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SENATE BILL NO. 1316

Offered January 9, 2025

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A BILL to amend and reenact §§ 56-576 and 56-585.5 of the Code of Virginia, relating to renewable energy portfolio standard eligible sources; geothermal resources.

Patron—McPike

Referred to Committee on Commerce and Labor

Be it enacted by the General Assembly of Virginia:

1. That §§ 56-576 and 56-585.5 of the Code of Virginia are amended and reenacted as follows:

§ 56-576. Definitions.

As used in this chapter:

"Affiliate" means any person that controls, is controlled by, or is under common control with an electric utility.

"Aggregator" means a person that, as an agent or intermediary, (i) offers to purchase, or purchases, electric energy or (ii) offers to arrange for, or arranges for, the purchase of electric energy, for sale to, or on behalf of, two or more retail customers not controlled by or under common control with such person. The following activities shall not, in and of themselves, make a person an aggregator under this chapter: (i) furnishing legal services to two or more retail customers, suppliers or aggregators; (ii) furnishing educational, informational, or analytical services to two or more retail customers, unless direct or indirect compensation for such services is paid by an aggregator or supplier of electric energy; (iii) furnishing educational, informational, or analytical services to two or more suppliers or aggregators; (iv) providing default service under § 56-585; (v) engaging in activities of a retail electric energy supplier, licensed pursuant to § 56-587, which are authorized by such supplier's license; and (vi) engaging in actions of a retail customer, in common with one or more other such retail customers, to issue a request for proposal or to negotiate a purchase of electric energy for consumption by such retail customers.

"Business park" means a land development containing a minimum of 100 contiguous acres classified as a Tier 4 site under the Virginia Economic Development Partnership's Business Ready Sites Program that is developed and constructed by a locality, an industrial development authority, or a similar political subdivision of the Commonwealth created pursuant to § 15.2-4903 or other act of the General Assembly, in order to promote business development.

"Combined heat and power" means a method of using waste heat from electrical generation to offset traditional processes, space heating, air conditioning, or refrigeration.

"Commission" means the State Corporation Commission.

"Community in which a majority of the population are people of color" means a U.S. Census tract where more than 50 percent of the population comprises individuals who identify as belonging to one or more of the following groups: Black, African American, Asian, Pacific Islander, Native American, other non-white race, mixed race, Hispanic, Latino, or linguistically isolated.

"Cooperative" means a utility formed under or subject to Chapter 9.1 (§ 56-231.15 et seq.).

"Covered entity" means a provider in the Commonwealth of an electric service not subject to competition but does not include default service providers.

"Covered transaction" means an acquisition, merger, or consolidation of, or other transaction involving stock, securities, voting interests or assets by which one or more persons obtains control of a covered entity.

"Curtailement" means inducing retail customers to reduce load during times of peak demand so as to ease the burden on the electrical grid.

"Customer choice" means the opportunity for a retail customer in the Commonwealth to purchase electric energy from any supplier licensed and seeking to sell electric energy to that customer.

"Demand response" means measures aimed at shifting time of use of electricity from peak-use periods to times of lower demand by inducing retail customers to curtail electricity usage during periods of congestion and higher prices in the electrical grid.

"Distribute," "distributing," or "distribution of" electric energy means the transfer of electric energy through a retail distribution system to a retail customer.

"Distributor" means a person owning, controlling, or operating a retail distribution system to provide electric energy directly to retail customers.

"Electric distribution grid transformation project" means a project associated with electric distribution infrastructure, including related data analytics equipment, that is designed to accommodate or facilitate the integration of utility-owned or customer-owned renewable electric generation resources with the utility's

59 electric distribution grid or to otherwise enhance electric distribution grid reliability, electric distribution grid
60 security, customer service, or energy efficiency and conservation, including advanced metering infrastructure;
61 intelligent grid devices for real time system and asset information; automated control systems for electric
62 distribution circuits and substations; communications networks for service meters; intelligent grid devices
63 and other distribution equipment; distribution system hardening projects for circuits, other than the
64 conversion of overhead tap lines to underground service, and substations designed to reduce service outages
65 or service restoration times; physical security measures at key distribution substations; cyber security
66 measures; energy storage systems and microgrids that support circuit-level grid stability, power quality,
67 reliability, or resiliency or provide temporary backup energy supply; electrical facilities and infrastructure
68 necessary to support electric vehicle charging systems; LED street light conversions; and new customer
69 information platforms designed to provide improved customer access, greater service options, and expanded
70 access to energy usage information.

71 "Electric utility" means any person that generates, transmits, or distributes electric energy for use by retail
72 customers in the Commonwealth, including any investor-owned electric utility, cooperative electric utility, or
73 electric utility owned or operated by a municipality.

74 "Electrification" means measures that (i) electrify space heating, water heating, cooling, drying, cooking,
75 industrial processes, and other building and industrial end uses that would otherwise be served by onsite,
76 nonelectric fuels, provided that the electrification measures reduce site energy consumption; (ii) to the
77 maximum extent practical, seek to combine with federally authorized customer rebates for heat pump
78 technology; and (iii) for those measures that provide measurable and verifiable energy savings to low-income
79 customers or elderly customers, to the maximum extent practical, seek to combine with either
80 contemporaneously installed measures or previously installed measures that are or were provided under
81 federally funded weatherization programs or state-provided, locality-provided, or utility-provided energy
82 efficiency programs.

83 "Energy efficiency program" means a program that reduces the total amount of energy that is required for
84 the same process or activity implemented after the expiration of capped rates but does not include
85 electrification of any process or activity primarily fueled by natural gas. Energy efficiency programs include
86 equipment, physical, or program change designed to produce measured and verified reductions in the amount
87 of site energy required to perform the same function and produce the same or a similar outcome. Energy
88 efficiency programs may include (i) electrification; (ii) programs that result in improvements in lighting
89 design, heating, ventilation, and air conditioning systems, appliances, building envelopes, and industrial and
90 commercial processes; (iii) measures, such as the installation of advanced meters, implemented or installed
91 by utilities, that reduce fuel use or losses of electricity and otherwise improve internal operating efficiency in
92 generation, transmission, and distribution systems; and (iv) customer engagement programs that result in
93 measurable and verifiable energy savings that lead to efficient use patterns and practices. Energy efficiency
94 programs include demand response, combined heat and power and waste heat recovery, curtailment, or other
95 programs that are designed to reduce site energy consumption so long as they reduce the total amount of site
96 energy that is required for the same process or activity. Utilities shall be authorized to install and operate such
97 advanced metering technology and equipment on a customer's premises; however, nothing in this chapter
98 establishes a requirement that an energy efficiency program be implemented on a customer's premises and be
99 connected to a customer's wiring on the customer's side of the inter-connection without the customer's
100 expressed consent. Electricity consumption increases that result from Commission-approved electrification
101 measures shall not be considered as a reduction in energy savings under the energy savings requirements set
102 forth in subsection B of § 56-596.2. Utilities may apply verified total site energy reductions that are
103 attributable to Commission-approved electrification measures to the energy savings requirements set forth in
104 subsection B of § 56-596.2, subject to a conversion of British thermal unit-based energy savings to an
105 equivalent kilowatt-hour-based energy savings, which conversion shall be subject to Commission approval.

