



Memo

To: Connecticut General Assembly – Energy & Technology Committee
From: Bryan Garcia, President & CEO, Connecticut Green Bank
Cc: Board of Directors of the Connecticut Green Bank, Dale Hedman, Brian Farnen, Matt Macunas and Selya Price
Date: January 1, 2017
Re: Progress report on the Connecticut Green Bank Residential Solar Investment Program

Overview

This memo provides an update on progress toward the goals of the Connecticut Green Bank (Green Bank) Residential Solar Investment Program (RSIP), most recently updated in Public Act No. 15-194¹, “An Act Concerning the Encouragement of Local Economic Development and Access to Residential Renewable Energy,” and Public Act No. 16-212², “An Act Concerning Administration of the Connecticut Green Bank, the Priority of the Benefit Assessments Lien under the Green Bank’s Commercial Sustainable Energy Program and the Green Bank’s Solar Home Renewable Energy Credit Program,” and first established in Section 106 of Public Act No. 11-80, “An Act Concerning the Establishment of the Department of Energy and Environmental Protection and Planning for Connecticut’s Energy Future”.

PA 15-194 specifies that on or before January 1, 2017, and every two years thereafter for the duration of the program, the Green Bank shall report to the joint standing committee of the General Assembly having cognizance of matters relating to energy on progress toward the goals identified in subsection (b), summarized as follows:

1. Support the deployment of not more than 300 MW of new residential solar photovoltaic (PV) installations located in Connecticut on or before December 31, 2022.
2. Not approve more than 100 MW of new qualifying residential solar PV between the date of passage of this act on July 2, 2015 and April 1, 2016.
3. The procurement and cost of such program shall be determined by the Green Bank in accordance with this section.

In addition to reporting on the above three goals, the Green Bank is providing additional updates on provisions of PA 15-194 and PA 16-212, including updates on municipal solar PV permitting improvements.

¹ PA 15-194: <https://www.cga.ct.gov/2015/act/pa/pdf/2015PA-00194-R00HB-06838-PA.pdf> (also see Appendix I, starting on page 8, for full text of bill).

² PA 16-212: <https://www.cga.ct.gov/2016/act/pa/pdf/2016PA-00212-R00SB-00366-PA.pdf> (also see Appendix II, starting on page 13, for full text of bill).

RSIP Progress

As of December 31, 2016, RSIP projects in approved or later development statuses³ totaled 20,458 projects or approximately 156 MW, just over half of the legislative target of 300 MW. Of the total, 5,755 projects or almost 46 MW were homeowner owned projects, incentivized with Expected Performance Based Buydowns (EPBBs) (i.e., one-time, upfront rebates), and 14,703 projects or 110 MW were third party owned projects, incentivized with Performance Based Incentives (PBIs) (i.e., incentives provided on a per kWh basis over six years for electricity produced through leases and power purchase agreements). PBIs represented 71% of approved capacity through Calendar Year (CY) 2016. While the EPBB and PBI are administered differently and over different time periods, they are, as required by statute, economically comparable on a net present value basis.

Between July 2, 2015 and April 1, 2016, 5632 projects or 43.8 MW were approved, less than 100 MW, as required by legislation.

Tables 1 and 2 below provide RSIP benefit and cost data since program inception, including projects approved from March 2012 through CY 2016. The fleet of 156 MW of RSIP projects is anticipated to produce 148 million kWh of electricity annually or 3.7 million MWh over the 25-year project lifetimes. Total job-years created are 10,053, of which 3,852 are direct and 6,202 are indirect and induced. Over 1.9 million tons of carbon dioxide emissions will be avoided over the project lifetimes.

Table 1. RSIP Benefits for Projects Approved CY 2012-2016

	# Projects	Capacity Deployed (kW STC)	Expected Annual Generation (kWh)	Expected Lifetime Generation (MWh)	Direct Jobs Created	Indirect and Induced Jobs Created	Total Jobs Created	Lifetime Tons CO2 Avoided
2012	801	5,619	5,341,101	133,528	158	254	412	69,234
2013	1,439	10,200	9,694,364	242,359	267	430	698	125,663
2014	4,534	33,666	31,997,798	799,945	865	1,393	2,258	414,771
2015	7,187	55,146	52,413,789	1,310,345	1,413	2,275	3,687	679,414
2016	6,497	51,270	48,729,920	1,218,248	1,149	1,850	2,999	631,662
TOTAL	20,458	155,900	148,176,972	3,704,424	3,852	6,202	10,053	1,920,744

As provided in Table 2, deployment and cost trends in CY 2016 include:

- 6,497 projects or over 51 MW were approved for incentives, broken out as 1,241 projects or 10.7 MW EPBB and 5,256 projects or 40.6 MW PBI, almost 80% PBI by capacity.
- Projects costs were \$3.49 per Watt, higher for EPBB projects at \$3.74/W and PBI projects at \$3.41/W.
- Incentives were \$0.34/W (or \$0.43/W for EPBB and \$0.31/W for PBI), representing 10% of system costs overall (or 11% for EPBB and 9% for PBI).

³ Projects in approved, in progress and completed statuses included, projects in submitted status excluded (incentive applications submitted but not yet approved).

Table 2. RSIP Cost Data for Projects Approved CY 2012-2016⁴

	# Projects	Capacity Deployed (kW STC)	Average System Size (kW STC)	Average System Cost (\$/W)	Average Non-Ratepayer Funds (\$/W)	Average Ratepayer Funds (Incentive) (\$/W)	Incentive as % of System Cost	Non-Ratepayer/Ratepayer Leverage Ratio
2012	801	5,619	7.0	\$4.69	\$3.06	\$1.63	35%	1.9
2013	1,439	10,200	7.1	\$4.23	\$2.98	\$1.25	30%	2.4
2014	4,534	33,666	7.4	\$4.01	\$3.05	\$0.96	24%	3.2
2015	7,187	55,146	7.7	\$3.63	\$3.17	\$0.46	13%	6.9
2016	6,497	51,270	7.9	\$3.49	\$3.15	\$0.34	10%	9.3
EPBB	1,241	10,664	8.6	\$3.74	\$3.32	\$0.43	11%	7.8
PBI	5,256	40,606	7.7	\$3.41	\$3.10	\$0.31	9%	9.9
TOTAL	20,458	155,900	7.6	\$3.74	\$3.12	\$0.62	17%	5.0

