



# House of Representatives

General Assembly

**File No. 491**

*January Session, 2009*

Substitute House Bill No. 6635

*House of Representatives, April 6, 2009*

The Committee on Energy and Technology reported through REP. NARDELLO of the 89th Dist., Chairperson of the Committee on the part of the House, that the substitute bill ought to pass.

## ***AN ACT CONCERNING SOLAR POWER.***

Be it enacted by the Senate and House of Representatives in General Assembly convened:

1 Section 1. (NEW) (*Effective from passage*) (a) Any residential solar  
2 photovoltaic direct incentive program administered by the Renewable  
3 Energy Investment Fund shall be structured and implemented  
4 pursuant to this section and shall result in a minimum of thirty-five  
5 megawatts of new residential solar photovoltaic installations by  
6 December 31, 2021.

7 (b) The Renewable Energy Investment Fund shall offer direct  
8 financial incentives, in the form of performance-based incentives or  
9 expected performance-based buydowns, for the purchase or lease of  
10 qualifying residential solar photovoltaic systems. For the purposes of  
11 this section, "performance-based incentives" means incentives paid out  
12 on a per kilowatt-hour basis, and "expected performance-based  
13 buydowns" means incentives paid out as a one-time upfront incentive  
14 based on expected system performance. The Renewable Energy

15 Investments Board shall consider verified solar system characteristics,  
16 such as operational efficiency, size, location, shading and orientation,  
17 when determining the type of incentive.

18 (c) On or before January 1, 2010, the Renewable Energy Investment  
19 Fund shall develop and publish a proposed schedule for the offering of  
20 performance-based incentives and expected performance-based  
21 buydowns over the duration of any such solar incentive program. Such  
22 schedule shall: (1) Provide for no fewer than eight blocks and  
23 associated solar capacity and incentive levels; (2) provide incentives  
24 that decline over time and will foster the sustained and orderly  
25 development of a state-based solar industry; (3) automatically adjust to  
26 the next block once the Renewable Energy Investment Fund has issued  
27 rebate reservations fully committing the target solar capacity and  
28 available incentives in that block; and (4) provide comparable  
29 economic incentives for the purchase or lease of qualifying residential  
30 solar photovoltaic systems. The Renewable Energy Investment Fund  
31 shall determine whether to establish a uniform state-wide incentive  
32 schedule or separate incentive schedules for each electric distribution  
33 company service territory and shall retain the services of a third-party  
34 entity with expertise in the area of solar energy program design to  
35 assist in the development of the incentive schedule or schedules. The  
36 Renewable Energy Investment Fund shall hold public hearings on the  
37 proposed incentive schedule at no fewer than three locations in the  
38 state. In adopting the final incentive schedule, the Renewable Energy  
39 Investment Fund shall summarize comments it receives from the  
40 public and its disposition thereon.

41 (d) The Renewable Energy Investment Fund shall establish and  
42 periodically update eligibility criteria, including, but not limited to,  
43 requirements related to: (1) Participating customers, (2) equipment  
44 sizing and technical specifications, (3) installation standards, (4) energy  
45 efficiency conditions, (5) equipment warranties, (6) performance, and  
46 (7) relocation of equipment. Such eligibility criteria shall not  
47 unreasonably restrict the host's ability to designate a third-party  
48 developer, system owner or installer as the recipient of the incentive

49 award.

50 (e) The Renewable Energy Investment Fund shall establish  
51 procedures to provide reasonable assurance that rebate reservations  
52 are made and incentives are paid out only to qualifying residential  
53 solar photovoltaic systems demonstrating a high likelihood of being  
54 installed and operated as indicated in application materials. The  
55 Renewable Energy Investment Fund shall establish a dispute  
56 resolution process and may establish and implement, among other  
57 procedures: (1) Nonrefundable application fees or performance bonds;  
58 (2) performance milestones; (3) deadlines for project completion and  
59 relinquishment of position in an incentive queue; or (4) postinstallation  
60 adjustment or denial of performance-based incentives.

61 (f) To meet program targets, any unclaimed incentive reservations  
62 shall be promptly restored to the then applicable block and made  
63 available to be claimed by other applicants.

64 (g) The Renewable Energy Investment Fund shall maintain on its  
65 web site an up-to-date status of the amount of incentives and solar  
66 capacity remaining in the current block. The web site shall include  
67 other information and tools to educate residential electricity users on  
68 solar energy use and facilitate their participation in the Renewable  
69 Energy Investment Fund's program by providing on-line application  
70 forms, current program guidelines and incentive estimators.

71 (h) Funding for the residential performance-based incentive  
72 program shall be apportioned from the moneys collected under the  
73 surcharge specified in section 16-245n of the general statutes.

74 Sec. 2. (NEW) (*Effective from passage*) (a) Notwithstanding the  
75 provisions of any previously approved resource procurement plan  
76 adopted pursuant to the general statutes, commencing on July 1, 2010,  
77 and within a period of five years thereafter, each electric distribution  
78 company shall solicit proposals and, provided reasonable proposals  
79 have been received, file with the Department of Public Utility Control  
80 for its approval, one or more long-term power purchase contracts with

81 owners or developers of customer-sited, nonresidential solar  
82 photovoltaic generation projects less than two thousand kilowatts in  
83 size, located on the customer side of the revenue meter, and connected  
84 to the distribution system of the electric distribution company. For  
85 purposes of this subsection, "nonresidential" shall include all utility  
86 retail rate classes with the exception of single-family residences and  
87 individual apartments qualifying for residential electric service.