106 "Generate," "generating," or "generation of" electric energy means the production of electric energy.

107 "Generator" means a person owning, controlling, or operating a facility that produces electric energy for
108 sale.

109 "Geothermal heating and cooling system" means a system that:

110 1. Exchanges thermal energy from groundwater or a shallow ground source to generate thermal energy
111 through an electric geothermal heat pump or a system of electric geothermal heat pumps interconnected with
112 any geothermal extraction facility that is (i) a closed loop or a series of closed loop systems in which fluid is
113 permanently confined within a pipe or tubing and does not come in contact with the outside environment or
114 (ii) an open loop system in which ground or surface water is circulated in an environmentally safe manner
115 directly into the facility and returned to the same aquifer or surface water source;

116 2. Meets or exceeds the current federal Energy Star product specification standards;

117 3. Replaces or displaces less efficient space or water heating systems, regardless of fuel type;

118 4. Replaces or displaces less efficient space cooling systems that do not meet federal Energy Star product
119 specification standards; and

120 5. Does not feed electricity back to the grid.

121 *"Geothermal resource" has the same meaning as provided in § 45.2-2000.*

122 "Historically economically disadvantaged community" means (i) a community in which a majority of the
123 population are people of color or (ii) a low-income geographic area.

124 "Incremental annual savings" means the total combined kilowatt-hour savings achieved by electric utility
125 energy efficiency and demand response programs and measures in the program year in which they are
126 installed.

127 "Incumbent electric utility" means each electric utility in the Commonwealth that, prior to July 1, 1999,
128 supplied electric energy to retail customers located in an exclusive service territory established by the
129 Commission.

130 "Independent system operator" means a person that may receive or has received, by transfer pursuant to
131 this chapter, any ownership or control of, or any responsibility to operate, all or part of the transmission
132 systems in the Commonwealth.

133 "In the public interest," for purposes of assessing energy efficiency programs prior to the 2029 program
134 year, describes an energy efficiency program if the Commission determines that the net present value of the
135 benefits exceeds the net present value of the costs as determined by not less than any three of the following
136 four tests: (i) the Total Resource Cost Test; (ii) the Utility Cost Test (also referred to as the Program
137 Administrator Test); (iii) the Participant Test; and (iv) the Ratepayer Impact Measure Test. Such
138 determination shall include an analysis of all four tests, and a program or portfolio of programs shall be
139 approved if the net present value of the benefits exceeds the net present value of the costs as determined by
140 not less than any three of the four tests. For programs proposed for the 2029 program year and all subsequent
141 years, the Commission shall establish targets pursuant to subdivision B 4 of § 56-596.2, and a program shall
142 be approved if the Commission determines it is cost-effective pursuant to applicable Commission regulations
143 and that the net present value of the benefits exceeds the net present value of the costs as determined by the
144 Total Resource Cost Test. If the Commission determines that an energy efficiency program or portfolio of
145 programs is not in the public interest, its final order shall include all work product and analysis conducted by
146 the Commission's staff in relation to that program, including testimony relied upon by the Commission's staff,
147 that has bearing upon the Commission's decision. If the Commission reduces the proposed budget for a
148 program or portfolio of programs, its final order shall include an analysis of the impact such budget reduction
149 has upon the cost-effectiveness of such program or portfolio of programs. An order by the Commission (a)
150 finding that a program or portfolio of programs is not in the public interest or (b) reducing the proposed
151 budget for any program or portfolio of programs shall adhere to existing protocols for extraordinarily
152 sensitive information. In addition, an energy efficiency program may be deemed to be "in the public interest"
153 if the program (1) provides measurable and verifiable energy savings to low-income customers or elderly
154 customers or (2) is a pilot program of limited scope, cost, and duration, that is intended to determine whether
155 a new or substantially revised program or technology would be cost-effective.

156 "Low-income geographic area" means any locality, or community within a locality, that has a median
157 household income that is not greater than 80 percent of the local median household income, or any area in the
158 Commonwealth designated as a qualified opportunity zone by the U.S. Secretary of the Treasury via his
159 delegation of authority to the Internal Revenue Service.

160 "Low-income utility customer" means any person or household whose income is no more than 80 percent
161 of the median income of the locality in which the customer resides. The median income of the locality is
162 determined by the U.S. Department of Housing and Urban Development.

163 "Measured and verified" means a process determined pursuant to methods accepted for use by utilities and
164 industries to measure, verify, and validate energy savings and peak demand savings. This may include the
165 protocol established by the United States Department of Energy, Office of Federal Energy Management
166 Programs, Measurement and Verification Guidance for Federal Energy Projects, measurement and
167 verification standards developed by the American Society of Heating, Refrigeration and Air Conditioning
168 Engineers (ASHRAE), or engineering-based estimates of energy and demand savings associated with specific
169 energy efficiency measures, as determined by the Commission.

170 "Municipality" means a city, county, town, authority, or other political subdivision of the Commonwealth.

171 "New underground facilities" means facilities to provide underground distribution service. "New
172 underground facilities" includes underground cables with voltages of 69 kilovolts or less, pad-mounted
173 devices, connections at customer meters, and transition terminations from existing overhead distribution
174 sources.

175 "Peak-shaving" means measures aimed solely at shifting time of use of electricity from peak-use periods
176 to times of lower demand by inducing retail customers to curtail electricity usage during periods of
177 congestion and higher prices in the electrical grid.

178 "Percentage of Income Payment Program (PIPP) eligible utility customer" means any PIPP or household
179 whose income does not exceed 150 percent of the federal poverty level.

