more than 270 parts per million at 7 percent oxygen	No more than 270 parts per million at 7 percent oxygen
A boiler or furnace of greater than or equal to 3,000,000 Btu per hour rated heat input:		
Particulate matter, carbon monoxide, and other relevant criteria pollutants	MassDEP plan approval required, pursuant to 310 CMR 7.02(5).	

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For the purpose of this provision, sensitive populations include schools, hospitals, nursing homes, or additional facilities determined by the Department.

7. Verification of Eligible Biomass Woody Fuel. In order to verify the use of Eligible Biomass Woody Fuel, an APS Renewable Thermal Generation Unit shall report the following to the Department on a quarterly basis:

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1. Supplier of the fuel;
2. Amount of fuel delivered;
3. Date of delivery; and
4. Fuel quality specifications prescribed in 225 CMR 16.05(4)(g)1., including a certification that any emission control device was operated and maintained in accordance with the manufacturer's specifications in order to comply with the applicable particulate matter emission limit in 225 CMR 16.05(4)(g)5.

1022 The Department will review the Department's *APS Guideline on Biomass,*
1023 *Liquid Biofuels and Biogas* every two years in consultation with the
1024 MassDEP and DCR and update the Guideline where appropriate. The
1025 Department will assess the impact of biomass heating on the region's forests
1026 in 2018 and 2020, as well as every five years thereafter in coordination with
1027 the Forest Impact Assessment under the Renewable Portfolio Standard Class
1028 I, as prescribed in 225 CMR 14.05(8)(b)2., and make changes as necessary.
1029 The Department will report annually on the aggregate woody biomass fuel
1030 composition used in qualified APS Renewable Thermal Generation Units.
1031

1032 (h) Aggregation of Units using Eligible Liquid Biofuels. An APS Renewable
1033 Thermal Generation Unit using Eligible Liquid Biofuels or Eligible Liquid
1034 Biofuels blended with heating oil shall seek qualification as an APS Renewable
1035 Thermal Generation Unit only as part of an Aggregation, as provided for in 225
1036 CMR 16.05(3).
1037

1038 (i) Greenhouse Gas Emission Reduction. APS Renewable Thermal Generation
1039 Units utilizing biomass, biogas, or biofuel shall reduce life-cycle greenhouse gas
1040 emissions by at least 50% compared to a high-efficiency unit utilizing the fuel
1041 that is being displaced or for a new load, a high-efficiency natural gas unit, if
1042 natural gas is available at reasonable cost to the site, or otherwise, the fuel that is
1043 most likely to be utilized. The procedures for calculating whether a Generation
1044 Unit meets the 50% reduction can be found in the Department's *Guideline on*
1045 *Biomass, Biogas, and Biofuels for Eligible Renewable Thermal Generation Units*
1046 and in the Department's *Guideline on Reduction of Greenhouse Gases for*
1047 *Eligible Renewable Thermal Generation Units Using Eligible Woody Biomass.*
1048 Generation Units that report a percent under-compliance in 225 CMR
1049 16.05(4)(i), shall be placed in a probationary status and the Department shall
1050 notify the Owner that its Statement of Qualification shall be revoked at the end
1051 of five Compliance Years following the Compliance Year for which the percent
1052 under-compliance was reported. The Generation Unit's probationary status shall
1053 be rescinded and the Generation Unit's Statement of Qualification shall no longer
1054 be subject to revocation if either:
1055

1056 1. for any three Compliance Years of the probationary period the
1057 Generation Unit demonstrates that it is complying with the lifecycle
1058 greenhouse gas emissions requirements; or
1059

1060 2. the Generation Unit's accumulated percent under-compliance is offset by
1061 any net over-compliance with the lifecycle greenhouse gas emissions
1062 requirement during the probationary period.
1063

1064 (h) Cap on the Available Number of Attributes for Generation Units Using
1065 Eligible Liquid Biofuel.
1066

1067 1. In each Compliance Year the total number of Attributes minted to

1068 Generation Units using Eligible Liquid Biofuel may not exceed 20%
 1069 of the total projected annual compliance obligation for the
 1070 Compliance Year, in which they are generated, with no more than
 1071 10% of the Attributes generated prior to July 1st. If 100% of the
 1072 Attributes available prior to July 1st are not allocated, the remaining
 1073 number of available Attributes shall be rolled over and allocated
 1074 during either of the remaining quarters in that calendar year. If the
 1075 number of Attributes reported by Generation Units exceeds the
 1076 available Attributes, the number of available Attributes shall be
 1077 allocated on a pro-rata basis.