Table 2 illustrates that the ratio of non-ratepayer to ratepayer funds increased from almost 2 to 1 in 2012 to over 9 to 1 in 2016, reflecting increasingly efficient leveraging of public ratepayer funds to deploy higher levels of solar PV. In a recent evaluation of RSIP, “Cost-Effectiveness Assessment of the Residential Solar Investment Program,”⁵ the Cadmus Group validated the efficiency of the program in leveraging incentives to deploy greater amounts of solar PV over time. The study found the overall benefit to cost ratio for the program to be over 3 to 1, with the ratio increasing almost four-fold as incentives were reduced over the first seven steps of the program. RSIP incentives are provided in steps based on capacity blocks, with the program at step 10 as of December 31, 2016.⁶

Another point of reference with respect to program efficiency is the Zero Emissions Renewable Energy Credit Program (ZREC). RSIP incentives for approved Step 10 projects thus far average \$0.40/W for EPBB and \$0.24/W for PBI, which translate to ZREC-equivalent incentive levels of \$22/MWh and \$12/MWh, respectively. By comparison, the small ZREC incentive for solar PV systems in 2016 was \$103/MWh, over 4 times higher than the EPBB and over 8 times higher than the PBI.⁷

The following chart provides historical perspective on Connecticut’s residential solar PV market from 2004 through 2016, based on projects incentivized through the Green Bank and the Connecticut Clean Energy Fund (CEEF), the Green Bank’s predecessor organization. RSIP incentives have been reduced steeply as shown by the upper/green portion of the bars in the chart, while customer costs shown in the lower/grey portion of the bars have stayed roughly stable. It appears that a sustained, orderly transition of the residential solar PV market in Connecticut to one

⁴ Average system cost per Watt figures include all reported installed costs without including those projects where financing costs for some third party ownership installers are included as part of the system cost.

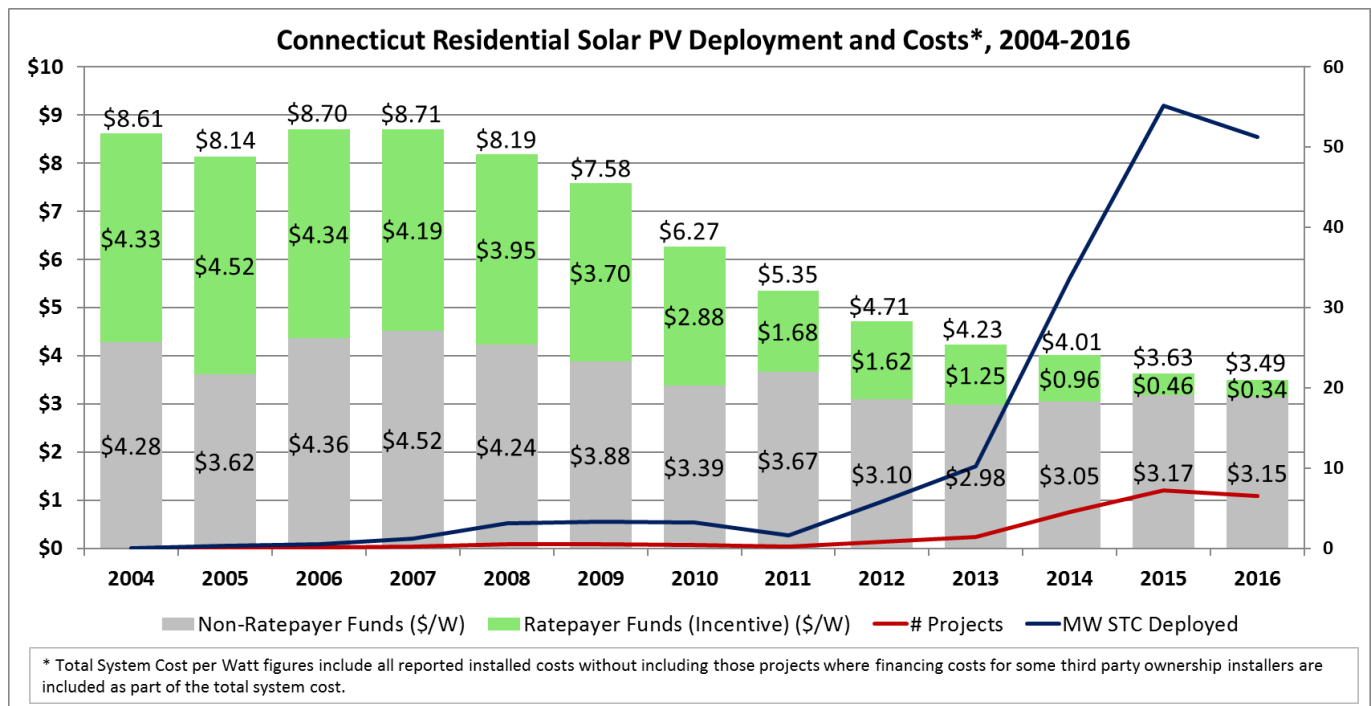
⁵ <http://ctgreenbank.com/about-us/studies-and-reports/>

⁶ RSIP step 10 provides an EPBB incentive of \$0.487/W for the first 10 kW and \$0.40/W for the next 10kW and a PBI incentive of \$0.039/kWh for six years for projects up to 20 kW. As of December 31, 2016, 12 MW of step 10 projects have been approved out of a 30 MW capacity block. Note that incentive calculations also consider electricity usage, system design and other factors. For more details, see <http://www.gosolarct.com/2-Savvy-Solar-Shopper/State-Solar-Incentives> and <http://www.energizect.com/your-home/solutions-list/residential-solar-investment-program>.

⁷ RSIP incentives are issued for residential solar PV projects up to 20 kW in size. Small ZRECs are for projects ≤ 100 kW, closest to the residential projects in terms of project economics, given generally lower per Watt costs, on average, as solar PV projects increase in size. Note that projects meeting the CT Green Bank criteria as a residential dwelling for the RSIP are not eligible for small ZRECs.

without RSIP incentives can happen when costs reach approximately \$3.00/W with the Federal Investment Tax Credit (ITC) in place, or roughly \$2.00/W not including the ITC.