88 (b) Solicitations conducted by the electric distribution company  
89 shall be for the purchase of solar renewable energy credits produced  
90 by eligible nonresidential, customer-sited solar photovoltaic generating  
91 projects over the duration of the long-term contract. For purposes of  
92 this section, a long-term contract is a contract for a minimum of fifteen  
93 years. The electric distribution company may solicit proposals for a  
94 combination of renewable energy and associated solar renewable  
95 energy credits.

96 (c) The aggregate procurement of solar renewable energy credits by  
97 electric distribution companies pursuant to this section shall be no less  
98 than three million one hundred ninety-one thousand two hundred  
99 fifty. The production of a megawatt hour of electricity from a Class I  
100 solar renewable energy source first placed in service on or after the  
101 effective date of this section shall create one solar renewable energy  
102 credit. The obligation to purchase solar renewable energy credits shall  
103 be apportioned to electric distribution companies based on their  
104 respective distribution system loads at the commencement of the  
105 procurement period, as determined by the department.

106 (d) For contracts entered into on or before July 1, 2010, an electric  
107 distribution company shall not be obligated to consider or enter into  
108 proposed long-term solar renewable energy credit contracts that  
109 exceed six hundred fifty dollars per megawatt hour in the initial year  
110 of the procurement period, declining by seven per cent annually.

111 (e) An electric distribution company may retire the solar renewable  
112 energy credits it procures through long-term contracting to satisfy its  
113 obligation pursuant to section 16-245a of the general statutes.

114 (f) Nothing in this section shall preclude the resale or other  
115 disposition of energy or associated solar renewable energy credits  
116 purchased by the electric distribution company, provided the  
117 distribution company shall net the cost of payments made to projects  
118 under the long-term contracts against the proceeds of the sale of  
119 energy or solar renewable energy credits and the difference shall be  
120 credited or charged to distribution customers through a uniform fully  
121 reconciling factor in distribution rates, subject to review and approval  
122 by the department.

123 Sec. 3. (NEW) (*Effective from passage*) (a) Each electric distribution  
124 company shall, not later than one hundred eighty days after the  
125 effective date of this section, propose a solar solicitation plan that shall  
126 include a timetable and methodology for soliciting proposals for long-  
127 term solar renewable energy credits or energy contracts. The  
128 distribution company's solar solicitation plan shall be subject to review  
129 and approval of the department, provided contracts comprising no less  
130 than twenty-five per cent of the electric distribution company's  
131 obligation shall be submitted for department approval on or before  
132 January 1, 2011, and no less than seventy-five per cent of such  
133 obligation shall be submitted for such approval on or before July 1,  
134 2013.

135 (b) The electric distribution company's approved solar solicitation  
136 plan shall be designed to foster a diversity of solar project sizes and  
137 participation among all customer classes subject to cost-effectiveness  
138 considerations. Separate procurement processes shall be conducted for  
139 nonresidential systems between ten kilowatts and fifty kilowatts and  
140 for nonresidential systems between fifty-one kilowatts and two  
141 thousand kilowatts. The department shall give preference to  
142 competitive bidding for resources of more than fifty kilowatts, unless  
143 the department determines that an alternative methodology is in the  
144 best interests of the distribution company's customers and the  
145 development of a competitive and self-sustaining solar market.  
146 Systems less than fifty-one kilowatts shall be eligible to receive a  
147 standard offer solar renewable energy credit price equivalent to the

148 highest accepted bid price in the most recent large system solicitation,  
149 plus an additional incentive of up to ten per cent as the department  
150 deems necessary to elicit proposals from this market segment.

151 (c) Each electric distribution company shall execute its approved  
152 solicitation plan and submit for department review and approval its  
153 preferred solar procurement plan comprised of any proposed contract  
154 or contracts with independent solar developers or utility affiliates and,  
155 where applicable, utility proposals to develop solar projects as a rate-  
156 based investment. If applicable, an independent auditor shall conduct  
157 an audit of the electric distribution company's bid solicitation and  
158 evaluation process to ensure that it comports with the standards set  
159 forth in subsection (e) of this section. For purposes of such audit, the  
160 electric distribution company shall provide the independent auditor  
161 immediate and continuing access to all documents and data reviewed,  
162 used or produced by the electric distribution company in its bid  
163 solicitation and evaluation process. The electric distribution company  
164 shall make all its personnel, agents and contractors used in the bid  
165 solicitation and evaluation available for interview by the auditor. The  
166 electric distribution company shall conduct any additional modeling  
167 requested by the independent auditor to test the assumptions and  
168 results of the bid evaluation process. Not later than sixty days after the  
169 electric distribution company's selection of solar resources, the  
170 independent auditor shall file a report with the department containing  
171 the auditor's findings, with any deficiencies specifically reported.