1078
 1079 2. The Department shall estimate the compliance obligation by
 1080 multiplying the Minimum Standard percentage by the total MWh of
 1081 electrical energy sales by Retail Electricity Suppliers to End-use
 1082 Customers in the Compliance Year two years prior. The Department
 1083 shall calculate the annual and per quarter number of Attributes
 1084 available for Generation Units using Eligible Liquid Biofuel in a
 1085 given Compliance Year no later than August 31st of the preceding
 1086 Compliance Year. The Department shall publish this information on
 1087 its website.

1088
 1089 (k) Eligible Biomass Woody Fuel Suppliers List. The Department shall
 1090 establish and maintain a list of suppliers of Eligible Biomass Woody Fuel on its
 1091 website. Any fuel supplier wishing to be included on the Department’s list must
 1092 complete the application provided on the Department’s website. Suppliers will
 1093 be classified into one of three classes based on the percentage of residues
 1094 contained in the fuel distributed to Generation Units and the fuel being displaced
 1095 by the Generation Unit, as follows:

Class	Fuel being displaced	Minimum combined percentage of Forest Derived Residues, Non-Forest Derived Residues, and Forest Salvage
Class I	Natural gas, electric resistance, propane, fuel oil #6, fuel oil #2	55%
Class II	Electric resistance, propane, fuel oil #6, fuel oil #2	50%
Class III	Fuel oil #6, fuel oil #2	35%

1097
 1098 Upon qualification Generation Units will be notified by the Department which
 1099 fuel class they must purchase when sourcing fuel from a supplier on the
 1100 Department’s Biomass Suppliers List. Any Generation Unit that desires to
 1101 purchase fuel from a supplier not on the Department’s Biomass Suppliers List
 1102 may request approval from the Department and shall be required to provide

1103 additional information. Generation Units displacing an existing biomass system
1104 shall have their fuel class determined by the Department.

1105
1106 (l) Eligible Liquid Biofuel Suppliers List. The Department shall establish and
1107 maintain a list of suppliers of Eligible Liquid Biofuel on its website. A fuel
1108 supplier must complete and submit an application to the Department to be
1109 included on the Department's Eligible Liquid Biofuel suppliers list. Fuel
1110 suppliers must be registered in the Environmental Protection Agency's
1111 Renewable Fuel Standard (RFS2), 40 C.F.R. §§ 80.1400-80.14.74, and must
1112 verify that they produce biodiesel from organic waste feedstocks. Fuel suppliers
1113 may be required to provide documentation to the Department after being added
1114 to the list in order to demonstrate continued compliance.

1115 16.06: Statement of Qualification Process for APS Alternative Generation Units

1116 (1) Statement of Qualification Application. A Statement of Qualification
1117 Application shall be submitted to the Department by the Owner or Operator of the
1118 Generation Unit or Aggregation. The applicant must use the most current forms
1119 and associated instructions provided by the Department, and must include all
1120 information, documentation, and assurances required by such forms and
1121 instructions. Applications for APS Renewable Thermal Generation Units shall be
1122 submitted through the online registration platform of the MassCEC.

1123
1124 (2) Review Procedures.

1125
1126 (a) The Department will notify the applicant when the Statement of
1127 Qualification Application is administratively complete or if additional
1128 information is required pursuant to 225 CMR 16.06(1).

1129
1130 (b) The Department may, in its sole discretion, provide an opportunity for
1131 public comment on any Statement of Qualification Application.

1132
1133 (3) Issuance or Non-issuance of a Statement of Qualification.

1134
1135 (a) If the Department finds that all or a portion of the electrical energy output of
1136 a Generation Unit or of an Aggregation meets the requirements for eligibility as
1137 APS Alternative Generation pursuant to 225 CMR 16.05, the Department will
1138 provide the Owner or Operator of such Unit or Aggregation with an SQ.

1139
1140 (b) The SQ shall include any applicable restrictions and conditions that the
1141 Department deems necessary to ensure compliance by a particular Generation
1142 Unit or Aggregation with the provisions of 225 CMR 16.00.