180 "Person" means any individual, corporation, partnership, association, company, business, trust, joint
181 venture, or other private legal entity, and the Commonwealth or any municipality.

182 "Previously developed project site" means any property, including related buffer areas, if any, that has

183 been previously disturbed or developed for non-single-family residential, non-agricultural, or non-
184 silvicultural use, regardless of whether such property currently is being used for any purpose.

185 "Previously developed project site" includes a brownfield as defined in § 10.1-1230 or any parcel that has
186 been previously used (i) for a retail, commercial, or industrial purpose; (ii) as a parking lot; (iii) as the site of
187 a parking lot canopy or structure; (iv) for mining, which is any lands affected by coal mining that took place
188 before August 3, 1977, or any lands upon which extraction activities have been permitted by the Department
189 of Energy under Title 45.2; (v) for quarrying; or (vi) as a landfill.

190 "Qualified waste heat resource" means (i) exhaust heat or flared gas from an industrial process that does
191 not have, as its primary purpose, the production of electricity and (ii) a pressure drop in any gas for an
192 industrial or commercial process.

193 "Renewable energy" means energy derived from sunlight, wind, falling water, biomass, sustainable or
194 otherwise, (the definitions of which shall be liberally construed), energy from waste, landfill gas, municipal
195 solid waste, wave motion, tides, geothermal heating and cooling systems, and geothermal ~~power~~ resources
196 and does not include energy derived from coal, oil, natural gas, or nuclear power. "Renewable energy" also
197 includes the proportion of the thermal or electric energy from a facility that results from the co-firing of
198 biomass. "Renewable energy" does not include waste heat from fossil-fired facilities or electricity generated
199 from pumped storage but includes run-of-river generation from a combined pumped-storage and run-of-river
200 facility.

201 "Renewable thermal energy" means the thermal energy output from (i) a renewable-fueled combined heat
202 and power generation facility that is (a) constructed, or renovated and improved, after January 1, 2012, (b)
203 located in the Commonwealth, and (c) utilized in industrial processes other than the combined heat and power
204 generation facility or (ii) a solar energy system, certified to the OG-100 standard of the Solar Ratings and
205 Certification Corporation or an equivalent certification body, that (a) is constructed, or renovated and
206 improved, after January 1, 2013, (b) is located in the Commonwealth, and (c) heats water or air for
207 residential, commercial, institutional, or industrial purposes.

208 "Renewable thermal energy equivalent" means the electrical equivalent in megawatt hours of renewable
209 thermal energy calculated by dividing (i) the heat content, measured in British thermal units (BTUs), of the
210 renewable thermal energy at the point of transfer to a residential, commercial, institutional, or industrial
211 process by (ii) the standard conversion factor of 3.413 million BTUs per megawatt hour.

212 "Renovated and improved facility" means a facility the components of which have been upgraded to
213 enhance its operating efficiency.

214 "Retail customer" means any person that purchases retail electric energy for its own consumption at one
215 or more metering points or nonmetered points of delivery located in the Commonwealth.

216 "Retail electric energy" means electric energy sold for ultimate consumption to a retail customer.

217 "Revenue reductions related to energy efficiency programs" means reductions in the collection of total
218 non-fuel revenues, previously authorized by the Commission to be recovered from customers by a utility, that
219 occur due to measured and verified decreased consumption of electricity caused by energy efficiency
220 programs approved by the Commission and implemented by the utility, less the amount by which such non-
221 fuel reductions in total revenues have been mitigated through other program-related factors, including
222 reductions in variable operating expenses.

223 "Rooftop solar installation" means a distributed electric generation facility, storage facility, or generation
224 and storage facility utilizing energy derived from sunlight, with a rated capacity of not less than 50 kilowatts,
225 that is installed on the roof structure of an incumbent electric utility's commercial or industrial class customer,
226 including host sites on commercial buildings, multifamily residential buildings, school or university
227 buildings, and buildings of a church or religious body.

228 "Solar energy system" means a system of components that produces heat or electricity, or both, from
229 sunlight.

230 "Supplier" means any generator, distributor, aggregator, broker, marketer, or other person who offers to
231 sell or sells electric energy to retail customers and is licensed by the Commission to do so, but it does not
232 mean a generator that produces electric energy exclusively for its own consumption or the consumption of an
233 affiliate.

234 "Supply" or "supplying" electric energy means the sale of or the offer to sell electric energy to a retail
235 customer.

236 "Total annual energy savings" means (i) the total combined kilowatt-hour savings achieved by electric
237 utility energy efficiency and demand response programs and measures installed in that program year, as well
238 as savings still being achieved by measures and programs implemented in prior years, or (ii) savings
239 attributable to newly installed combined heat and power facilities, including waste heat-to-power facilities,
240 and any associated reduction in transmission line losses, provided that biomass is not a fuel and the total
241 efficiency, including the use of thermal energy, for eligible combined heat and power facilities must meet or
242 exceed 65 percent and have a nameplate capacity rating of less than 25 megawatts.

243 "Transmission of," "transmit," or "transmitting" electric energy means the transfer of electric energy

244 through the Commonwealth's interconnected transmission grid from a generator to either a distributor or a
245 retail customer.

246 "Transmission system" means those facilities and equipment that are required to provide for the
247 transmission of electric energy.

248 "Waste heat to power" means a system that generates electricity through the recovery of a qualified waste
249 heat resource.

250 **§ 56-585.5. Generation of electricity from renewable and zero-carbon sources.**

251 A. As used in this section:

252 "Accelerated renewable energy buyer" means a commercial or industrial customer of a Phase I or Phase II
253 Utility, irrespective of generation supplier, with an aggregate load over 25 megawatts in the prior calendar
254 year, that enters into arrangements pursuant to subsection G, as certified by the Commission.

255 "Aggregate load" means the combined electrical load associated with selected accounts of an accelerated
256 renewable energy buyer with the same legal entity name as, or in the names of affiliated entities that control,
257 are controlled by, or are under common control of, such legal entity or are the names of affiliated entities
258 under a common parent.

259 "Control" has the same meaning as provided in § 56-585.1:11.

260 "Falling water" means hydroelectric resources, including run-of-river generation from a combined
261 pumped-storage and run-of-river facility. "Falling water" does not include electricity generated from pumped-
262 storage facilities.