172 (d) The department shall hold a hearing that shall be conducted as a  
173 contested case, in accordance with the provisions of chapter 54 of the  
174 general statutes, to approve, reject or modify an application for  
175 approval of the electric distribution company's solar procurement  
176 plan. The department shall only approve such plan if the department  
177 finds that (1) the solicitation and evaluation conducted by the electric  
178 distribution company was the result of a fair, open, competitive and  
179 transparent process; (2) approval of the solar procurement plan would  
180 result in the lowest reasonable cost of solar energy or solar renewable  
181 energy credits; and (3) such procurement plan satisfies other criteria

182 established in the approved solicitation plan. Where the electric  
183 distribution company has proposed to develop and rate-base,  
184 customer-sited solar facilities, the department shall additionally  
185 determine that such investment will not restrict competition or restrict  
186 growth in the state's solar energy industry or unfairly employ in a  
187 manner which would restrict competition in the market for solar  
188 energy systems any financial, marketing, distributing or generating  
189 advantage that the electric distribution company may exercise as a  
190 result of its authority to operate as a public service company. The  
191 department may, at its discretion, retain the services of an independent  
192 auditor with expertise in the area of energy procurement. The  
193 independent auditor shall be unaffiliated with the electric distribution  
194 company or its affiliates and shall not, directly or indirectly, have  
195 benefited from employment or contracts with the electric distribution  
196 company or its affiliates in the preceding five years, except as an  
197 independent auditor. The independent auditor shall not participate in  
198 or advise the electric distribution company with respect to any  
199 decisions in the bid solicitation or bid evaluation process. The  
200 department's administrative costs in reviewing the electric distribution  
201 company's solar procurement plan shall be recovered in rates.

202 (e) The electric distribution company shall be entitled to recover its  
203 reasonable costs of complying with its approved solar procurement  
204 plan.

205 (f) When the department authorizes the electric distribution  
206 company to enter into a contract or contracts pursuant to subsection  
207 (d) of this section, the department shall also provide for a  
208 remuneration to the electric distribution company equal to four per  
209 cent of the annual payments under the contract to compensate the  
210 company for accepting the financial obligation of the long-term  
211 contract, provided such remuneration shall not be considered as a cost  
212 of procuring solar resources from unaffiliated developers for purposes  
213 of bid evaluation.

214 Sec. 4. (*Effective July 1, 2009*) (a) For the purposes described in

215 subsection (b) of this section, the State Bond Commission shall have  
216 the power, from time to time, to authorize the issuance of bonds of the  
217 state in one or more series and in principal amounts not exceeding in  
218 the aggregate one hundred fifty million dollars.

219 (b) The proceeds of the sale of said bonds, to the extent of the  
220 amount stated in subsection (a) of this section, shall be used by the  
221 Department of Public Works for the purpose of funding projects  
222 pursuant to section 5 of this act.

223 (c) All provisions of section 3-20 of the general statutes, or the  
224 exercise of any right or power granted thereby, which are not  
225 inconsistent with the provisions of this section are hereby adopted and  
226 shall apply to all bonds authorized by the State Bond Commission  
227 pursuant to this section, and temporary notes in anticipation of the  
228 money to be derived from the sale of any such bonds so authorized  
229 may be issued in accordance with said section 3-20 and from time to  
230 time renewed. Such bonds shall mature at such time or times not  
231 exceeding twenty years from their respective dates as may be provided  
232 in or pursuant to the resolution or resolutions of the State Bond  
233 Commission authorizing such bonds. None of said bonds shall be  
234 authorized except upon a finding by the State Bond Commission that  
235 there has been filed with it a request for such authorization which is  
236 signed by or on behalf of the Secretary of the Office of Policy and  
237 Management and states such terms and conditions as said commission,  
238 in its discretion, may require. Said bonds issued pursuant to this  
239 section shall be general obligations of the state and the full faith and  
240 credit of the state of Connecticut are pledged for the payment of the  
241 principal of and interest on said bonds as the same become due, and  
242 accordingly and as part of the contract of the state with the holders of  
243 said bonds, appropriation of all amounts necessary for punctual  
244 payment of such principal and interest is hereby made, and the State  
245 Treasurer shall pay such principal and interest as the same become  
246 due.

247 Sec. 5. (NEW) (*Effective from passage*) (a) On or before July 1, 2010,

248 the Renewable Energy Investment Fund, in consultation with the  
249 Department of Public Works, shall complete, or cause to be completed,  
250 a comprehensive solar feasibility survey of facilities owned or operated  
251 by the state with a load of fifty kilowatts, or more. The survey shall  
252 rank state-owned and operated facilities based on their technical  
253 feasibility to accommodate solar photovoltaic generating systems by  
254 considering such factors as: (1) On-site energy consumption; (2)  
255 building orientation; (3) roof age and condition; (4) shading and the  
256 potential for obstruction to sunlight over the life of the solar system; (5)  
257 structural load capacity; (6) availability of ancillary facilities, such as  
258 parking lots, walkways or maintenance areas; (7) nonenergy related  
259 amenities; and (8) other factors that the Renewable Energy Investment  
260 Fund deems may bear on the technical feasibility of such solar  
261 deployment.

262 (b) The Department of Public Works, in consultation with the  
263 Renewable Energy Investment Fund, shall issue one or more requests  
264 for proposals for the deployment of solar photovoltaic generating  
265 systems at state-owned or operated facilities. Any such request for  
266 proposals shall be structured to maximize the state's ability to secure  
267 incentives available from the federal government or other sources. The  
268 department may seek in any request for proposals the services of an  
269 entity to finance, design, construct, own or maintain such solar  
270 photovoltaic system under a long-term solar services agreement. Any  
271 such entity chosen to provide such services shall not be considered a  
272 public service company under section 16-1 of the general statutes.