1143
1144 (c) If the Generation Unit or Aggregation does not meet the requirements for
1145 eligibility as an APS Alternative Generation Unit, the Department shall provide

1146 written notice to the Owner or Operator, including the Department's reasons for
1147 such finding.
1148

1149 (4) APS Effective Date. The APS Effective Date shall be the earliest date on which
1150 electrical energy output of an APS Alternative Generation Unit can result in the
1151 creation of APS GIS Certificates, except that the APS Effective Date shall not be
1152 earlier than the date on which the Department determines that the Unit has
1153 commenced compliance with the applicable emission standards in its SQ. But in no
1154 instance shall the APS Effective Date be earlier than January 1, 2009.

1155 (5) Notification Requirements for Change in Eligibility Status. The Owner or
1156 Operator of an APS Alternative Generation Unit shall notify the Department of any
1157 changes in the technology, operation, emissions, fuel sources, energy resources, or
1158 other characteristics of the Generation Unit that would affect the eligibility of the
1159 Unit as an APS Alternative Generation Unit. The Owner or Operator shall submit
1160 the notification to the Department no later than five days following the end of the
1161 month during which such changes were implemented. The notice shall state the date
1162 the changes were made to the APS Alternative Generation Unit and describe the
1163 changes in sufficient detail to enable the Department to determine if a change in
1164 eligibility is warranted.
1165

1166 (6) Notification Requirements for Change in Ownership, Generation Capacity, or
1167 Contact Information. The Owner or Operator of an APS Alternative Generation
1168 Unit shall notify the Department of any changes in the ownership, operating entity,
1169 generation capacity, NEPOOL GIS account, independent verification system for the
1170 Unit's or Aggregation's electrical energy output, or contact information for the
1171 Generation Unit or Aggregation. The Owner or Operator shall submit the
1172 notification to the Department no later than five days following the end of the month
1173 during which such changes were implemented.

1174 (7) Time Limit for Project Implementation. Any SQ issued on or after June
1175 12, 2009 shall expire 48 months after the issuance date of the SQ (the
1176 Expiration Date) unless the Commercial Operation Date of the Generation
1177 Unit or Aggregation is on or before the Expiration Date. The Department
1178 may, at its discretion, grant an extension of the Expiration Date of the SQ
1179 upon petition by the Owner or Operator of the Generation Unit or
1180 Aggregation. If the Owner or Operator of such Unit or Aggregation desires
1181 an extension, such Owner or Operator must submit a new SQ Application,
1182 and the decision of the Department on such new application may be made in
1183 accordance with the regulations and criteria that are applicable on the date
1184 that the Department receives that application.

1185 (8) Suspension or Revocation of Statement of Qualification. The Department may
1186 suspend or revoke an SQ if the Owner or Operator of an APS Alternative Generation
1187 Unit fails to comply with 225 CMR 16.00.
1188

1189 16.07: Alternative Energy Portfolio Standard
1190

1191 (1) APS Minimum Standard. The total annual sales of each Retail Electricity
1192 Product sold to Massachusetts End-use Customers by a Retail Electricity Supplier,
1193 under contracts executed or extended on or after January 1, 2009, shall include a
1194 minimum percentage of electrical energy sales with APS Alternative Generation
1195 Attributes, as specified in the table in 225 CMR 16.07.
1196

1197 **MASSACHUSETTS ALTERNATIVE ENERGY PORTFOLIO STANDARD**

1198 **MINIMUM PERCENTAGES OF ANNUAL ELECTRICAL ENERGY SALES**
1199 **WITH APS ALTERNATIVE GENERATION ATTRIBUTES**
1200

Compliance Year	Cumulative Minimum Percentage
2009	1.00
2010	1.50
2011	2.00
2012	2.50
2013	3.00
2014	3.50
2015	3.75
2016	4.00
2017	4.25
2018	4.50
2019	4.75
2020	5.00

1203
1204 (2) Post-2020 Minimum Standard. After 2020, the Minimum Standard shall
1205 increase by 0.25% per Compliance Year.
1206

1207 (3) 2020 APS Minimum Standard Review. Not later than December 31, 2020, the
1208 Department shall complete a review 225 CMR 16.00, which shall include a public
1209 comment period. The review will include, but not be limited to, an examination of
1210 the costs and benefits of the program to ratepayers, an examination of the
1211 effectiveness of the program in meeting the energy and environmental goals of the
1212 Commonwealth, and an evaluation of whether the Minimum Standard or its rate of
1213 increase, as established in 225 CMR 16.07(2), should be adjusted. This requirement
1214 shall not preclude the Department from otherwise reviewing or amending 225 CMR
1215 16.00.
1216