Comparing 2004 to 2016, costs decreased 60% from \$8.61/W to \$3.49/W, while incentives decreased 92% from \$4.33/W to \$0.34/W, or a 12% incentive reduction on a compound annual basis. During the same period, compound annual growth in solar PV deployment was 115%, representing more than an annual doubling in capacity. Incentives were reduced more steeply with the inception of the Green Bank in 2011, a 27% year over year decrease from 2011 to 2016, or an 80% overall decrease from \$1.68/W in 2011 to \$0.34/W in 2016. At the same time, installed costs decreased 35% from \$5.35/W to \$3.49/W and annual deployment grew over 3000% from 1.6 MW to 51.3 MW. Incentives will continue to be reduced, based on federal, state and utility level developments, and deployment is expected to be stable with annual capacity additions similar to the last two years. The Green Bank estimates that RSIP will reach 300 MW sometime in 2019.



While reducing incentives, the Green Bank has supported transformation of the residential solar PV market through financing and strategic marketing/educational initiatives. The market continues to thrive despite incentive reductions and is making a “sustained and orderly transition” to one that will be viable without RSIP incentives in a few years. RSIP currently supports over 40 active installers and third party system owners, ranging from large, national companies to regional players and small, local businesses that provide for a strong, diverse state industry. The Green Bank has continued to collaborate with stakeholders such as Solar Connecticut (the state’s solar PV industry association), Renewable Energy and Efficiency Business Association (REEBA), the Connecticut Technical High School System, the state’s community college system, SmartPower, who is leading Solarize campaigns in communities throughout the state, and others on solar PV soft cost reduction, workforce development, marketing, and other key initiatives.

Progress in Implementing SHREC

Public Act 15-194 and Public Act 16-212 enabled implementation of the solar home renewable energy credit (SHREC) to continue the sustained and orderly transition of RSIP and Connecticut's residential solar PV market.

The Green Bank and the state's electric distribution companies (EDCs) together negotiated a master purchase agreement (MPA) for SHRECs pursuant to Public Act 15-194 and Public Act 16-212. The EDCs and Green Bank collaborated and agreed to submit a single unified MPA draft to PURA. This consensus draft was first submitted to PURA on May 12, 2016 with no open issues between the parties. PURA created docket number 16-05-07 and issued the docketed final decision on January 25, 2017, approving of the MPA submitted by the Green Bank and the EDCs.

As we write this report, one potential issue outstanding in regards to PURA decisions is with respect to REC aggregation as documented through PURA Docket Numbers 13-02-03RE01, 16-06-06, 16-06-07, 16-08-44 and 16-08-45. The Green Bank has worked at length to implement a functional SHREC policy that is pragmatic and procedurally streamlined. PURA has raised concerns over potential REC double counting associated with REC aggregation, which the Green Bank has addressed. Not allowing REC aggregation through the use of technology will cause the EDCs and the Green Bank to need to hire additional personnel and the cost of such personnel will be borne by Connecticut's ratepayers. Approving unit aggregations will allow the Green Bank to use an economically efficient process to create and sell RECs for the benefit of CT ratepayers and at a huge cost savings to the Green Bank and the ratepayers. The process will also provide more efficient REC transfers to purchasers, both EDCs and marketers, as unit aggregations batch RECs from multiple units instead of by a single unit. Similar aggregations have been approved by PURA in other dockets and there are a number of aggregations and approved processes approved in the NEPOOL GIS from the Massachusetts RPS Solar Carve Out for residential solar units that could be applied to support efficient and effective SHREC policy implementation.

The Green Bank understands PURA's concern that unit aggregations have the potential to make it more difficult to prevent RECs from a single unit being created (intentionally or unintentionally) by an unauthorized party. The Green Bank is willing and eager to provide PURA and the EDCs with documentation to address the concern about potential double-counting. The Green Bank has developed two state-of-the-art information technology systems and associated processes to (1) manage project data and documentation for each residential system, and (2) provide on-site revenue quality metering that feeds real-time production data from all residential systems into a centralized data platform. These robust systems and processes are effective tools for ensuring that the SHREC policy is implemented accurately and efficiently to support the Governor's and Legislature's intentions of advancing Connecticut's clean energy economy while supporting its energy, environmental, and economic development policies.

Municipal Solar PV Permitting Improvements

Reduction of soft costs continues to be a key strategy to support long term viability of the solar PV industry. PA 15-194 Sec. 3(f) required the Green Bank to host five residential solar PV system training seminars for municipal code officials by December 1, 2015. In partnership with the Office of Education and Data Management, the Green Bank held seven seminars around the state between October and December 2015. These seminars covered best practices and resources on solar PV permitting, as well as technical content on solar PV system equipment, design and National Electric Code requirements.

The dates, times and number of attendees at each training were:

- October 8, 2015, 9am-12pm, East Hartford, CT – 109 attendees
- October 14, 2015, 9am-12pm, Shelton, CT - 90 attendees
- October 26, 2015, 9am-12pm, Salem, CT - 52 attendees
- October 27, 2015, 6-9pm, Middletown, CT - 37 attendees
- October 28, 2015, 9am-12pm, Branford, CT - 51 attendees
- November 17, 2015, 12-3pm, Woodbury, CT - 40 attendees (approx.)
- December 1, 2015, 9:30-12:30pm, Norwalk, CT - 40 attendees (approx.)

In addition to the trainings, Section 3(b) of the legislation required all Connecticut municipalities to incorporate residential solar PV systems into their building permit process or utilize a solar PV permit application supplement. To support municipalities in meeting this requirement, the Green Bank built off work initiated under two U.S. Department of Energy SunShot Initiative grants to develop resources and provide consultation to municipalities on streamlining permit application processes for solar PV. Initiatives included: participating in a working group with the Office of the State Building Inspector, CT Building Officials Association, CT Council of Small Towns (COST), CT Conference of Municipalities (CCM) and representatives from the solar industry, presenting at the COST annual legislative update conference, as well as at seven Regional Councils of Government meetings (in addition to the trainings), updating the CT Rooftop Solar PV Permitting Guide (first released in May 2014), and providing direct consultation to over 50 Connecticut municipalities on solar PV permitting.