273 (c) Any contract entered into between the department and an entity  
274 pursuant to subsection (b) of this section shall require that the state  
275 retain full title to any renewable energy credit or other tradable  
276 certificate reflecting the environmental attributes of the electricity  
277 created by the solar photovoltaic generating system over the life of the  
278 system. The state shall retire any renewable energy credit or tradable  
279 certificate so created.

280 Sec. 6. Section 16-243h of the general statutes is repealed and the

281 following is substituted in lieu thereof (*Effective from passage*):

282       (a) On and after January 1, 2000, each electric supplier or any electric  
283 distribution company providing standard offer, transitional standard  
284 offer, standard service or back-up electric generation service, pursuant  
285 to section 16-244c, shall give a credit for any electricity generated by a  
286 customer from a Class I renewable energy source or a hydropower  
287 facility that has a nameplate capacity rating of two megawatts or less.  
288 The electric distribution company providing electric distribution  
289 services to such a customer shall make such interconnections necessary  
290 to accomplish such purpose. An electric distribution company, at the  
291 request of any residential customer served by such company and if  
292 necessary to implement the provisions of this section, shall provide for  
293 the installation of metering equipment that (1) measures electricity  
294 consumed by such customer from the facilities of the electric  
295 distribution company, (2) deducts from the measurement the amount  
296 of electricity produced by the customer and not consumed by the  
297 customer, and (3) registers, for each billing period, the net amount of  
298 electricity either (A) consumed and produced by the customer, or (B)  
299 the net amount of electricity produced by the customer. If, in a given  
300 monthly billing period, a customer-generator supplies more electricity  
301 to the electric distribution system than the electric distribution  
302 company or electric supplier delivers to the customer-generator, the  
303 electric distribution company or electric supplier shall credit the  
304 customer-generator for the excess by reducing the customer-  
305 generator's bill for the next monthly billing period to compensate for  
306 the excess electricity from the customer-generator in the previous  
307 billing period at a rate of one kilowatt-hour for one kilowatt-hour  
308 produced. The electric distribution company or electric supplier shall  
309 carry over the credits earned from monthly billing period to monthly  
310 billing period, and the credits shall accumulate until the end of the  
311 annualized period. At the end of each annualized period, the electric  
312 distribution company or electric supplier shall compensate the  
313 customer-generator for any excess kilowatt-hours generated, at the  
314 avoided cost of wholesale power. A customer who generates electricity  
315 from a generating unit with a nameplate capacity of more than ten

316 kilowatts of electricity pursuant to the provisions of this section shall  
317 be assessed for the competitive transition assessment, pursuant to  
318 section 16-245g and the systems benefits charge, pursuant to section  
319 16-245l, based on the amount of electricity consumed by the customer  
320 from the facilities of the electric distribution company without netting  
321 any electricity produced by the customer. For purposes of this section,  
322 "residential customer" means a customer of a single-family dwelling or  
323 multifamily dwelling consisting of two to four units.

324 (b) A local governmental authority owning or operating a Class I  
325 renewable energy source with a nameplate capacity rating of two  
326 megawatts or less may designate one or more beneficial government  
327 accounts as the recipient of monthly and annual credits. For purposes  
328 of this subsection, (1) "local governmental authority" means a city,  
329 town, borough, municipal corporation, public housing authority,  
330 school district or special district; and (2) "beneficial government  
331 account" means an electricity billing account that is: (A) The  
332 responsibility of the local governmental authority, (B) metered  
333 separately from the load served by the Class I renewable facility, and  
334 (C) within the same distribution company service territory as the Class  
335 I renewable facility.

336 (c) A religious, educational or charitable organization exempt from  
337 taxation under Section 501(c)(3) of the Internal Revenue Code of 1986,  
338 or any subsequent corresponding internal revenue code of the United  
339 States, as amended from time to time, owning or operating a Class I  
340 renewable energy facility with a nameplate capacity rating of two  
341 megawatts or less may designate one or more beneficial member  
342 accounts as the recipient of monthly and annual credits. A beneficial  
343 member account shall be a member in good standing of the Section  
344 501(c)(3) organization who resides or owns a place of business within  
345 the same electric distribution company service territory as the Class I  
346 renewable facility.

347 (d) The monthly and annual credits under subsections (b) and (c) of  
348 this section shall be denominated in dollars and shall be applied

349 irrespective of whether the beneficial account is in the same tariff  
350 classification as the metered load of the customer generator site. The  
351 electricity produced from the Class I renewable facility shall be netted  
352 first against on-site electricity consumption and then against the  
353 metered load of beneficial accounts based on a percentage allocation  
354 specified by the customer generator. At least sixty days before the  
355 Class I renewable facility becoming operational, the customer  
356 generator shall notify the electric distribution company, in writing, of  
357 designated beneficial accounts. The customer generator may elect to  
358 change a beneficial account no more than once annually by providing  
359 the electric distribution company with sixty days' written notice of  
360 such change. Class I renewable facilities eligible for the net metering  
361 arrangement under this section shall be subject to generally applicable  
362 interconnection standards but shall not be restricted in design or  
363 operation to the usage of the metered load served by the Class I  
364 renewable facility. Class I renewable facilities eligible for the net  
365 metering arrangement pursuant to this section shall be eligible to earn  
366 solar renewable energy credits pursuant to section 2 of this act or other  
367 incentives generally available to such facilities.

