

1 **RENEWABLE ENERGY MODIFICATIONS**

2 2010 GENERAL SESSION

3 STATE OF UTAH

4 **Chief Sponsor: Stephen H. Urquhart**

5 House Sponsor: Don L. Ipson

7 **LONG TITLE**

8 **General Description:**

9 This bill includes certain compressed air energy storage technology as a renewable
10 energy source under Title 10, Chapter 19, Municipal Electric Utility Carbon Emission
11 Reduction Act, and Title 54, Chapter 17, Energy Resource Procurement Act.

12 **Highlighted Provisions:**

13 This bill:

- 14 ▶ includes certain compressed air energy storage technology as a renewable energy
15 source under Title 10, Chapter 19, Municipal Electric Utility Carbon Emission
16 Reduction Act, and Title 54, Chapter 17, Energy Resource Procurement Act; and
- 17 ▶ makes technical changes.

18 **Monies Appropriated in this Bill:**

19 None

20 **Other Special Clauses:**

21 None

22 **Utah Code Sections Affected:**

23 AMENDS:

24 **10-19-102**, as enacted by Laws of Utah 2008, Chapter 374

25 **54-17-601**, as enacted by Laws of Utah 2008, Chapter 374

27 *Be it enacted by the Legislature of the state of Utah:*

28 Section 1. Section **10-19-102** is amended to read:

29 **10-19-102. Definitions.**

30 As used in this chapter:

31 (1) "Adjusted retail electric sales" means the total kilowatt-hours of retail electric sales
32 of a municipal electric utility to customers in this state in a calendar year, reduced by:

33 (a) the amount of those kilowatt-hours attributable to electricity generated or
34 purchased in that calendar year from qualifying zero carbon emissions generation and
35 qualifying carbon sequestration generation;

36 (b) the amount of those kilowatt-hours attributable to electricity generated or
37 purchased in that calendar year from generation located within the geographic boundary of the
38 Western Electricity Coordinating Council that derives its energy from one or more of the
39 following but that does not satisfy the definition of a renewable energy source or that
40 otherwise has not been used to satisfy Subsection 10-19-201(1):

41 (i) wind energy;

42 (ii) solar photovoltaic and solar thermal energy;

43 (iii) wave, tidal, and ocean thermal energy;

44 (iv) except for combustion of wood that has been treated with chemical preservatives
45 such as creosote, pentachlorophenol or chromated copper arsenate, biomass and biomass
46 byproducts, including:

47 (A) organic waste;

48 (B) forest or rangeland woody debris from harvesting or thinning conducted to
49 improve forest or rangeland ecological health and to reduce wildfire risk;

50 (C) agricultural residues;

51 (D) dedicated energy crops; and

52 (E) landfill gas or biogas produced from organic matter, wastewater, anaerobic
53 digesters, or municipal solid waste;

54 (v) geothermal energy;

55 (vi) hydro-electric energy; or

56 (vii) waste gas and waste heat capture or recovery; and

57 (c) the number of kilowatt-hours attributable to reductions in retail sales in that

58 calendar year from activities or programs promoting electric energy efficiency or conservation
59 or more efficient management of electric energy load.

60 (2) "Amount of kilowatt-hours attributable to electricity generated or purchased in that
61 calendar year from qualifying carbon sequestration generation," for qualifying carbon
62 sequestration generation, means the kilowatt-hours supplied by a facility during the calendar
63 year multiplied by the ratio of the amount of carbon dioxide captured from the facility and
64 sequestered to the sum of the amount of carbon dioxide captured from the facility and
65 sequestered plus the amount of carbon dioxide emitted from the facility during the same
66 calendar year.

67 (3) "Banked renewable energy certificate" means a bundled or unbundled renewable
68 energy certificate that is:

69 (a) not used in a calendar year to comply with this part or with a renewable energy
70 program in another state; and

71 (b) carried forward into a subsequent year.