To date, the following best practices for solar PV permitting have been adopted by CT municipalities:

- 82% of CT building departments have 100% of their staff trained on solar PV, an additional 7% have at least half of their staff trained.
- 55 towns have a solar PV permit package with a comprehensive instructions sheet on all required documentation, department approvals, and process for obtaining a solar PV permit and inspection.
- 141 Municipalities require only one department visit to obtain a permit.
- 78 towns notify solar contractors by phone or email when their permit is approved.
- 13 towns offer same day permits and 35 towns process permits in 5 days or less.
- 98 towns provide an inspection window of one hour or less for solar PV installations.
- 24 municipalities have adopted an online permitting system and an additional 8 are in the process of going online.
- 4 Municipalities have a flat fee of \$200 or less for solar PV and one town waived permit fees for solar.⁸

Detailed documentation of each municipality in Connecticut's permit process for solar PV can be found at www.ctsolarscoreboard.com. All resources developed under the Green Bank's SunShot Initiative grant can be found at www.energizect.com/sunrisene. The Green Bank continues to meet with the Office of the State Building Inspector regularly on solar permitting issues, and provides ongoing support to municipalities interested in streamlining processes for solar PV installations.

⁸ Durham has \$204 permit fee cap, Killingworth \$200 flat fee, Westbrook \$150 flat fee, Haddam waived their permit fee.

Other RSIP Initiatives

In addition to the initiatives described above, the following Green Bank efforts enable continuing improvement of RSIP customer experience and increasing program efficiency:

- To better support consumers of solar PV, the Green Bank updated its GoSolarCT.com website to provide consumers with a trusted information source. Other consumer protection efforts include partnering with the Connecticut Department of Consumer Protection, Office of Consumer Counsel, and Attorney General's offices to address consumer complaints and coordinate trainings for contractors on licensing requirements, and serving on the Advisory Committee of the federally funded Sustainable Solar Education Project led by the Clean Energy States Alliance to develop resources on solar PV consumer protection and related topics.
- To give consumers more tools for being informed when going solar, GoSolarCT has partnered with EnergySage, the nation's leading online marketplace for solar, to connect customers with participating RSIP-eligible solar contractors who will compete for their business. Through this unique partnership, customers are able to compare solar quotes from multiple pre-screened contractors online.
- RSIP continues to implement process efficiencies for application approvals, having conducted two formal LEAN processes as well as implementing ongoing LEAN improvements. PowerClerk, the core software for the RSIP used by contractors and the program for determining incentives and processing applications and program documentation, is being upgraded to continue to increase program efficiencies.

Appendices

See next page for beginning of Appendices providing text of relevant legislation:

- Appendix I - PA 15-194 (starting on page 8)
- Appendix II - PA 16-212 (starting on page 13)

Appendix I

PA 15-194: <https://www.cga.ct.gov/2015/act/pa/pdf/2015PA-00194-R00HB-06838-PA.pdf>

House Bill No. 6838

Public Act No. 15-194

AN ACT CONCERNING THE ENCOURAGEMENT OF LOCAL ECONOMIC DEVELOPMENT AND ACCESS TO RESIDENTIAL RENEWABLE ENERGY.

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

Section 1. Section 16-245ff of the general statutes is repealed and the following is substituted in lieu thereof (*Effective from passage*):

(a) As used in this section and section 16-245gg, as amended by this act:

(1) "Performance-based incentive" means an incentive paid out on a per kilowatt-hour basis.

(2) "Expected performance-based buydown" means an incentive paid out as a one-time upfront incentive based on expected system performance.

(3) "Qualifying residential solar photovoltaic system" means a solar photovoltaic project that receives funding from the Connecticut Green Bank, is certified by the authority as a Class I renewable energy source, as defined in subsection (a) of section 16-1, emits no pollutants, is less than twenty kilowatts in size, is located on the customer-side of the revenue meter of one-to-four family homes and serves the distribution system of an electric distribution company.

(4) "Solar home renewable energy credit" means a Class I renewable energy credit created by the production of one megawatt hour of electricity generated by one or more qualifying residential solar photovoltaic systems with an approved incentive from the Connecticut Green Bank on or after January 1, 2015.

~~[(a)]~~ (b) The Connecticut Green Bank established pursuant to section 16-245n shall structure and implement a residential solar investment program established pursuant to this section, which shall ~~[result in a minimum of thirty]~~ support the deployment of not more than three hundred megawatts of new residential solar photovoltaic installations located in this state on or before (1) December 31, 2022, [the annual] or (2) the deployment of three hundred megawatts of residential solar photovoltaic installation, in the aggregate, whichever occurs sooner, provided the bank does not approve direct financial incentives under this section for more than one hundred megawatts of new qualifying residential solar photovoltaic systems, in the aggregate, between the date of passage of this act and April 1, 2016. The procurement and cost of [which] such program shall be determined by the bank [and the cost of which shall not exceed one-third of the total surcharge collected annually pursuant to said] in accordance with this section. [16-245n.]

~~[(b)]~~ (c) The Connecticut Green Bank shall offer direct financial incentives, in the form of performance-based incentives or expected performance-based buydowns, for the purchase or lease of qualifying residential solar photovoltaic systems until the earlier of the following: (1) December 31, 2022, or (2) the deployment of three hundred megawatts, in the aggregate, of residential solar photovoltaic installation. [For the purposes of this section, "performance-based

incentives" means incentives paid out on a per kilowatt-hour basis, and "expected performance-based buydowns" means incentives paid out as a one-time upfront incentive based on expected system performance.] The bank shall consider willingness to pay studies and verified solar photovoltaic system characteristics, such as operational efficiency, size, location, shading and orientation, when determining the type and amount of incentive. Notwithstanding the provisions of subdivision (1) of subsection (h) of section 16-244c, the amount of renewable energy produced from Class I renewable energy sources receiving tariff payments or included in utility rates under this section shall be applied to reduce the electric distribution company's Class I renewable energy source portfolio standard [. Customers who receive expected performance-based buydowns under this section shall not be eligible for a credit pursuant to section 16-243h] until the Public Utilities Regulatory Authority approves the master purchase agreement pursuant to subsection (e) of section 16-245gg, as amended by this act.