1217 16.08: Compliance Procedures for Retail Electricity Suppliers

1218
1219 (1) Standard Compliance. Each Retail Electricity Supplier shall be deemed to be in
1220 compliance with 225 CMR 16.00 if the information provided in the Compliance
1221 Filing submitted pursuant to 225 CMR 16.09 is true and accurate and demonstrates
1222 compliance with 225 CMR 16.07. A Retail Electricity Supplier shall demonstrate to

1223 the satisfaction of the Department that APS Alternative Generation Attributes used
1224 for compliance have not otherwise been, nor will be, sold, retired, claimed, used or
1225 represented as part of electrical energy output or sales, or used to satisfy obligations
1226 in jurisdictions other than Massachusetts.

1227
1228 (2) Banked Compliance. A Retail Electricity Supplier may use APS Alternative
1229 Generation Attributes produced in one Compliance Year for compliance in either or
1230 both of the two subsequent Compliance Years, subject to the limitations in 225
1231 CMR 16.08(2) and provided that the Retail Electricity Supplier is in compliance
1232 with 225 CMR 16.00 for all previous Compliance Years. In addition, the Retail
1233 Electricity Supplier shall demonstrate to the satisfaction of the Department that such
1234 Attributes:

1235
1236 (a) were in excess of the APS Alternative Generation Attributes needed for
1237 compliance in the Compliance Year in which they were generated, and that such
1238 excess Attributes have not previously been used for compliance with 225 CMR
1239 16.00;

1240
1241 (b) do not exceed 30% of the APS Alternative Generation Attributes needed by
1242 the Retail Electricity Supplier for compliance with the APS Minimum Standard
1243 in the year they were generated, subject to 225 CMR 16.09(2)(d);

1244
1245 (c) were produced during the Compliance Year in which they are claimed as
1246 excess by the generation of electrical energy sold to End-use Customers in the
1247 ISO-NE Control Area, by the generation of electrical energy on End-use
1248 Customers' sides of retail meters in the ISO-NE Control Area, or by the
1249 generation of electrical energy from Off-grid Generation Units in Massachusetts;
1250 and

1251
1252 (d) have not otherwise been, nor will be, sold, retired, claimed or represented as
1253 part of electrical energy output or sales, or used to satisfy obligations in
1254 jurisdictions other than Massachusetts.

1255
1256 (3) Alternative Compliance. A Retail Electricity Supplier may discharge its
1257 obligations under 225 CMR 16.07, in whole or in part, for any Compliance Year by
1258 making an Alternative Compliance Payment (ACP) to the Massachusetts Clean
1259 Energy Technology Center, established by M.G.L. c. 23J, § 2. Such funds shall be
1260 held in an account separate from other accounts of the Corporation.

1261
1262 (a) Procedures. A Retail Electricity Supplier shall receive Alternative
1263 Compliance Credits from the Department, subject to the following:

1264
1265 1. The quantity of Credits, specified in MWhs, that can be applied to its
1266 obligations under 225 CMR 16.07(1) shall be determined by calculating the
1267 ratio of the total of ACPs paid for the Compliance Year to the ACP Rate for
1268 that Compliance Year.
1269

1270 2. The ACP Rate for the APS Minimum Standard shall be \$20 per MWh for
1271 Compliance Year 2009. For each subsequent Compliance Year, the
1272 Department shall publish the ACP Rate by January 31st of the Compliance
1273 Year. The ACP Rate shall be equal to the previous year's ACP Rate adjusted
1274 up or down according to the previous year's Consumer Price Index.
1275

1276 3. The Retail Electricity Supplier shall include with its Annual Compliance
1277 Filing copies of any ACP receipt(s) for ACPs made to the Massachusetts
1278 Clean Energy Technology Center during the Compliance Year.
1279

1280 (b) Use of Funds. The Department shall oversee the use of ACP funds by
1281 Massachusetts Clean Energy Technology Center, so as to further the commercial
1282 development of Alternative Generation.
1283

1284
1285 16.09: Annual Compliance Filings for Retail Electricity Suppliers
1286

1287 (1) Date of Annual Compliance Filing. For each Compliance Year, the Retail
1288 Electricity Supplier annually shall file an annual Compliance Filing with the
1289 Department no later than the first day of July, or the first Business Day thereafter, of
1290 the subsequent Compliance Year.
1291