72 (4) "Bundled renewable energy certificate" means a renewable energy certificate for
73 qualifying electricity that is acquired:

74 (a) by a municipal electric utility by a trade, purchase, or other transfer of electricity
75 that includes the renewable energy attributes of, or certificate that is issued for, the electricity;
76 or

77 (b) by a municipal electric utility by generating the electricity for which the renewable
78 energy certificate is issued.

79 (5) "Commission" means the Public Service Commission.

80 (6) "Municipal electric utility" means any municipality that owns, operates, controls,
81 or manages a facility that provides electric power for a retail customer, whether domestic,
82 commercial, industrial, or otherwise.

83 (7) "Qualifying carbon sequestration generation" means a fossil-fueled generating
84 facility located within the geographic boundary of the Western Electricity Coordinating
85 Council that:

86 (a) becomes operational or is retrofitted on or after January 1, 2008; and
87 (b) reduces carbon dioxide emissions into the atmosphere through permanent
88 geological sequestration or through other verifiably permanent reductions in carbon dioxide
89 emissions through the use of technology.

90 (8) "Qualifying electricity" means electricity generated on or after January 1, 1995
91 from a renewable energy source if:

92 (a) (i) the renewable energy source is located within the geographic boundary of the
93 Western Electricity Coordinating Council; or

94 (ii) the qualifying electricity is delivered to the transmission system of a municipal
95 electric utility or a delivery point designated by the municipal electric utility for the purpose of
96 subsequent delivery to the municipal electric utility; and

97 (b) the renewable energy attributes of the electricity are not traded, sold, transferred, or
98 otherwise used to satisfy another state's renewable energy program.

99 (9) "Qualifying zero carbon emissions generation":

100 (a) means a generation facility located within the geographic boundary of the Western
101 Electricity Coordinating Council that:

102 (i) becomes operational on or after January 1, 2008; and

103 (ii) does not produce carbon as a byproduct of the generation process;

104 (b) includes generation powered by nuclear fuel; and

105 (c) does not include renewable energy sources used to satisfy a target established
106 under Section 10-19-201.

107 (10) "Renewable energy certificate" means a certificate issued in accordance with the
108 requirements of Sections 10-19-202 and 54-17-603.

109 (11) "Renewable energy source" means:

110 (a) an electric generation facility or generation capability or upgrade that becomes
111 operational on or after January 1, 1995 that derives its energy from one or more of the
112 following:

113 (i) wind energy;

- 114 (ii) solar photovoltaic and solar thermal energy;
- 115 (iii) wave, tidal, and ocean thermal energy;
- 116 (iv) except for combustion of wood that has been treated with chemical preservatives
- 117 such as creosote, pentachlorophenol or chromated copper arsenate, biomass and biomass
- 118 byproducts, including:
 - 119 (A) organic waste;
 - 120 (B) forest or rangeland woody debris from harvesting or thinning conducted to
 - 121 improve forest or rangeland ecological health and to reduce wildfire risk;
 - 122 (C) agricultural residues;
 - 123 (D) dedicated energy crops; and
 - 124 (E) landfill gas or biogas produced from organic matter, wastewater, anaerobic
 - 125 digesters, or municipal solid waste;
 - 126 (v) geothermal energy located outside the state;
 - 127 (vi) waste gas and waste heat capture or recovery; [or]
 - 128 (vii) efficiency upgrades to a hydroelectric facility, without regard to the date upon
 - 129 which the facility became operational, if the upgrades become operational on or after January
 - 130 1, 1995; or
 - 131 (viii) a compressed air energy storage process, if:
 - 132 (A) the process used to compress the air is a renewable energy source and the
 - 133 associated renewable energy certificates are retired for the purpose of the compressed air
 - 134 energy storage process; or
 - 135 (B) equivalent renewable energy certificates are obtained and retired for the purpose of
 - 136 the compressed air energy storage process;
 - 137 (b) any of the following:
 - 138 (i) up to 50 average megawatts of electricity per year per municipal electric utility
 - 139 from a certified low-impact hydroelectric facility, without regard to the date upon which the
 - 140 facility becomes operational, if the facility is certified as a low-impact hydroelectric facility on
 - 141 or after January 1, 1995, by a national certification organization;