[(c)] (d) [Beginning with the comprehensive plan covering the period from July 1, 2011, to June 30, 2013, the] The Connecticut Green Bank shall develop and publish [in each such plan] on its Internet web site a proposed schedule for the offering of performance-based incentives or expected performance-based buydowns over the duration of any such solar incentive program. Such schedule shall: (1) Provide for a series of solar capacity blocks the combined total of which shall be a [minimum] maximum of [thirty] three hundred megawatts and projected incentive levels for each such block; (2) provide incentives that are sufficient to meet reasonable payback expectations of the residential consumer and provide such consumer with a competitive electricity price, taking into consideration the estimated cost of residential solar installations, the value of the energy offset by the system, the cost of financing the system, and the availability and estimated value of other incentives, including, but not limited to, federal and state tax incentives and revenues from the sale of solar home renewable energy credits; (3) provide incentives that decline over time and will foster the sustained, orderly development of a state-based solar industry; (4) automatically adjust to the next block once the board has issued reservations for financial incentives provided pursuant to this section from the board fully committing the target solar capacity and available incentives in that block; and (5) provide comparable economic incentives for the purchase or lease of qualifying residential solar photovoltaic systems. The [bank] Connecticut Green Bank may retain the services of a third-party entity with expertise in the area of solar energy program design to assist in the development of the incentive schedule or schedules. The Department of Energy and Environmental Protection shall review and approve such schedule. Nothing in this subsection shall restrict the [bank] Connecticut Green Bank from modifying the approved incentive schedule [before the issuance of its next comprehensive plan] to account for changes in federal or state law or regulation or developments in the solar market when such changes would affect the expected return on investment for a typical residential solar photovoltaic system by [twenty] ten per cent or more. Any such modification shall be subject to review and approval by the department.

[(d)] (e) The Connecticut Green Bank shall establish and periodically update program guidelines, including, but not limited to, requirements for systems and program participants related to: (1) Eligibility criteria; (2) standards for deployment of energy efficient equipment or building practices as a condition for receiving incentive funding; (3) procedures to provide reasonable assurance that such reservations are made and incentives are paid out only to qualifying residential solar photovoltaic systems demonstrating a high likelihood of being installed and operated as indicated in application materials; and (4) reasonable protocols for the measurement and verification of energy production.

[(e)] (f) The Connecticut Green Bank shall maintain on its Internet web site the schedule of incentives, solar capacity remaining in the current block and available funding and incentive estimators.

~~[(f)] (g)~~ Funding for the residential ~~[performance-based incentive program and expected performance-based buydowns shall be apportioned from]~~ solar investment program (1) may include up to one-third of the moneys collected annually under the surcharge specified in section 16-245n; [provided such apportionment shall not exceed one-third of the total surcharge collected annually,] (2) shall include all of the revenue from the solar home renewable energy credit program; and (3) may be supplemented by federal funding as may become available.

~~[(g)] (h)~~ The Connecticut Green Bank shall identify barriers to the development of a permanent Connecticut-based solar workforce and shall make provision for comprehensive training, accreditation and certification programs through institutions and individuals accredited and certified to national standards.

~~(i)~~ The Public Utilities Regulatory Authority shall provide an additional incentive of up to five per cent of the then-applicable incentive provided pursuant to this section for the use of major system components manufactured or assembled in Connecticut, and another additional incentive of up to five per cent of the then-applicable incentive provided pursuant to this section for the use of major system components manufactured or assembled in a distressed municipality, as defined in section 32-9p, or a targeted investment community, as defined in section 32-222.

~~[(h)] (j)~~ On or before January 1, ~~[2014]~~ 2017, and every two years thereafter for the duration of the program, the Connecticut Green Bank shall report to the joint standing committee of the General Assembly having cognizance of matters relating to energy on progress toward the goals identified in subsection ~~[(a)] (b)~~ of this section.

Sec. 2. Section 16-245gg of the general statutes is repealed and the following is substituted in lieu thereof (*Effective from passage*):

[The Public Utilities Regulatory Authority shall provide an additional incentive of up to five per cent of the then-applicable incentive provided pursuant to section 16-245ff for the use of major system components manufactured or assembled in Connecticut, and another additional incentive of up to five per cent of the then applicable incentive provided pursuant to section 16-245ff for the use of major system components manufactured or assembled in a distressed municipality, as defined in section 32-9p, or a targeted investment community, as defined in section 32-222.]

(a) Not later than one hundred eighty days after July 1, 2015, the Connecticut Green Bank shall negotiate and develop a master purchase agreement with each electric distribution company. Each such agreement shall have a term of fifteen years, and require the electric distribution company to purchase solar home renewable energy credits produced by qualifying residential solar photovoltaic systems. Each electric distribution company's obligation to purchase solar home renewable energy credits produced by qualifying residential solar photovoltaic systems begins on the date that the Public Utilities Regulatory Authority approves the master purchase agreement pursuant to subsection (e) of this section and expires on December 31, 2022.

(b) Solar home renewable energy credits shall be owned by the Connecticut Green Bank, until transferred to an electric distribution company pursuant to a master purchase agreement in accordance with subsection (a) of this section. A solar home renewable energy credit shall have an effective life covering the year of its production and the following calendar year. The obligation of the electric distribution companies to purchase solar home renewable energy credits pursuant to the master purchase agreement shall be apportioned to electric distribution companies based on their respective distribution system loads at the commencement of the master purchase agreement

period, as determined by the authority.

(c) Notwithstanding subdivision (1) of subsection (h) of section 16-244c, an electric distribution company may retire the solar home renewable energy credits it procures through the master purchase agreement to satisfy its obligation pursuant to section 16-245a or such company may resell such renewable energy credits, with the proceeds from resale to be netted against contract costs.

(d) To develop a master purchase agreement, the Connecticut Green Bank and an electric distribution company shall negotiate in good faith the final terms of the draft master purchase agreement. Thirty days after the date negotiations commence, either the Connecticut Green Bank or an electric distribution company may initiate a docket proceeding before the Public Utilities Regulatory Authority to resolve any outstanding issues pertaining to the master purchase agreement.