1292 (2) Contents of Annual Compliance Filing. For each Retail Electricity Product, the
1293 Filing shall document compliance with the provisions of 225 CMR 16.07 and 16.08
1294 to the satisfaction of the Department and shall include, but not be limited to, the
1295 following:
1296

1297 (a) Total Electrical Energy Sales to End-use Customers. Documentation of the
1298 total MWhs of electrical energy allocated by the Retail Electricity Supplier to
1299 End-use Customers in the Compliance Year. Such allocation is defined in 225
1300 CMR 16.09(2)(a) as the total quantity of the Supplier's Certificates Obligation
1301 that the Supplier correctly allocated or should have allocated to all of the
1302 Supplier's Massachusetts retail subaccounts in the NEPOOL GIS, in compliance
1303 with all relevant provisions of Part 4 of the NEPOOL GIS Operating Rules.
1304

1305 (b) Electrical Energy Sales to End-use Customers by Product. Documentation
1306 of the total MWhs of each Retail Electricity Product allocated to End-use
1307 Customers in the Compliance Year, verified by an independent third party
1308 satisfactory to the Department, consistent with the Guidelines. Such allocation is
1309 defined in 225 CMR 16.09(2)(b) as the quantity of the Supplier's Certificates
1310 Obligation that the Supplier correctly allocated or should have allocated to each
1311 of the Supplier's Massachusetts retail subaccounts at the NEPOOL GIS, in
1312 compliance with all relevant provisions of Part 4 of the NEPOOL GIS Operating
1313 Rules. The Department shall keep product information confidential to the extent
1314 permitted by law.
1315

1316 (c) Attributes Allocated from the Compliance Year. Documentation of the total
1317 MWhs of each Retail Electricity Product allocated to End-use Customers that
1318 were derived from both APS Alternative Generation during the Compliance
1319 Year, and which may include electrical energy generated on End-use Customers'
1320 sides of retail meters in the ISO-NE Control Area or by Off-grid Generation
1321 Units in Massachusetts in the Compliance Year, as follows:

1322
1323 1. For electrical energy transactions included in the ISO-NE Settlement
1324 Market System, the Compliance Filings shall include documentation from
1325 the NEPOOL GIS administrator of the Retail Electricity Supplier's
1326 ownership of GIS Certificates representing APS Alternative Generation
1327 during the Compliance Year.

1328
1329 2. For electrical energy transactions not included in the ISO-NE Settlement
1330 Market System, but for which the Retail Electricity Supplier has secured GIS
1331 Certificates from the NEPOOL GIS, the Compliance Filings shall include
1332 documentation from the NEPOOL GIS of the Retail Electricity Supplier's
1333 ownership of GIS Certificates representing APS Alternative Generation
1334 during the Compliance Year.

1335
1336 (d) Attributes Allocated from Banked Compliance. Allocation by Retail
1337 Electricity Product of any quantity of Attributes banked from one or both of the
1338 two previous years pursuant to 225 CMR 16.08(2) that are used to demonstrate
1339 compliance in the current Compliance Year;

1340
1341 (e) Alternative Compliance Credits. Allocation by Retail Electricity Product of
1342 any Alternative Compliance Credits claimed pursuant to 225 CMR 16.08(3),
1343 along with a copy of any Alternative Compliance Payment receipt(s);

1344
1345 (f) Attributes Banked for Future Compliance. Calculation of the quantity of
1346 any Attributes from APS Alternative Generation that the Retail Electricity
1347 Supplier anticipates claiming for purposes of Banked Compliance in subsequent
1348 years under the Banked Compliance provisions of 225 CMR 16.08(2); and

1349
1350 (g) Exempt Contracts under Minimum Standard. Identification of any contract
1351 for a specific term of years that was executed before January 1, 2009, and its
1352 terms including but not limited to, the execution and expiration dates of the
1353 contract and the annual volume of electrical energy supplied.