368 (e) The Renewable Energy Investment Fund shall make available up  
369 to \_\_\_ million dollars of the municipal renewable energy and efficient  
370 energy grant account for the purpose of grants-in-aid to local  
371 governmental authorities and tax exempt organizations consistent  
372 with the purposes of this section. Nothing in this section shall preclude  
373 community solar facilities from eligibility for funding under other  
374 programs administered by the Renewable Energy Investment Fund for  
375 which the project would otherwise qualify.

376 Sec. 7. (NEW) (*Effective from passage*) (a) Each electric distribution  
377 company shall, not later than July 1, 2010, file with the Department of  
378 Public Utility Control for its approval a tariff for production-based  
379 payments to owners or operators of Class I solar renewable energy  
380 source projects that are not less than two megawatts and connected  
381 directly to the distribution system of an electric distribution company.

382 (b) Such tariffs shall provide production-based payments for a  
383 period of not less than twenty years from the in-service date of the  
384 Class I solar renewable energy source project at a price that is, at the  
385 determination of the project owner, (1) not more than the total of the  
386 comparable wholesale market price for generation, calculated as the  
387 average of the hourly and day-ahead locational marginal price over the  
388 most recent twenty-four-month period in the applicable NE-ISO load  
389 zone, plus eleven cents per kilowatt hour; (2) the NE-ISO's real-time  
390 locational marginal pricing rate, adjusted for losses, for the respective  
391 zone in the NE-ISO electric power pool, plus eleven cents per kilowatt  
392 hour; or (3) not more than the total of the comparable wholesale  
393 market price for energy and capacity plus the electric distribution  
394 company's full avoided costs of providing standard offer and  
395 distribution service. For purposes of this subsection, the department  
396 shall determine the distribution company's avoided costs or establish a  
397 mechanism to establish the avoided costs on a case-by-case basis. The  
398 full avoided costs shall include, but not be limited to: (A) Federally  
399 mandated congestion charges; (B) reactive power and other ancillary  
400 services; (C) environmental compliance; (D) hedge value; (E) electrical  
401 loss savings; (F) deferral or avoidance of distribution system  
402 investment; (G) reduced frequency and duration of distribution system  
403 outages; and (H) ongoing distribution system maintenance. For  
404 purposes of this subsection, the department's determination of the  
405 comparable wholesale market price for generation shall be based upon  
406 a reasonable estimate.

407 (c) Such tariffs shall include a per project eligibility cap of seven and  
408 one-half megawatts and an aggregate eligibility cap of fifty megawatts,  
409 apportioned among each electric distribution company in proportion  
410 to distribution load.

411 (d) The cost of such tariff payments shall be eligible for inclusion in  
412 the adjustment to the transitional standard offer as provided in section  
413 16-243h of the general statutes, as amended by this act, and any  
414 subsequent rates for standard service, provided such payments are for  
415 projects operational on or after the effective date of this section.

416 (e) Electric distribution companies may construct, own and operate  
 417 solar electric generating facilities up to one-third of their proportional  
 418 share of the total cap amounts specified under subsection (c) of this  
 419 section. The department shall authorize the electric distribution  
 420 company to recover in rates its costs to construct, own and operate  
 421 solar electric generating facilities, including a reasonable return on its  
 422 investment, if such approval would result in the lowest reasonable cost  
 423 of meeting the solar energy requirements pursuant to subsection (c) of  
 424 this section and that such investment will not restrict competition or  
 425 restrict growth in the state's solar energy industry or unfairly employ  
 426 in a manner which would restrict competition in the market for solar  
 427 energy systems any financial, marketing, distributing or generating  
 428 advantage that the electric distribution company may exercise as a  
 429 result of its authority to operate as a public service company.

430 (f) The amount of renewable energy produced from Class I  
 431 renewable energy sources receiving tariff payments or included in  
 432 utility rates under this section shall be applied to reduce the electric  
 433 distribution company's Class I renewable energy source portfolio  
 434 standard. On or before September 1, 2011, the Department of Public  
 435 Utility Control, in consultation with the Office of Consumer Counsel  
 436 and the Renewable Energy Investments Advisory Council, shall study  
 437 the operation of such solar renewable energy tariffs and shall report, in  
 438 accordance with the provisions of section 11-4a of the general statutes,  
 439 its findings and recommendations to the joint standing committee of  
 440 the General Assembly having cognizance of matters relating to energy.

This act shall take effect as follows and shall amend the following sections:		
Section 1	<i>from passage</i>	New section
Sec. 2	<i>from passage</i>	New section
Sec. 3	<i>from passage</i>	New section
Sec. 4	<i>July 1, 2009</i>	New section
Sec. 5	<i>from passage</i>	New section
Sec. 6	<i>from passage</i>	16-243h
Sec. 7	<i>from passage</i>	New section

*ET*      *Joint Favorable Subst.*

The following fiscal impact statement and bill analysis are prepared for the benefit of members of the General Assembly, solely for the purpose of information, summarization, and explanation, and do not represent the intent of the General Assembly or either House thereof for any purpose:

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### **OFA Fiscal Note**

#### **State Impact:**

<b>Agency Affected</b>	<b>Impact</b>
Renewable Energy Investments Fund (Clean Energy Fund)	CT Clean Energy Fund - Cost
Treasurer, Debt Serv.	GF - See Below

Note: GF=General Fund

#### **Municipal Impact:** None

#### **Explanation**

This bill requires the Clean Energy Fund to conduct a feasibility study by July 1, 2010 of placing solar photovoltaic (PV) systems on certain state facilities. The Clean Energy Fund will have to hire consultants to assist with this study, resulting in a one-time cost of approximately \$150,000 to the fund in FY 10.