- 142 (ii) geothermal energy if located within the state, without regard to the date upon
- 143 which the facility becomes operational; and
- 144 (iii) hydroelectric energy if located within the state, without regard to the date upon
- 145 which the facility becomes operational;
- 146 (c) hydrogen gas derived from any source of energy described in Subsection (11)(a) or
- 147 (b);
- 148 (d) if an electric generation facility employs multiple energy sources, that portion of
- 149 the electricity generated that is attributable to energy sources described in Subsections (11)(a)
- 150 through (c); and
- 151 (e) any of the following located in the state and owned by a user of energy:
- 152 (i) a demand side management measure, as defined by Subsection 54-7-12.8(1) with
- 153 the quantity of renewable energy certificates to which the user is entitled determined by the
- 154 equivalent energy saved by the measure;
- 155 (ii) a solar thermal system that reduces the consumption of fossil fuels, with the
- 156 quantity of renewable energy certificates to which the user is entitled determined by the
- 157 equivalent kilowatt-hours saved, except to the extent the commission determines otherwise
- 158 with respect to net-metered energy;
- 159 (iii) a solar photovoltaic system that reduces the consumption of fossil fuels with the
- 160 quantity of renewable energy certificates to which the user is entitled determined by the total
- 161 production of the system, except to the extent the commission determines otherwise with
- 162 respect to net-metered energy;
- 163 (iv) a hydroelectric or geothermal facility, with the quantity of renewable energy
- 164 certificates to which the user is entitled determined by the total production of the facility,
- 165 except to the extent the commission determines otherwise with respect to net-metered energy;
- 166 (v) a waste gas or waste heat capture or recovery system other than from a combined
- 167 cycle combustion turbine that does not use waste gas or waste heat, with the quantity of
- 168 renewable energy certificates to which the user is entitled determined by the total production
- 169 of the system, except to the extent the commission determines otherwise with respect to

170 net-metered energy; and

171 (vi) the station use of solar thermal energy, solar photovoltaic energy, hydroelectric
172 energy, geothermal energy, waste gas, or waste heat capture and recovery.

173 (12) "Unbundled renewable energy certificate" means a renewable energy certificate
174 associated with:

175 (a) qualifying electricity that is acquired by a municipal electric utility or other person
176 by trade, purchase, or other transfer without acquiring the electricity for which the certificate
177 was issued; or

178 (b) activities listed in Subsection (11)(e).

179 Section 2. Section **54-17-601** is amended to read:

180 **54-17-601. Definitions.**

181 As used in this part:

182 (1) "Adjusted retail electric sales" means the total kilowatt-hours of retail electric sales
183 of an electrical corporation to customers in this state in a calendar year, reduced by:

184 (a) the amount of those kilowatt-hours attributable to electricity generated or
185 purchased in that calendar year from qualifying zero carbon emissions generation and
186 qualifying carbon sequestration generation;

187 (b) the amount of those kilowatt-hours attributable to electricity generated or
188 purchased in that calendar year from generation located within the geographic boundary of the
189 Western Electricity Coordinating Council that derives its energy from one or more of the
190 following but that does not satisfy the definition of a renewable energy source or that
191 otherwise has not been used to satisfy Subsection 54-17-602(1):

192 (i) wind energy;

193 (ii) solar photovoltaic and solar thermal energy;

194 (iii) wave, tidal, and ocean thermal energy;

195 (iv) except for combustion of wood that has been treated with chemical preservatives
196 such as creosote, pentachlorophenol or chromated copper arsenate, biomass and biomass
197 byproducts, including:

- 198 (A) organic waste;
- 199 (B) forest or rangeland woody debris from harvesting or thinning conducted to
200 improve forest or rangeland ecological health and to reduce wildfire risk;
- 201 (C) agricultural residues;
- 202 (D) dedicated energy crops; and
- 203 (E) landfill gas or biogas produced from organic matter, wastewater, anaerobic
204 digesters, or municipal solid waste;
- 205 (v) geothermal energy;
- 206 (vi) hydroelectric energy; or
- 207 (vii) waste gas and waste heat capture or recovery; and
- 208 (c) the number of kilowatt-hours attributable to reductions in retail sales in that
209 calendar year from demand side management as defined in Section 54-7-12.8, with the
210 kilowatt-hours for an electrical corporation whose rates are regulated by the commission and
211 adjusted by the commission to exclude kilowatt-hours for which a renewable energy certificate
212 is issued under Subsection 54-17-603(4)(b).
- 213 (2) "Amount of kilowatt-hours attributable to electricity generated or purchased in that
214 calendar year from qualifying carbon sequestration generation," for qualifying carbon
215 sequestration generation, means the kilowatt-hours supplied by a facility during the calendar
216 year multiplied by the ratio of the amount of carbon dioxide captured from the facility and
217 sequestered to the sum of the amount of carbon dioxide captured from the facility and
218 sequestered plus the amount of carbon dioxide emitted from the facility during the same
219 calendar year.
- 220 (3) "Banked renewable energy certificate" means a bundled or unbundled renewable
221 energy certificate that is:
- 222 (a) not used in a calendar year to comply with this part or with a renewable energy
223 program in another state; and
- 224 (b) carried forward into a subsequent year.
- 225 (4) "Bundled renewable energy certificate" means a renewable energy certificate for

226 qualifying electricity that is acquired:

227 (a) by an electrical corporation by a trade, purchase, or other transfer of electricity that
228 includes the renewable energy attributes of, or certificate that is issued for, the electricity; or

229 (b) by an electrical corporation by generating the electricity for which the renewable
230 energy certificate is issued.

231 (5) "Electrical corporation":

232 (a) is as defined in Section 54-2-1; and

233 (b) does not include a person generating electricity that is not for sale to the public.

234 (6) "Qualifying carbon sequestration generation" means a fossil-fueled generating
235 facility located within the geographic boundary of the Western Electricity Coordinating
236 Council that:

237 (a) becomes operational or is retrofitted on or after January 1, 2008; and

238 (b) reduces carbon dioxide emissions into the atmosphere through permanent
239 geological sequestration or through another verifiably permanent reduction in carbon dioxide
240 emissions through the use of technology.

241 (7) "Qualifying electricity" means electricity generated on or after January 1, 1995
242 from a renewable energy source if:

243 (a) (i) the renewable energy source is located within the geographic boundary of the
244 Western Electricity Coordinating Council; or

245 (ii) the qualifying electricity is delivered to the transmission system of an electrical
246 corporation or a delivery point designated by the electrical corporation for the purpose of
247 subsequent delivery to the electrical corporation; and

248 (b) the renewable energy attributes of the electricity are not traded, sold, transferred, or
249 otherwise used to satisfy another state's renewable energy program.

250 (8) "Qualifying zero carbon emissions generation":

251 (a) means a generation facility located within the geographic boundary of the Western
252 Electricity Coordinating Council that:

253 (i) becomes operational on or after January 1, 2008; and

254 (ii) does not produce carbon as a byproduct of the generation process;
255 (b) includes generation powered by nuclear fuel; and
256 (c) does not include renewable energy sources used to satisfy the requirement
257 established under Subsection 54-17-602(1).
258 (9) "Renewable energy certificate" means a certificate issued under Section
259 54-17-603.
260 (10) "Renewable energy source" means:
261 (a) an electric generation facility or generation capability or upgrade that becomes
262 operational on or after January 1, 1995 that derives its energy from one or more of the
263 following:
264 (i) wind energy;
265 (ii) solar photovoltaic and solar thermal energy;
266 (iii) wave, tidal, and ocean thermal energy;
267 (iv) except for combustion of wood that has been treated with chemical preservatives
268 such as creosote, pentachlorophenol or chromated copper arsenate, biomass and biomass
269 byproducts, including:
270 (A) organic waste;
271 (B) forest or rangeland woody debris from harvesting or thinning conducted to
272 improve forest or rangeland ecological health and to reduce wildfire risk;
273 (C) agricultural residues;
274 (D) dedicated energy crops; and
275 (E) landfill gas or biogas produced from organic matter, wastewater, anaerobic
276 digesters, or municipal solid waste;
277 (v) geothermal energy located outside the state;
278 (vi) waste gas and waste heat capture or recovery; ~~[or]~~
279 (vii) efficiency upgrades to a hydroelectric facility, without regard to the date upon
280 which the facility became operational, if the upgrades become operational on or after January
281 1, 1995; or

- 282 (viii) compressed air, if:
- 283 (A) the compressed air is taken from compressed air energy storage; and
- 284 (B) the energy used to compress the air is a renewable energy source;
- 285 (b) any of the following:
- 286 (i) up to 50 average megawatts of electricity per year per electrical corporation from a
- 287 certified low-impact hydroelectric facility, without regard to the date upon which the facility
- 288 becomes operational, if the facility is certified as a low-impact hydroelectric facility on or after
- 289 January 1, 1995, by a national certification organization;
- 290 (ii) geothermal energy if located within the state, without regard to the date upon
- 291 which the facility becomes operational; or
- 292 (iii) hydroelectric energy if located within the state, without regard to the date upon
- 293 which the facility becomes operational;
- 294 (c) hydrogen gas derived from any source of energy described in Subsection (10)(a) or
- 295 (b);
- 296 (d) if an electric generation facility employs multiple energy sources, that portion of
- 297 the electricity generated that is attributable to energy sources described in Subsections (10)(a)
- 298 through (c); and
- 299 (e) any of the following located in the state and owned by a user of energy:
- 300 (i) a demand side management measure, as defined by Subsection 54-7-12.8(1), with
- 301 the quantity of renewable energy certificates to which the user is entitled determined by the
- 302 equivalent energy saved by the measure;
- 303 (ii) a solar thermal system that reduces the consumption of fossil fuels, with the
- 304 quantity of renewable energy certificates to which the user is entitled determined by the
- 305 equivalent kilowatt-hours saved, except to the extent the commission determines otherwise
- 306 with respect to net-metered energy;
- 307 (iii) a solar photovoltaic system that reduces the consumption of fossil fuels with the
- 308 quantity of renewable energy certificates to which the user is entitled determined by the total
- 309 production of the system, except to the extent the commission determines otherwise with

310 respect to net-metered energy;

311 (iv) a hydroelectric or geothermal facility with the quantity of renewable energy
312 certificates to which the user is entitled determined by the total production of the facility,
313 except to the extent the commission determines otherwise with respect to net-metered energy;

314 (v) a waste gas or waste heat capture or recovery system, other than from a combined
315 cycle combustion turbine that does not use waste gas or waste heat, with the quantity of
316 renewable energy certificates to which the user is entitled determined by the total production
317 of the system, except to the extent the commission determines otherwise with respect to
318 net-metered energy; and

319 (vi) the station use of solar thermal energy, solar photovoltaic energy, hydroelectric
320 energy, geothermal energy, waste gas, or waste heat capture and recovery.

321 (11) "Unbundled renewable energy certificate" means a renewable energy certificate
322 associated with:

323 (a) qualifying electricity that is acquired by an electrical corporation or other person
324 by trade, purchase, or other transfer without acquiring the electricity for which the certificate
325 was issued; or

326 (b) activities listed in Subsection (10)(e).