263 "Low-income qualifying projects" means a project that provides a minimum of 50 percent of the
264 respective electric output to low-income utility customers as that term is defined in § 56-576.

265 "Phase I Utility" has the same meaning as provided in subdivision A 1 of § 56-585.1.

266 "Phase II Utility" has the same meaning as provided in subdivision A 1 of § 56-585.1.

267 "Previously developed project site" means any property, including related buffer areas, if any, that has
268 been previously disturbed or developed for non-single-family residential, nonagricultural, or nonsilvicultural
269 use, regardless of whether such property currently is being used for any purpose. "Previously developed
270 project site" includes a brownfield as defined in § 10.1-1230 or any parcel that has been previously used (i)
271 for a retail, commercial, or industrial purpose; (ii) as a parking lot; (iii) as the site of a parking lot canopy or
272 structure; (iv) for mining, which is any lands affected by coal mining that took place before August 3, 1977,
273 or any lands upon which extraction activities have been permitted by the Department of Energy under Title
274 45.2; (v) for quarrying; or (vi) as a landfill.

275 "Total electric energy" means total electric energy sold to retail customers in the Commonwealth service
276 territory of a Phase I or Phase II Utility, other than accelerated renewable energy buyers, by the incumbent
277 electric utility or other retail supplier of electric energy in the previous calendar year, excluding an amount
278 equivalent to the annual percentages of the electric energy that was supplied to such customer from nuclear
279 generating plants located within the Commonwealth in the previous calendar year, provided such nuclear
280 units were operating by July 1, 2020, or from any zero-carbon electric generating facilities not otherwise RPS
281 eligible sources and placed into service in the Commonwealth after July 1, 2030.

282 "Zero-carbon electricity" means electricity generated by any generating unit that does not emit carbon
283 dioxide as a by-product of combusting fuel to generate electricity.

284 B. 1. By December 31, 2024, except for any coal-fired electric generating units (i) jointly owned with a
285 cooperative utility or (ii) owned and operated by a Phase II Utility located in the coalfield region of the
286 Commonwealth that co-fires with biomass, any Phase I and Phase II Utility shall retire all generating units
287 principally fueled by oil with a rated capacity in excess of 500 megawatts and all coal-fired electric
288 generating units operating in the Commonwealth.

289 2. By December 31, 2045, except for biomass-fired electric generating units that do not co-fire with coal,
290 each Phase I and II Utility shall retire all other electric generating units located in the Commonwealth that
291 emit carbon as a by-product of combusting fuel to generate electricity.

292 3. A Phase I or Phase II Utility may petition the Commission for relief from the requirements of this
293 subsection on the basis that the requirement would threaten the reliability or security of electric service to
294 customers. The Commission shall consider in-state and regional transmission entity resources and shall
295 evaluate the reliability of each proposed retirement on a case-by-case basis in ruling upon any such petition.

296 C. Each Phase I and Phase II Utility shall participate in a renewable energy portfolio standard program
297 (RPS Program) that establishes annual goals for the sale of renewable energy to all retail customers in the
298 utility's service territory, other than accelerated renewable energy buyers pursuant to subsection G, regardless
299 of whether such customers purchase electric supply service from the utility or from suppliers other than the
300 utility. To comply with the RPS Program, each Phase I and Phase II Utility shall procure and retire
301 Renewable Energy Certificates (RECs) originating from renewable energy standard eligible sources (RPS
302 eligible sources). For purposes of complying with the RPS Program from 2021 to 2024, a Phase I and Phase
303 II Utility may use RECs from any renewable energy facility, as defined in § 56-576, provided that such
304 facilities are located in the Commonwealth or are physically located within the PJM Interconnection, LLC

305 (PJM) region. However, at no time during this period or thereafter may any Phase I or Phase II Utility use
 306 RECs from (i) renewable thermal energy, (ii) renewable thermal energy equivalent, or (iii) biomass-fired
 307 facilities that are outside the Commonwealth. From compliance year 2025 and all years after, each Phase I
 308 and Phase II Utility may only use RECs from RPS eligible sources for compliance with the RPS Program.

309 In order to qualify as RPS eligible sources, such sources must be (a) electric-generating resources that
 310 generate electric energy derived from solar or wind located in the Commonwealth or off the Commonwealth's
 311 Atlantic shoreline or in federal waters and interconnected directly into the Commonwealth or physically
 312 located within the PJM region; (b) falling water resources located in the Commonwealth or physically located
 313 within the PJM region that were in operation as of January 1, 2020, that are owned by a Phase I or Phase II
 314 Utility or for which a Phase I or Phase II Utility has entered into a contract prior to January 1, 2020, to
 315 purchase the energy, capacity, and renewable attributes of such falling water resources; (c) non-utility-owned
 316 resources from falling water that (1) are less than 65 megawatts, (2) began commercial operation after
 317 December 31, 1979, or (3) added incremental generation representing greater than 50 percent of the original
 318 nameplate capacity after December 31, 1979, provided that such resources are located in the Commonwealth
 319 or are physically located within the PJM region; (d) waste-to-energy or landfill gas-fired generating resources
 320 located in the Commonwealth and in operation as of January 1, 2020, provided that such resources do not use
 321 waste heat from fossil fuel combustion; (e) geothermal heating and cooling systems located in the
 322 Commonwealth; (f) *geothermal resources located in the Commonwealth or physically located within the PJM*
 323 *region*; or (g) biomass-fired facilities in operation in the Commonwealth and in operation as of January 1,
 324 2023, that (1) supply no more than 10 percent of their annual net electrical generation to the electric grid or
 325 no more than 15 percent of their annual total useful energy to any entity other than the manufacturing facility
 326 to which the generating source is interconnected and are fueled by forest-product manufacturing residuals,
 327 including pulping liquor, bark, paper recycling residuals, biowastes, or biomass, as described in subdivisions
 328 A 1, 2, and 4 of § 10.1-1308.1, provided that biomass as described in subdivision A 1 of § 10.1-1308.1 results
 329 from harvesting in accordance with best management practices for the sustainable harvesting of biomass
 330 developed and enforced by the State Forester pursuant to § 10.1-1105, or (2) are owned by a Phase I or Phase
 331 II Utility, have less than 52 megawatts capacity, and are fueled by forest-product manufacturing residuals,
 332 biowastes, or biomass, as described in subdivisions A 1, 2, and 4 of § 10.1-1308.1, provided that biomass as
 333 described in subdivision A 1 of § 10.1-1308.1 results from harvesting in accordance with best management
 334 practices for the sustainable harvesting of biomass developed and enforced by the State Forester pursuant to §
 335 10.1-1105. Regardless of any future maintenance, expansion, or refurbishment activities, the total amount of
 336 RECs that may be sold by any RPS eligible source using biomass in any year shall be no more than the
 337 number of megawatt hours of electricity produced by that facility in 2022; however, in no year may any RPS
 338 eligible source using biomass sell RECs in excess of the actual megawatt-hours of electricity generated by
 339 such facility that year. In order to comply with the RPS Program, each Phase I and Phase II Utility may use
 340 and retire the environmental attributes associated with any existing owned or contracted solar, wind, falling
 341 water, or biomass electric generating resources in operation, or proposed for operation, in the Commonwealth
 342 or solar, wind, or falling water resources physically located within the PJM region, with such resource
 343 qualifying as a Commonwealth-located resource for purposes of this subsection, as of January 1, 2020,
 344 provided that such renewable attributes are verified as RECs consistent with the PJM-EIS Generation
 345 Attribute Tracking System.