The bill authorizes \$150 million in General Obligation (GO) bonds for the placement of PV systems in certain state facilities. The total General Fund debt service cost for principal and interest payments on this amount over 20 years assuming a 5.0% interest rate is \$228.75 million. The first year that the state will experience costs associated with the bonds depends on when they are allocated through the State Bond Commission and when the funds are expended.

#### **The Out Years**

The General Fund debt service cost continues for the 20 year life of the bonds.

**OLR Bill Analysis****sHB 6635*****AN ACT CONCERNING SOLAR POWER.*****SUMMARY:**

This bill requires the Clean Energy Fund to establish a residential solar photovoltaic (PV) incentive program and sets the rules for this program. It requires that this program result in at least 35 megawatts of new residential solar PV installations by December 31, 2021 (a megawatt is the amount of power used by 750 to 1,000 homes). The bill requires that the program be funded by the existing renewable energy surcharge on electric bills.

The bill requires each electric company to file, by July 1, 2010, a tariff with the Department of Public Utility Control (DPUC) for its approval, for production-based payments to owners or operators of large solar projects. The bill allows an electric company to build solar projects under this provision under certain circumstances (although it does not amend CGS § 16-244e, which generally bars the companies from owning power plants or other generation resources).

The bill requires the electric companies to seek to enter into long-term contracts to buy the power produced by solar generating projects. The companies must seek contracts from large nonresidential PV systems and from smaller systems, which can be owned by nonresidential or residential customers. It appears that the latter systems can include solar electric technologies beyond PV systems. All contracts are subject to DPUC approval. The bill entitles the smaller eligible systems to receive a price equal to the highest accepted bid price in the most recent large system solicitation, plus an additional incentive of up to 10%.

The bill requires the Clean Energy Fund, in consultation with the

Department of Public Works (DPW), to conduct a feasibility study by July 1, 2010, of placing PV systems on certain state facilities. It requires DPW, in consultation with the fund, to issue one or more requests for proposals for the deployment of these systems on these facilities. The bill authorizes \$150 million in bonding for this program. The bonds are subject to standard statutory issuance and repayment provisions.

By law, electric companies and competitive electric suppliers must provide a billing credit to their customers who generate power from class I resources such as solar or wind power or from certain hydropower facilities. The bill allows these “net metering” customers that are local governments or educational, religious, or nonprofit organizations to transfer the credit to related customers.

EFFECTIVE DATE: July 1, 2009, for the bond authorization; upon passage, for the remaining provisions.

#### **RESIDENTIAL PV PROGRAM**

Under the bill, the Clean Energy Fund must offer direct incentives for the purchase or lease of qualifying residential PV systems that reduce their costs based on their performance. The incentive can be paid out on either a per kilowatt-hour basis or as a one-time upfront incentive based on expected system performance. The board that advises Connecticut Innovations, Inc. must consider solar system characteristics, such as operational efficiency, size, location, shading, and orientation, when determining the type of incentive.

By January 1, 2010, the fund must develop a proposed schedule for offering the incentives over the duration of the program. The schedule must (1) provide for at least eight “blocks” and associated solar capacity and incentive levels; (2) provide incentives that decline over time to help foster the development of a state-based solar industry; (3) automatically move to the next block once the fund has committed the resources for a block; and (4) provide comparable incentives to buy or lease qualifying systems. The fund must determine whether to establish a uniform statewide incentive schedule or separate incentive

schedules for each company's service territory. The board must retain a consultant with expertise in solar energy program design to help develop the incentive schedules. The fund must hold public hearings on the proposed schedule at three or more locations in the state and summarize the comments and its responses to them in the final schedule.

The fund must establish and periodically update eligibility criteria, including requirements related to (1) which customers may participate, (2) equipment sizing and technical specifications, (3) installation standards, (4) energy efficiency conditions, (5) equipment warranties, (6) performance, and (7) relocation of equipment. The criteria cannot unreasonably restrict the host's ability to designate an installer or other third-party developer, system owner, or installer to receive the incentive. Any unclaimed incentives must go back to the current block of incentives.

The fund must establish procedures to provide reasonable assurance that rebate reservations are made and incentives are paid out only to qualifying systems demonstrating a high likelihood of proper installation and operation. The fund must establish a dispute resolution process. It may establish (1) nonrefundable application fees or performance bond requirements, (2) performance milestones, (3) deadlines for project completion and relinquishment of position in incentive queue, or (4) post-installation adjustment or denial of performance-based incentives.

The fund must post the up-to-date status of the amount of incentives and solar capacity remaining in the current block on its web site.

## **ELECTRIC COMPANY TARIFFS**

The bill requires each electric company, by July 1, 2010, to file with DPUC for its approval, a tariff for production-based payments to owners or operators of grid-connected solar projects that are 2 megawatts or larger.