(e) Upon completion of negotiations on a master purchase agreement the Connecticut Green Bank and the electric distribution company shall not later than January 1, 2016, jointly file, with the authority, an application for approval of the agreement by the authority. No such master purchase agreement may become effective without approval of the authority. The authority shall hold a contested case, in accordance with the provisions of chapter 54, to approve, reject or modify an application for approval of the master purchase agreement.

(f) The purchase price of solar home renewable energy credits shall be determined by the Connecticut Green Bank, and such purchase price shall decline over time commensurate with the schedule of declining performance-based incentives and expected performance based buydowns. Such purchase price shall not exceed the lesser of either (1) the price of small zero-emission renewable energy credit projects for the preceding year, or (2) five dollars less per renewable energy credit than the alternative compliance payment pursuant to subsection (k) of section 16-245. Any customer of an electric distribution company that is eligible for the residential solar investment program shall not be eligible for small zero-emission renewable energy credits pursuant to section 16-244s.

(g) The electric distribution companies' costs associated with complying with this section shall be recoverable on a timely basis through a fully reconciling, nonbypassable rate component. Nothing in this section shall preclude the resale or other disposition of energy or associated renewable energy credits purchased by an electric distribution company, provided the electric distribution company shall net the cost of payments made to projects under the master purchase agreement against the proceeds of the sale of energy or renewable energy credits and the difference shall be credited or charged to electric distribution company customers through a reconciling component of electric rates as determined by the authority that is nonbypassable when switching electric suppliers.

(h) Each electric distribution company shall annually file with the authority an accounting of all costs and fees incurred by such electric distribution company while complying with the master purchase agreement.

(i) Any certificates issued by the New England Power Pool Generation Information System for Class I renewable energy credits produced by a qualifying residential solar photovoltaic system after the electric distribution company obligation, pursuant to subsections (a) and (b) of this section, to purchase solar home renewable energy credits from such system expires shall be transferred from the Connecticut Green Bank to the electric distribution company that services the area where such residential solar photovoltaic system is located. The electric distribution company shall either (1)

resell such credits into the New England Power Pool Generation Information System renewable energy credit market, to be used by any electric supplier or electric distribution company to meet the requirements of section 16-245a, so long as the revenues from such sale are credited to the electric distribution company's customers, or (2) retain such certificates to meet such company's requirements under section 16-245a. In considering whether to sell or retain such certificates, the company shall select the option that is in the best interest of such company's ratepayers.

Sec. 3. (NEW) (*Effective October 1, 2015*) (a) As used in this section:

(1) "Residential solar photovoltaic system" means equipment and devices that have the primary purpose of collecting solar energy and generating electricity by photovoltaic effect, have a nameplate capacity rating of twelve kilowatts or less, are installed on the roof of a single-family home and conform to the Connecticut State Building Code;

(2) "Municipality" means any town, city, borough, consolidated town and city or consolidated town and borough;

(3) "Electronic submission" means the act of a permit applicant who submits his or her completed application to a municipality for review by means of electronic mail, facsimile or electronic application available on a municipality's Internet web site.

(b) Not later than January 1, 2016, each municipality shall incorporate residential solar photovoltaic systems in its building permit application process or utilize a residential solar photovoltaic system permit application supplement. Each municipality may (1) develop and post on the municipality's Internet web site a permit application for the installation of a residential solar photovoltaic system, (2) allow for electronic submission of such application, and (3) exempt such system from payment of permit fees pursuant to subsection (c) of section 29-263 of the general statutes.

(c) Not more than thirty days after receipt of a permit application, a municipality shall inform such permit applicant whether such application is approved or disapproved.

(d) In conducting inspections of work completed pursuant to a residential solar photovoltaic system permit, a local building official may use additional resources as described in the International Residential Code portion of the Connecticut State Building Code. Inspections shall be performed pursuant to said International Residential Code portion of the Connecticut State Building Code.

(e) Nothing in this section shall authorize any person to cause any home or structure located within a historic district established pursuant to section 7-147b of the general statutes to be altered, as defined in section 7-147a of the general statutes.

(f) Not later than December 1, 2015, the Connecticut Green Bank, in consultation with the office of the State Building Inspector, shall plan, implement and host five residential solar photovoltaic system permit training seminars, in different municipalities for the purpose of providing guidance and information to municipal officials developing a permitting process in accordance with this section. The Connecticut Green Bank may consult with the Connecticut Conference of Municipalities, the Connecticut Council of Small Towns, the Renewable Energy and Efficiency Business Association and any other organization or representative of such organization in the planning and implementation of the training seminars.

Approved July 2, 2015

Appendix II

PA 16-212: <https://www.cga.ct.gov/2016/act/pa/pdf/2016PA-00212-R00SB-00366-PA.pdf>

Substitute Senate Bill No. 366

Public Act No. 16-212

AN ACT CONCERNING ADMINISTRATION OF THE CONNECTICUT GREEN BANK, THE PRIORITY OF THE BENEFIT ASSESSMENTS LIEN UNDER THE GREEN BANK'S COMMERCIAL SUSTAINABLE ENERGY PROGRAM AND THE GREEN BANK'S SOLAR HOME RENEWABLE ENERGY CREDIT PROGRAM.

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

Section 1. Subsection (d) of section 16-245n of the general statutes is repealed and the following is substituted in lieu thereof (*Effective from passage*):

(d) (1) (A) [There is established the Connecticut Green Bank, which shall be within Connecticut Innovations, Incorporated, for administrative purposes only.] The Connecticut Green Bank is hereby established and created as a body politic and corporate, constituting a public instrumentality and political subdivision of the state of Connecticut established and created for the performance of an essential public and governmental function. The Connecticut Green Bank shall not be construed to be a department, institution or agency of the state.

(B) The Connecticut Green Bank shall (i) develop separate programs to finance and otherwise support clean energy investment in residential, municipal, small business and larger commercial projects and such others as the Connecticut Green Bank may determine; (ii) support financing or other expenditures that promote investment in clean energy sources in accordance with a comprehensive plan developed by it to foster the growth, development and commercialization of clean energy sources and related enterprises; and (iii) stimulate demand for clean energy and the deployment of clean energy sources within the state that serve end-use customers in the state.