346 1. The RPS Program requirements shall be a percentage of the total electric energy sold in the previous
 347 calendar year and shall be implemented in accordance with the following schedule:

Phase I Utilities		Phase II Utilities	
Year	RPS Program Requirement	Year	RPS Program Requirement
348 2021	6%	2021	14%
349 2022	7%	2022	17%
350 2023	8%	2023	20%
351 2024	10%	2024	23%
352 2025	14%	2025	26%
353 2026	17%	2026	29%
354 2027	20%	2027	32%
355 2028	24%	2028	35%
356 2029	27%	2029	38%
357 2030	30%	2030	41%
358 2031	33%	2031	45%
359 2032	36%	2032	49%
360 2033	39%	2033	52%
361 2034	42%	2034	55%
362 2035	45%	2035	59%
363 2036	53%	2036	63%

366	2037	53%	2037	67%
367	2038	57%	2038	71%
368	2039	61%	2039	75%
369	2040	65%	2040	79%
370	2041	68%	2041	83%
371	2042	71%	2042	87%
372	2043	74%	2043	91%
373	2044	77%	2044	95%
374	2045	80%	2045 and	100%
375			thereafter	
376	2046	84%		
377	2047	88%		
378	2048	92%		
379	2049	96%		
380	2050 and	100%		
381	thereafter			

382 2. A Phase II Utility shall meet one percent of the RPS Program requirements in any given compliance
 383 year with solar, wind, or anaerobic digestion resources of one megawatt or less located in the
 384 Commonwealth, with not more than 3,000 kilowatts at any single location or at contiguous locations owned
 385 by the same entity or affiliated entities and, to the extent that low-income qualifying projects are available,
 386 then no less than 25 percent of such one percent shall be composed of low-income qualifying projects.

387 3. Beginning with the 2025 compliance year and thereafter, at least 75 percent of all RECs used by a
 388 Phase II Utility in a compliance period shall come from RPS eligible resources located in the
 389 Commonwealth.

390 4. Any Phase I or Phase II Utility may apply renewable energy sales achieved or RECs acquired in excess
 391 of the sales requirement for that RPS Program to the sales requirements for RPS Program requirements in the
 392 year in which it was generated and the five calendar years after the renewable energy was generated or the
 393 RECs were created. To the extent that a Phase I or Phase II Utility procures RECs for RPS Program
 394 compliance from resources the utility does not own, the utility shall be entitled to recover the costs of such
 395 certificates at its election pursuant to § 56-249.6 or subdivision A 5 d of § 56-585.1.

396 5. Energy from a geothermal heating and cooling system is eligible for inclusion in meeting the
 397 requirements of the RPS Program. RECs from a geothermal heating and cooling system are created based on
 398 the amount of energy, converted from BTUs to kilowatt-hours, that is generated by a geothermal heating and
 399 cooling system for space heating and cooling or water heating. The Commission shall determine the form and
 400 manner in which such RECs are verified.

401 D. Each Phase I or Phase II Utility shall petition the Commission for necessary approvals to procure
 402 zero-carbon electricity generating capacity as set forth in this subsection and energy storage resources as set
 403 forth in subsection E. To the extent that a Phase I or Phase II Utility constructs or acquires new zero-carbon
 404 generating facilities or energy storage resources, the utility shall petition the Commission for the recovery of
 405 the costs of such facilities, at the utility's election, either through its rates for generation and distribution
 406 services or through a rate adjustment clause pursuant to subdivision A 6 of § 56-585.1. All costs not sought
 407 for recovery through a rate adjustment clause pursuant to subdivision A 6 of § 56-585.1 associated with
 408 generating facilities provided by sunlight or onshore or offshore wind are also eligible to be applied by the
 409 utility as a customer credit reinvestment offset as provided in subdivision A 8 of § 56-585.1. Costs associated
 410 with the purchase of energy, capacity, or environmental attributes from facilities owned by the persons other
 411 than the utility required by this subsection shall be recovered by the utility either through its rates for
 412 generation and distribution services or pursuant to § 56-249.6.

413 1. Each Phase I Utility shall petition the Commission for necessary approvals to construct, acquire, or
 414 enter into agreements to purchase the energy, capacity, and environmental attributes of 600 megawatts of
 415 generating capacity using energy derived from sunlight or onshore wind.

416 a. By December 31, 2023, each Phase I Utility shall petition the Commission for necessary approvals to
 417 construct, acquire, or enter into agreements to purchase the energy, capacity, and environmental attributes of
 418 at least 200 megawatts of generating capacity located in the Commonwealth using energy derived from
 419 sunlight or onshore wind, and 35 percent of such generating capacity procured shall be from the purchase of
 420 energy, capacity, and environmental attributes from solar or onshore wind facilities owned by persons other
 421 than the utility, with the remainder, in the aggregate, being from construction or acquisition by such Phase I
 422 Utility.

423 b. By December 31, 2027, each Phase I Utility shall petition the Commission for necessary approvals to
 424 construct, acquire, or enter into agreements to purchase the energy, capacity, and environmental attributes of
 425 at least 200 megawatts of additional generating capacity located in the Commonwealth using energy derived
 426 from sunlight or onshore wind, and 35 percent of such generating capacity procured shall be from the

427 purchase of energy, capacity, and environmental attributes from solar or onshore wind facilities owned by
428 persons other than the utility, with the remainder, in the aggregate, being from construction or acquisition by
429 such Phase I Utility.