The tariffs must provide production-based payments for at least 20 years from the project's in-service date. Under the tariff, the owner can choose to receive a price that is (1) not more than the total of the comparable wholesale market price for generation, calculated over the most recent 24-month period plus 11 cents per kilowatt hour; (2) the real-time locational marginal pricing rate adjusted for losses (i.e., the spot market price) plus 11 cents per kilowatt hour; or (3) not more than the total of the comparable wholesale market price for energy and capacity plus the electric company's full avoided costs of providing standard offer and distribution service. The full avoided costs includes various annually charges, e.g., those associated with congestion on the transmission system. The tariffs must include a per project eligibility cap of 7.5 megawatts and an aggregate eligibility cap of 50 megawatts, apportioned among each electric company in proportion to its distribution load. The cost of the tariff can be recovered through rates charged for standard service (the service electric companies provide to small- and medium-sized customers who have not chosen a competitive supplier), so long as the payments are for new projects.

Electric companies may construct, own, and operate solar electric generating facilities up to one-third of their proportional share of the total cap amounts. DPUC must authorize the company to recover in rates its costs to construct, own, and operate the facilities, including a reasonable return on its investment, if (1) this would result in the lowest reasonable cost of meeting the bill's requirements and (2) the investment would not restrict competition or growth in the state's solar energy industry or rely on an unfair advantage of the company as a utility.

The amount of renewable energy produced from Class I renewable energy sources receiving tariff payments or included in utility rates counts against the renewable portfolio standard, which requires electric companies to get part of their power from renewable resources. By September 1, 2011, DPUC, in consultation with the Office of Consumer Counsel and the Renewable Energy Investments Advisory Council, must study the operation of the tariffs and report its findings

and recommendations to the Energy and Technology Committee.

## **LONG TERM CONTRACTS**

### ***Power from Large Systems***

By law, electric companies must develop, for DPUC approval, plans for procuring power and other resources such as savings from efficiency programs. Under the bill, notwithstanding any previously approved plan, starting on July 1, 2010 and for the next five years, each company must solicit proposals for long term contracts with large nonresidential PV generators. For these purposes, "nonresidential" includes all rate classes other than single-family homes and individual apartments qualifying for residential electric service.

The solicitations must be for the purchase of renewable energy credits (RECs) produced by eligible projects for at least 15 years. (Owners of renewable generation facilities can sell the power they produce on the wholesale electric market as "green power" or they can sell the RECs associated with this power separately from the power.) To be eligible, the contract must be with the owner or developer of a nonresidential solar PV project that is less than 2 MW in size, located on the customer side of the electric meter, and connected to the company's grid. On or before July 1, 2010, an electric company is not required to consider or enter into proposed long-term REC contracts that exceed \$650 per megawatt hour (\$0.65 per kilowatt-hour) in the initial year of the procurement period, declining by 7% annually.

The electric company may solicit proposals for a combination of renewable energy and associated RECs. The aggregate procurement of RECs under these provisions must be at least 3,191,250. The production of a megawatt hour of electricity from a solar energy source first placed in service on or after the bill's passage creates one solar REC. The obligation to purchase the RECs must be apportioned to each electric company based on its respective share of the load in the state at the start of the procurement period, as determined by DPUC.

If the company receives reasonable proposals, it must file with

DPUC for its approval, one or more long-term power purchase contracts with eligible projects. An electric company may use the RECs it procures through long-term contracting towards its obligations under the renewable portfolio standard. The bill does not preclude the resale or other disposition of energy or associated RECs the company purchases, so long as it nets the cost of payments made to projects under the long-term contracts against the proceeds of the sale of energy or RECs. The difference must be credited or charged to the company's customers through a uniform, fully-reconciling factor in distribution rates, subject to review and approval by DPUC.

### ***Power from Small- and Medium-Sized Systems***

The bill requires each electric company, within 180 days of the bill's passage, to propose a solar solicitation plan that includes a timetable and methodology for soliciting proposals for long-term solar RECs or energy contracts. The plan is subject to DPUC review and approval. Contracts comprising at least 25% of the company's obligation must be submitted for DPUC approval by January 1, 2011, and at least 75% of the obligation by July 1, 2013. However, the bill does not appear to specify any obligations as to the amount of power that must be contracted for under these provisions.

There must be separate procurement processes for nonresidential systems between 10 kilowatts (KW) and 50 KW and for 51 KW to 2 MW. (A kilowatt is the amount of power used by 10 100-watt lightbulbs. A megawatt is 1,000 KW.) The procurements must be open to all customer classes, subject to cost-effectiveness consideration. DPUC must give preference to competitive bidding for resources of more than 50 KW, unless it determines that another methodology is in the best interests of the company's customers and the development of a competitive and self-sustaining solar market. Smaller systems are eligible to receive a standard REC price equal to the highest accepted bid price in the most recent large system solicitation, plus an additional incentive of up to 10% as DPUC considers necessary to elicit proposals from this market segment.

The bill requires each electric company to execute its approved solicitation plan. It requires the company to submit to DPUC, for its review and approval, the company's preferred procurement plan comprised of any proposed contracts with independent solar developers or electric company utility affiliates and, where applicable, electric company proposals to develop solar projects as a rate-based investment. The bill implies that electric companies can build and operate solar projects under these provisions. The DPUC's administrative costs in reviewing the company's procurement plan must be recovered in rates.