(C) The Clean Energy Finance and Investment Authority shall constitute a successor agency to Connecticut Innovations, Incorporated, for the purposes of administering the Clean Energy Fund in accordance with section 4-38d. The Connecticut Green Bank shall constitute a successor agency to the Clean Energy Finance and Investment Authority for purposes of administering the Clean Energy Fund in accordance with section 4-38d. The Connecticut Green Bank shall have all the privileges, immunities, tax exemptions and other exemptions of Connecticut Innovations, Incorporated, with respect to said fund. The Connecticut Green Bank shall be subject to suit and liability solely from the assets, revenues and resources of said bank and without recourse to the general funds, revenues, resources or other assets of Connecticut Innovations, Incorporated. The Connecticut Green Bank may provide financial assistance in the form of grants, loans, loan guarantees or debt and equity investments, as approved in accordance with written procedures adopted pursuant to section 1-121. The Connecticut Green Bank may assume or take title to any real property, convey or dispose of its assets and pledge its revenues to secure any borrowing, convey or dispose of its assets and pledge its revenues to secure any borrowing, for the purpose of developing, acquiring, constructing, refinancing, rehabilitating or improving its assets or supporting its programs, provided each such borrowing or mortgage, unless otherwise provided by the board or said bank, shall be a special obligation of said bank, which obligation may be in the form of bonds, bond anticipation notes or other obligations which evidence an indebtedness to the extent permitted under this

chapter to fund, refinance and refund the same and provide for the rights of holders thereof, and to secure the same by pledge of revenues, notes and mortgages of others, and which shall be payable solely from the assets, revenues and other resources of said bank and such bonds may be secured by a special capital reserve fund contributed to by the state. The Connecticut Green Bank shall have the purposes as provided by resolution of said bank's board of directors, which purposes shall be consistent with this section. No further action is required for the establishment of the Connecticut Green Bank, except the adoption of a resolution for said bank.

(D) In addition to, and not in limitation of, any other power of the Connecticut Green Bank set forth in this section or any other provision of the general statutes, said bank shall have and may exercise the following powers in furtherance of or in carrying out its purposes:

(i) To have perpetual succession as a body corporate and to adopt bylaws, policies and procedures for the regulation of its affairs and the conduct of its business;

(ii) To make and enter into all contracts and agreements that are necessary or incidental to the conduct of its business;

(iii) To invest in, acquire, lease, purchase, own, manage, hold, sell and dispose of real or personal property or any interest therein;

(iv) To borrow money or guarantee a return to investors or lenders;

(v) To hold patents, copyrights, trademarks, marketing rights, licenses or other rights in intellectual property;

(vi) To employ such assistants, agents and employees as may be necessary or desirable, who shall be exempt from the classified service and shall not be employees, as defined in subsection (b) of section 5-270; establish all necessary or appropriate personnel practices and policies, including those relating to hiring, promotion, compensation and retirement, and said bank shall not be an employer, as defined in subsection (a) of section 5-270; and engage consultants, attorneys, financial advisers, appraisers and other professional advisers as may be necessary or desirable;

(vii) To invest any funds not needed for immediate use or disbursement pursuant to investment policies adopted by said bank's board of directors;

(viii) To procure insurance against any loss or liability with respect to its property or business of such types, in such amounts and from such insurers as it deems desirable;

(ix) To enter into joint ventures and invest in, and participate with any person, including, without limitation, government entities and private corporations, in the formation, ownership, management and operation of business entities, including stock and nonstock corporations, limited liability companies and general or limited partnerships, formed to advance the purposes of said bank, provided members of the board of directors or officers or employees of said bank may serve as directors, members or officers of any such business entity, and such service shall be deemed to be in the discharge of the duties or within the scope of the employment of any such director, officer or employee, as the case may be, so long as such director, officer or employee does not receive any compensation or financial benefit as a result of serving in such role;

(x) To enter into a memorandum of understanding or other arrangements with Connecticut Innovations, Incorporated, with respect to the provision or sharing of space, office systems or staff

administrative support, on such terms as may be agreed to between said bank and Connecticut Innovations, Incorporated; and

(xi) To do all other acts and things necessary or convenient to carry out the purposes of said bank.

(E) (i) The Connecticut Green Bank may form one or more subsidiaries to carry out the purposes of said bank, as described in subparagraph (B) of subdivision (1) of this subsection, and may transfer to any such subsidiary any moneys and real or personal property of any kind or nature. Any subsidiary may be organized as a stock or nonstock corporation or a limited liability company. Each such subsidiary shall have and may exercise such powers of said bank, as set forth in the resolution of the board of directors of said bank prescribing the purposes for which such subsidiary is formed, and such other powers provided to it by law.

(ii) No such subsidiary of said bank shall be deemed a quasi-public agency for purposes of chapter 12 and no such subsidiary shall have all the privileges, immunities, tax exemptions and other exemptions of said bank. In no event shall any such subsidiary have the power to hire or otherwise retain employees. The governing documents of any such subsidiary shall provide for the dissolution of such subsidiary upon the completion of the purpose for which such subsidiary was formed. Each such subsidiary may sue and shall be subject to suit, provided its liability shall be limited solely to the assets, revenues and resources of the subsidiary and without recourse to the general funds, revenues, resources or any other assets of said bank. Each such subsidiary is authorized to assume or take title to property subject to any existing lien, encumbrance or mortgage and to mortgage, convey or dispose of its assets and pledge its revenues to secure any borrowing, provided each such borrowing or mortgage shall be a special obligation of the subsidiary, which obligation may be in the form of bonds, bond anticipation notes and other obligations, to fund and refund the same and provide for the rights of the holders thereof, and to secure the same by a pledge of revenues, notes and other assets and which shall be payable solely from the revenues, assets and other resources of the subsidiary. The Connecticut Green Bank may assign to a subsidiary any rights, moneys or other assets it has under any governmental program. No subsidiary of said bank shall borrow without the approval of the board of directors of said bank.

(iii) Each such subsidiary shall act through its board of directors or managing members, at least one-half of which shall be members of the board of directors of said bank or their designees or officers or employees of said bank.