430 c. By December 31, 2030, each Phase I Utility shall petition the Commission for necessary approvals to
431 construct, acquire, or enter into agreements to purchase the energy, capacity, and environmental attributes of
432 at least 200 megawatts of additional generating capacity located in the Commonwealth using energy derived
433 from sunlight or onshore wind, and 35 percent of such generating capacity procured shall be from the
434 purchase of energy, capacity, and environmental attributes from solar or onshore wind facilities owned by
435 persons other than the utility, with the remainder, in the aggregate, being from construction or acquisition by
436 such Phase I Utility.

437 d. Nothing in this subdivision 1 shall prohibit such Phase I Utility from constructing, acquiring, or
438 entering into agreements to purchase the energy, capacity, and environmental attributes of more than 600
439 megawatts of generating capacity located in the Commonwealth using energy derived from sunlight or
440 onshore wind, provided the utility receives approval from the Commission pursuant to §§ 56-580 and
441 56-585.1.

442 2. By December 31, 2035, each Phase II Utility shall petition the Commission for necessary approvals to
443 (i) construct, acquire, or enter into agreements to purchase the energy, capacity, and environmental attributes
444 of 16,100 megawatts of generating capacity located in the Commonwealth using energy derived from
445 sunlight or onshore wind, which shall include 1,100 megawatts of solar generation of a nameplate capacity
446 not to exceed three megawatts per individual project and 35 percent of such generating capacity procured
447 shall be from the purchase of energy, capacity, and environmental attributes from solar facilities owned by
448 persons other than a utility, including utility affiliates and deregulated affiliates and (ii) pursuant to §
449 56-585.1:11, construct or purchase one or more offshore wind generation facilities located off the
450 Commonwealth's Atlantic shoreline or in federal waters and interconnected directly into the Commonwealth
451 with an aggregate capacity of up to 5,200 megawatts. At least 200 megawatts of the 16,100 megawatts shall
452 be placed on previously developed project sites.

453 a. By December 31, 2024, each Phase II Utility shall petition the Commission for necessary approvals to
454 construct, acquire, or enter into agreements to purchase the energy, capacity, and environmental attributes of
455 at least 3,000 megawatts of generating capacity located in the Commonwealth using energy derived from
456 sunlight or onshore wind, and 35 percent of such generating capacity procured shall be from the purchase of
457 energy, capacity, and environmental attributes from solar or onshore wind facilities owned by persons other
458 than the utility, with the remainder, in the aggregate, being from construction or acquisition by such Phase II
459 Utility.

460 b. By December 31, 2027, each Phase II Utility shall petition the Commission for necessary approvals to
461 construct, acquire, or enter into agreements to purchase the energy, capacity, and environmental attributes of
462 at least 3,000 megawatts of additional generating capacity located in the Commonwealth using energy
463 derived from sunlight or onshore wind, and 35 percent of such generating capacity procured shall be from the
464 purchase of energy, capacity, and environmental attributes from solar or onshore wind facilities owned by
465 persons other than the utility, with the remainder, in the aggregate, being from construction or acquisition by
466 such Phase II Utility.

467 c. By December 31, 2030, each Phase II Utility shall petition the Commission for necessary approvals to
468 construct, acquire, or enter into agreements to purchase the energy, capacity, and environmental attributes of
469 at least 4,000 megawatts of additional generating capacity located in the Commonwealth using energy
470 derived from sunlight or onshore wind, and 35 percent of such generating capacity procured shall be from the
471 purchase of energy, capacity, and environmental attributes from solar or onshore wind facilities owned by
472 persons other than the utility, with the remainder, in the aggregate, being from construction or acquisition by
473 such Phase II Utility.

474 d. By December 31, 2035, each Phase II Utility shall petition the Commission for necessary approvals to
475 construct, acquire, or enter into agreements to purchase the energy, capacity, and environmental attributes of
476 at least 6,100 megawatts of additional generating capacity located in the Commonwealth using energy
477 derived from sunlight or onshore wind, and 35 percent of such generating capacity procured shall be from the
478 purchase of energy, capacity, and environmental attributes from solar or onshore wind facilities owned by
479 persons other than the utility, with the remainder, in the aggregate, being from construction or acquisition by
480 such Phase II Utility.

481 e. Nothing in this subdivision 2 shall prohibit such Phase II Utility from constructing, acquiring, or
482 entering into agreements to purchase the energy, capacity, and environmental attributes of more than 16,100
483 megawatts of generating capacity located in the Commonwealth using energy derived from sunlight or
484 onshore wind, provided the utility receives approval from the Commission pursuant to §§ 56-580 and
485 56-585.1.

486 3. Nothing in this section shall prohibit a utility from petitioning the Commission to construct or acquire
487 zero-carbon electricity or from entering into contracts to procure the energy, capacity, and environmental

488 attributes of zero-carbon electricity generating resources in excess of the requirements in subsection B. The
 489 Commission shall determine whether to approve such petitions on a stand-alone basis pursuant to §§ 56-580
 490 and 56-585.1, provided that the Commission's review shall also consider whether the proposed generating
 491 capacity (i) is necessary to meet the utility's native load, (ii) is likely to lower customer fuel costs, (iii) will
 492 provide economic development opportunities in the Commonwealth, and (iv) serves a need that cannot be
 493 more affordably met with demand-side or energy storage resources.

494 Each Phase I and Phase II Utility shall, at least once every year, conduct a request for proposals for new
 495 solar and wind resources. Such requests shall quantify and describe the utility's need for energy, capacity, or
 496 renewable energy certificates. The requests for proposals shall be publicly announced and made available for
 497 public review on the utility's website at least 45 days prior to the closing of such request for proposals. The
 498 requests for proposals shall provide, at a minimum, the following information: (a) the size, type, and timing
 499 of resources for which the utility anticipates contracting; (b) any minimum thresholds that must be met by
 500 respondents; (c) major assumptions to be used by the utility in the bid evaluation process, including
 501 environmental emission standards; (d) detailed instructions for preparing bids so that bids can be evaluated on
 502 a consistent basis; (e) the preferred general location of additional capacity; and (f) specific information
 503 concerning the factors involved in determining the price and non-price criteria used for selecting winning
 504 bids. A utility may evaluate responses to requests for proposals based on any criteria that it deems reasonable
 505 but shall at a minimum consider the following in its selection process: (1) the status of a particular project's
 506 development; (2) the age of existing generation facilities; (3) the demonstrated financial viability of a project
 507 and the developer; (4) a developer's prior experience in the field; (5) the location and effect on the
 508 transmission grid of a generation facility; (6) benefits to the Commonwealth that are associated with particular
 509 projects, including regional economic development and the use of goods and services from Virginia
 510 businesses; and (7) the environmental impacts of particular resources, including impacts on air quality within
 511 the Commonwealth and the carbon intensity of the utility's generation portfolio.