The bill allows DPUC to retain an independent auditor with expertise in the area of energy procurement. The auditor must be unaffiliated with the electric company or its affiliates and may not, directly or indirectly, have benefited from employment or contracts with them in the preceding five years except as an independent auditor. The auditor may not participate in or advise the electric company with respect to any decisions in the bid solicitation or bid evaluation process.

If applicable, the auditor must audit of the electric company's bid solicitation and evaluation process to ensure that it meets the standards the bill establishes for DPUC to approve a contract (see below). For purposes of the audit, the electric company must give the auditor immediate and continuing access to all documents and data it reviewed, used, or produced in its bid solicitation and evaluation process. The electric company must make all its personnel, agents, and contractors used in the bid solicitation and evaluation available for interview by the auditor. The electric company must conduct any additional modeling requested by the auditor to test the assumptions and results of the bid evaluation process. Within 60 days after the electric company's selection of solar resources, the auditor must file a report with DPUC containing his or her findings, specifically reporting any deficiencies.

DPUC must hold a hearing as part of a contested case to approve,

reject, or modify a company's application. DPUC may only approve the plan if it finds that (1) the company's solicitation and evaluation was the result of a fair, open, competitive, and transparent process; (2) approval of the plan would produce the lowest reasonable cost of solar energy or RECs; and (3) the plan satisfies other criteria established in the approved solicitation plan. Where the electric company has proposed to develop and rate-base, customer-sited solar facilities, DPUC must also determine that (1) the investment will not restrict competition or restrict growth in the state's solar energy industry and (2) the company will not unfairly use any financial, marketing, distributing, or generating advantage that it has as a utility in a way that would restrict competition in the market for solar energy systems.

The bill entitles the electric company to recover its reasonable costs of complying with its approved solar procurement plan. If DPUC authorizes the electric company to enter into contracts under these provisions, it must also provide for remuneration to the company equal to 4% of the annual payments under the contract to compensate the company for accepting the financial obligation of the long-term contract. DPUC may not consider this remuneration as a cost of procuring solar resources from unaffiliated developers for purposes of bid evaluation.

### **SOLAR GENERATION ON STATE FACILITIES**

The bill requires the Clean Energy Fund, in consultation with DPW, to complete July 1, 2010, a comprehensive solar feasibility survey by of facilities owned or operated by the state with a load of 50 kilowatts or more. (The Legislative Office Building has a load of approximately 700 kilowatts.) The survey must rank state facilities based on their technical feasibility to accommodate PV systems by considering such factors as (1) on-site energy consumption; (2) building orientation; (3) roof age and condition; (4) shading and the potential for obstruction to sunlight over the life of the solar system; (5) structural load capacity; (6) availability of ancillary facilities, such as parking lots, walkways or maintenance areas; (7) nonenergy related amenities; and (8) other factors that the fund considers relevant.

DPW, in consultation with the fund, must issue one or more requests for proposals (RFPs) for the deployment of PV systems at state facilities. The RFP must be structured to maximize the state's ability to secure incentives available from the federal government or other sources. DPW may seek the services of an entity to finance, design, construct, own, or maintain the PV system under a long-term services agreement. Any entity chosen to provide such services is not be considered a utility.

Any contract entered into between DPW and such an entity must require that the state retain title to any REC or other tradable green certificate created by the system over its life. The state must retain these credits.

### **NET METERING**

By law, electric companies and competitive electric suppliers must provide a billing credit to their customers who generate power from class I resources. In most cases, the credit is the customer's net production power multiplied by the company or supplier's retail rate.

The bill allows a local government or a religious, educational, or 501(c)(3) nonprofit organization owning or operating a Class I renewable energy source with a capacity of up to 2 megawatts to transfer its net metering credits. Local governments include school districts, special districts, and housing authorities in addition to towns, cities, and boroughs. These entities can transfer the credit to another of their accounts, so long as it is metered separately from the load served by the renewable facility and is served by the same electric company as the renewable facility. In the case of an organization, the credit can be transferred to an organization member who resides or has a place of business in the service territory of the electric company that serves the renewable facility.

The bill requires that the transferred credits be denominated in dollars and applied whether or not the receiving customer is in the same rate class as the generating customer. It requires that the power

produced from the facility first be netted against on-site electricity consumption and then against the load of the receiving customer based on a percentage allocation specified by the generating customer. At least 60 days before the facility becomes operational, the generating customer must notify its electric company, in writing, of who will receive the credits. The generating customer may change the receiving customer no more than once annually by providing the electric company with 60 days' written notice of the change. The facilities eligible for this arrangement are subject to generally applicable interconnection standards but may not be restricted in design or operation to the use of the metered load served by the facility. This means that the renewable facility can be designed to produce more power than its owner will use. The facilities may earn RECs under the long-term contracts described above or other incentives generally available to such facilities.

The bill requires the Clean Energy Fund to make an unspecified amount of money available to the municipal renewable energy and efficient energy grant account for the purpose of providing grants to local governments and tax-exempt organizations consistent with the purposes of these provisions. The bill does not preclude community solar facilities from eligibility for funding under other Clean Energy Fund programs for which they would otherwise qualify.

**COMMITTEE ACTION**

Energy and Technology Committee

Joint Favorable Substitute

Yea 19 Nay 2 (03/19/2009)