1354
1355
1356 16.10: Reporting Requirements

1357
1358 (1) Certification. Any person required by 225 CMR 16.00 to submit
1359 documentation to the Department shall provide:

1360
1361 (a) the person's name, title and business address;

1362
1363 (b) the person’s authority to certify and submit the documentation to the
1364 Department; and
1365
1366 (c) the following certification: “I hereby certify, under the pains and penalties
1367 of perjury, that I have personally examined and am familiar with the information
1368 submitted herein and based upon my inquiry of those individuals immediately
1369 responsible for obtaining the information, I believe that the information is true,
1370 accurate, and complete. I am aware that there are significant penalties, both civil
1371 and criminal, for submitting false information, including possible fines and
1372 imprisonment.”
1373

1374 (2) Annual Alternative Energy Resource Report. The Department shall produce an
1375 annual report that summarizes information submitted to the Department by Retail
1376 Electric Suppliers in the Annual Compliance Filing submitted to the Department
1377 pursuant to 225 CMR 16.09(2).
1378

1379 (3) Identification of APS Alternative Generation Units. The Department shall
1380 inform the NEPOOL GIS administrator which Generation Units should be
1381 designated as APS Alternative Generation Units pursuant to 225 CMR 16.00.
1382

1383 16.11: Inspection
1384

1385 (1) Document Inspection. The Department may audit the accuracy of all
1386 information submitted pursuant to 225 CMR 16.00. The Department may request
1387 and obtain from any Owner or Operator of an APS Alternative Generation Unit,
1388 supplier of Eligible Biomass Fuel, and any Retail Electricity Supplier information
1389 that the Department determines necessary to monitor compliance with and
1390 enforcement of 225 CMR 16.00.
1391

1392 (2) Audit and Site Inspection. The Department may implement an audit and
1393 inspection program to assess compliance with 225 CMR 16.00. Upon reasonable
1394 notice to a Retail Electricity Supplier, supplier of Eligible Biomass Fuel, or APS
1395 Alternative Generation Unit Owner or Operator, the Department may inspect and
1396 copy any records and/or conduct site visits to an APS Alternative Generation Unit,
1397 supplier of Eligible Biomass Fuel or a Retail Electricity Supplier’s facilities,
1398 including, but not limited to, all files and documents that the Department determines
1399 are related to compliance with 225 CMR 16.00.
1400

1401 16.12: Non-compliance
1402

1403 Any Retail Electricity Supplier or Owner or Operator of a APS Alternative
1404 Generation Unit that fails to comply with the requirements of 225 CMR 16.00 shall
1405 be subject to the following provisions:
1406

1407 (1) Notice of Non-compliance. A failure to comply with the requirements of 225
1408 CMR 16.00 shall be determined by the Department. A written Notice of Non-
1409 compliance shall be prepared and delivered by the Department to any Retail
1410 Electricity Supplier or Owner or Operator of a APS Alternative Generation Unit that
1411 fails to comply with the requirements of 225 CMR 16.00. The Notice of Non-
1412 compliance shall describe the Requirement(s) with which the Retail Electricity
1413 Supplier, Owner, or Operator failed to comply and the time period of such non-
1414 compliance.

1415
1416 (2) Publication of Notice of Non-compliance. A Notice of Non-compliance may
1417 be published on the Department's website and in any other media deemed
1418 appropriate by the Department. Such publication may remain posted until the Retail
1419 Electricity Supplier or Owner or Operator returns to compliance as determined by
1420 the Department.

1421
1422 (3) Planning Requirement. A Retail Electricity Supplier that fails to meet the
1423 requirements of 225 CMR 16.07 during a Compliance Year shall submit a plan for
1424 achieving compliance for the subsequent three years. The plan shall be filed with the
1425 Department no later than the first day of September of the Compliance Year
1426 subsequent to the Compliance Year for which the Retail Electricity Supplier was out
1427 of compliance or such date as the Department may specify.

1428
1429 (4) Suspension or Revocation of License. The Department shall refer its findings
1430 of non-compliance to the Massachusetts Department of Public Utilities. A Retail
1431 Electricity Supplier that fails to comply with 225 CMR 16.00 may be subject to the
1432 Massachusetts Department of Public Utilities Licensure Action under 220 CMR
1433 11.07(4)(c)1.

1434
1435 16.13: Severability

1436
1437 If any provision of 225 CMR 16.00 is declared invalid, such invalidity shall not
1438 affect other provisions or applications that can be given effect without the invalid
1439 provision or application.

1440
1441
1442 REGULATORY AUTHORITY

1443
1444 225 CMR 16.00: M.G.L. c. 25A, §§ 6 and 11F½.