512 4. In connection with the requirements of this subsection, each Phase I and Phase II Utility shall,
 513 commencing in 2020 and concluding in 2035, submit annually a plan and petition for approval for the
 514 development of new solar and onshore wind generation capacity. Such plan shall reflect, in the aggregate and
 515 over its duration, the requirements of subsection D concerning the allocation percentages for construction or
 516 purchase of such capacity. Such petition shall contain any request for approval to construct such facilities
 517 pursuant to subsection D of § 56-580 and a request for approval or update of a rate adjustment clause
 518 pursuant to subdivision A 6 of § 56-585.1 to recover the costs of such facilities. Such plan shall also include
 519 the utility's plan to meet the energy storage project targets of subsection E, including the goal of installing at
 520 least 10 percent of such energy storage projects behind the meter. In determining whether to approve the
 521 utility's plan and any associated petition requests, the Commission shall determine whether they are
 522 reasonable and prudent and shall give due consideration to (i) the RPS and carbon dioxide reduction
 523 requirements in this section; (ii) the promotion of new renewable generation and energy storage resources
 524 within the Commonwealth, and associated economic development; and (iii) fuel savings projected to be
 525 achieved by the plan. Notwithstanding any other provision of this title, the Commission's final order
 526 regarding any such petition and associated requests shall be entered by the Commission not more than six
 527 months after the date of the filing of such petition.

528 5. If, in any year, a Phase I or Phase II Utility is unable to meet the compliance obligation of the RPS
 529 Program requirements or if the cost of RECs necessary to comply with RPS Program requirements exceeds
 530 \$45 per megawatt hour, such supplier shall be obligated to make a deficiency payment equal to \$45 for each
 531 megawatt-hour shortfall for the year of noncompliance, except that the deficiency payment for any shortfall
 532 in procuring RECs for solar, wind, or anaerobic digesters located in the Commonwealth shall be \$75 per
 533 megawatts hour for resources one megawatt and lower. The amount of any deficiency payment shall increase
 534 by one percent annually after 2021. A Phase I or Phase II Utility shall be entitled to recover the costs of such
 535 payments as a cost of compliance with the requirements of this subsection pursuant to subdivision A 5 d of §
 536 56-585.1. All proceeds from the deficiency payments shall be deposited into an interest-bearing account
 537 administered by the Department of Energy. In administering this account, the Department of Energy shall
 538 manage the account as follows: (i) 50 percent of total revenue shall be directed to job training programs in
 539 historically economically disadvantaged communities; (ii) 16 percent of total revenue shall be directed to
 540 energy efficiency measures for public facilities; (iii) 30 percent of total revenue shall be directed to renewable
 541 energy programs located in historically economically disadvantaged communities; and (iv) four percent of
 542 total revenue shall be directed to administrative costs.

543 For any project constructed pursuant to this subsection or subsection E, a utility shall, subject to a
 544 competitive procurement process, procure equipment from a Virginia-based or United States-based
 545 manufacturer using materials or product components made in Virginia or the United States, if reasonably
 546 available and competitively priced.

547 E. To enhance reliability and performance of the utility's generation and distribution system, each Phase I
 548 and Phase II Utility shall petition the Commission for necessary approvals to construct or acquire new,

549 utility-owned energy storage resources.

550 1. By December 31, 2035, each Phase I Utility shall petition the Commission for necessary approvals to
551 construct or acquire 400 megawatts of energy storage capacity. Nothing in this subdivision shall prohibit a
552 Phase I Utility from constructing or acquiring more than 400 megawatts of energy storage, provided that the
553 utility receives approval from the Commission pursuant to §§ 56-580 and 56-585.1.

554 2. By December 31, 2035, each Phase II Utility shall petition the Commission for necessary approvals to
555 construct or acquire 2,700 megawatts of energy storage capacity. Nothing in this subdivision shall prohibit a
556 Phase II Utility from constructing or acquiring more than 2,700 megawatts of energy storage, provided that
557 the utility receives approval from the Commission pursuant to §§ 56-580 and 56-585.1.

558 3. No single energy storage project shall exceed 500 megawatts in size, except that a Phase II Utility may
559 procure a single energy storage project up to 800 megawatts.

560 4. All energy storage projects procured pursuant to this subsection shall meet the competitive procurement
561 protocols established in subdivision D 3.

562 5. After July 1, 2020, at least 35 percent of the energy storage facilities placed into service shall be (i)
563 purchased by the public utility from a party other than the public utility or (ii) owned by a party other than a
564 public utility, with the capacity from such facilities sold to the public utility. By January 1, 2021, the
565 Commission shall adopt regulations to achieve the deployment of energy storage for the Commonwealth
566 required in subdivisions 1 and 2, including regulations that set interim targets and update existing utility
567 planning and procurement rules. The regulations shall include programs and mechanisms to deploy energy
568 storage, including competitive solicitations, behind-the-meter incentives, non-wires alternatives programs,
569 and peak demand reduction programs.

570 F. All costs incurred by a Phase I or Phase II Utility related to compliance with the requirements of this
571 section or pursuant to § 56-585.1:11, including (i) costs of generation facilities powered by sunlight or
572 onshore or offshore wind, or energy storage facilities, that are constructed or acquired by a Phase I or Phase II
573 Utility after July 1, 2020, (ii) costs of capacity, energy, or environmental attributes from generation facilities
574 powered by sunlight or onshore or offshore wind, or falling water, or energy storage facilities purchased by
575 the utility from persons other than the utility through agreements after July 1, 2020, and (iii) all other costs of
576 compliance, including costs associated with the purchase of RECs associated with RPS Program
577 requirements pursuant to this section shall be recovered from all retail customers in the service territory of a
578 Phase I or Phase II Utility as a non-bypassable charge, irrespective of the generation supplier of such
579 customer, except (a) as provided in subsection G for an accelerated renewable energy buyer or (b) as
580 provided in subdivision C 3 of § 56-585.1:11, with respect to the costs of an offshore wind generation
581 facility, for a PIPP eligible utility customer or an advanced clean energy buyer or qualifying large general
582 service customer, as those terms are defined in § 56-585.1:11. If a Phase I or Phase II Utility serves
583 customers in more than one jurisdiction, such utility shall recover all of the costs of compliance with the RPS
584 Program requirements from its Virginia customers through the applicable cost recovery mechanism, and all
585 associated energy, capacity, and environmental attributes shall be assigned to Virginia to the extent that such
586 costs are requested but not recovered from any system customers outside the Commonwealth.

587 By September 1, 2020, the Commission shall direct the initiation of a proceeding for each Phase I and
588 Phase II Utility to review and determine the amount of such costs, net of benefits, that should be allocated to
589 retail customers within the utility's service territory which have elected to receive electric supply service from
590 a supplier of electric energy other than the utility, and shall direct that tariff provisions be implemented to
591 recover those costs from such customers beginning no later than January 1, 2021. Thereafter, such charges
592 and tariff provisions shall be updated and tried up by the utility on an annual basis, subject to continuing
593 review and approval by the Commission.

594 G. 1. An accelerated renewable energy buyer may contract with a Phase I or Phase II Utility, or a person
595 other than a Phase I or Phase II Utility, to obtain (i) RECs from RPS eligible resources or (ii) bundled
596 capacity, energy, and RECs from solar or wind generation resources located within the PJM region and
597 initially placed in commercial operation after January 1, 2015, including any contract with a utility for such
598 generation resources that does not allocate to or recover from any other customer of the utility the cost of
599 such resources. Such an accelerated renewable energy buyer may offset all or a portion of its electric load for
600 purposes of RPS compliance through such arrangements. An accelerated renewable energy buyer shall be
601 exempt from the assignment of non-bypassable RPS compliance costs pursuant to subsection F, with the
602 exception of the costs of an offshore wind generating facility pursuant to § 56-585.1:11, based on the amount
603 of RECs obtained pursuant to this subsection in proportion to the customer's total electric energy
604 consumption, on an annual basis. An accelerated renewable energy buyer obtaining RECs only shall not be
605 exempt from costs related to procurement of new solar or onshore wind generation capacity, energy, or
606 environmental attributes, or energy storage facilities, by the utility pursuant to subsections D and E, however,
607 an accelerated renewable energy buyer that is a customer of a Phase II Utility and was subscribed, as of
608 March 1, 2020, to a voluntary companion experimental tariff offering of the utility for the purchase of
609 renewable attributes from renewable energy facilities that requires a renewable facilities agreement and the

610 purchase of a minimum of 2,000 renewable attributes annually, shall be exempt from allocation of the net
 611 costs related to procurement of new solar or onshore wind generation capacity, energy, or environmental
 612 attributes, or energy storage facilities, by the utility pursuant to subsections D and E, based on the amount of
 613 RECs associated with the customer's renewable facilities agreements associated with such tariff offering as of
 614 that date in proportion to the customer's total electric energy consumption, on an annual basis. To the extent
 615 that an accelerated renewable energy buyer contracts for the capacity of new solar or wind generation
 616 resources pursuant to this subsection, the aggregate amount of such nameplate capacity shall be offset from
 617 the utility's procurement requirements pursuant to subsection D. All RECs associated with contracts entered
 618 into by an accelerated renewable energy buyer with the utility, or a person other than the utility, for an RPS
 619 Program shall not be credited to the utility's compliance with its RPS requirements, and the calculation of the
 620 utility's RPS Program requirements shall not include the electric load covered by customers certified as
 621 accelerated renewable energy buyers.

622 2. Each Phase I or Phase II Utility shall certify, and verify as necessary, to the Commission that the
 623 accelerated renewable energy buyer has satisfied the exemption requirements of this subsection for each year,
 624 or an accelerated renewable energy buyer may choose to certify satisfaction of this exemption by reporting to
 625 the Commission individually. The Commission may promulgate such rules and regulations as may be
 626 necessary to implement the provisions of this subsection.

627 3. Provided that no incremental costs associated with any contract between a Phase I or Phase II Utility
 628 and an accelerated renewable energy buyer is allocated to or recovered from any other customer of the utility,
 629 any such contract with an accelerated renewable energy buyer that is a jurisdictional customer of the utility
 630 shall not be deemed a special rate or contract requiring Commission approval pursuant to § 56-235.2.

631 H. No customer of a Phase II Utility with a peak demand in excess of 100 megawatts in 2019 that elected
 632 pursuant to subdivision A 3 of § 56-577 to purchase electric energy from a competitive service provider prior
 633 to April 1, 2019, shall be allocated any non-bypassable charges pursuant to subsection F for such period that
 634 the customer is not purchasing electric energy from the utility, and such customer's electric load shall not be
 635 included in the utility's RPS Program requirements. No customer of a Phase I Utility that elected pursuant to
 636 subdivision A 3 of § 56-577 to purchase electric energy from a competitive service provider prior to February
 637 1, 2019, shall be allocated any non-bypassable charges pursuant to subsection F for such period that the
 638 customer is not purchasing electric energy from the utility, and such customer's electric load shall not be
 639 included in the utility's RPS Program requirements.

640 I. In any petition by a Phase I or Phase II Utility for a certificate of public convenience and necessity to
 641 construct and operate an electrical generating facility that generates electric energy derived from sunlight
 642 submitted pursuant to § 56-580, such utility shall demonstrate that the proposed facility was subject to
 643 competitive procurement or solicitation as set forth in subdivision D 3.

644 J. Notwithstanding any contrary provision of law, for the purposes of this section, any falling water
 645 generation facility located in the Commonwealth and commencing commercial operations prior to July 1,
 646 2024, shall be considered a renewable energy portfolio standard (RPS) eligible source.

647 K. Nothing in this section shall apply to any entity organized under Chapter 9.1 (§ 56-231.15 et seq.).

648 L. The Commission shall adopt such rules and regulations as may be necessary to implement the
 649 provisions of this section, including a requirement that participants verify whether the RPS Program
 650 requirements are met in accordance with this section.