(iv) The provisions of section 1-125 and this subsection shall apply to any officer, director, designee or employee appointed as a member, director or officer of any such subsidiary. Any such person so appointed shall not be personally liable for the debts, obligations or liabilities of any such subsidiary as provided in section 1-125. The subsidiary shall, and said bank may, save harmless and indemnify such officer, director, designee or employee as provided by section 1-125.

(v) The Connecticut Green Bank, or such subsidiary, may take such actions as are necessary to comply with the provisions of the Internal Revenue Code of 1986, or any subsequent corresponding internal revenue code of the United States, as amended from time to time, to qualify and maintain any such subsidiary as a corporation exempt from taxation under said code.

(vi) The Connecticut Green Bank may make loans to each such subsidiary from its assets and the proceeds of its bonds, notes and other obligations, provided the source and security for the repayment of such loans is derived from the assets, revenues and resources of the subsidiary.

(2) (A) The Connecticut Green Bank may seek to qualify as a Community Development Financial Institution under Section 4702 of the United States Code. If approved as a Community Development Financial Institution, said bank would be treated as a qualified community development entity for purposes of Section 45D and Section 1400N(m) of the Internal Revenue Code.

(B) Before making any loan, loan guarantee, or such other form of financing support or risk management for a clean energy project, the Connecticut Green Bank shall develop standards to govern the administration of said bank through rules, policies and procedures that specify borrower eligibility, terms and conditions of support, and other relevant criteria, standards or procedures.

(C) Funding sources specifically authorized include, but are not limited to:

(i) Funds repurposed from existing programs providing financing support for clean energy projects, provided any transfer of funds from such existing programs shall be subject to approval by the General Assembly and shall be used for expenses of financing, grants and loans;

(ii) Any federal funds that can be used for the purposes specified in subsection (c) of this section;

(iii) Charitable gifts, grants, contributions as well as loans from individuals, corporations, university endowments and philanthropic foundations;

(iv) Earnings and interest derived from financing support activities for clean energy projects backed by the Connecticut Green Bank;

(v) If and to the extent that the Connecticut Green Bank qualifies as a Community Development Financial Institution under Section 4702 of the United States Code, funding from the Community Development Financial Institution Fund administered by the United States Department of Treasury, as well as loans from and investments by depository institutions seeking to comply with their obligations under the United States Community Reinvestment Act of 1977; and

(vi) The Connecticut Green Bank may enter into contracts with private sources to raise capital. The average rate of return on such debt or equity shall be set by the board of directors of said bank.

(D) The Connecticut Green Bank may provide financing support under this subsection if said bank determines that the amount to be financed by said bank and other nonequity financing sources do not exceed eighty per cent of the cost to develop and deploy a clean energy project or up to one hundred per cent of the cost of financing an energy efficiency project.

(E) The Connecticut Green Bank may assess reasonable fees on its financing activities to cover its reasonable costs and expenses, as determined by the board.

(F) The Connecticut Green Bank shall make information regarding the rates, terms and conditions for all of its financing support transactions available to the public for inspection, including formal annual reviews by both a private auditor conducted pursuant to subdivision (2) of subsection (f) of this section and the Comptroller, and providing details to the public on the Internet, provided public disclosure shall be restricted for patentable ideas, trade secrets, proprietary or confidential commercial or financial information, disclosure of which may cause commercial harm to a nongovernmental recipient of such financing support and for other information exempt from public records disclosure pursuant to section 1-210.

(3) No director, officer, employee or agent of the Connecticut Green Bank, while acting within the scope of his or her authority, shall be subject to any personal liability resulting from exercising or carrying out any of the Connecticut Green Bank's purposes or powers.

Sec. 2. Subsection (e) of section 16-245n of the general statutes is repealed and the following is substituted in lieu thereof (*Effective from passage*):

(e) (1) The powers of the Connecticut Green Bank shall be vested in and exercised by a board of directors, which shall consist of eleven voting and two nonvoting members each with knowledge and expertise in matters related to the purpose and activities of said bank appointed as follows: The Treasurer or the Treasurer's designee, the Commissioner of Energy and Environmental Protection or the commissioner's designee and the Commissioner of Economic and Community Development or the commissioner's designee, each serving ex officio, one member who shall represent a residential or low-income group appointed by the speaker of the House of Representatives for a term of four years, one member who shall have experience in investment fund management appointed by the minority leader of the House of Representatives for a term of three years, one member who shall represent an environmental organization appointed by the president pro tempore of the Senate for a term of four years, and one member who shall have experience in the finance or deployment of renewable energy appointed by the minority leader of the Senate for a term of four years. Thereafter, such members of the General Assembly shall appoint members of the board to succeed such appointees whose terms expire and each member so appointed shall hold office for a period of four years from the first day of July in the year of his or her appointment. The Governor shall appoint four members to the board as follows: Two for two years who shall have experience in the finance of renewable energy; one for four years who shall be a representative of a labor organization; and one who shall have experience in research and development or manufacturing of clean energy. Thereafter, the Governor shall appoint members of the board to succeed such appointees whose terms expire and each member so appointed shall hold office for a period of four years from the first day of July in the year of his or her appointment. The president of the Connecticut Green Bank shall be elected by the members of the board. The president of the Connecticut Green Bank [and a member of the board of Connecticut Innovations, Incorporated, appointed by the chairperson of the corporation] shall serve on the board in an ex-officio, nonvoting capacity. The Governor shall appoint the chairperson of the board. The board shall elect from its members a vice chairperson and such other officers as it deems necessary and shall adopt such bylaws and procedures it deems necessary to carry out its functions. The board may establish committees and subcommittees as necessary to conduct its business.

(2) The members of the board of directors of the Connecticut Green Bank shall adopt written procedures, in accordance with the provisions of section 1-121, for: (A) Adopting an annual budget and plan of operations, including a requirement of board approval before the budget or plan may take effect; (B) hiring, dismissing, promoting and compensating employees of said bank, including an affirmative action policy and a requirement of board approval before a position may be created or a vacancy filled; (C) acquiring real and personal property and personal services, including a requirement of board approval for any nonbudgeted expenditure in excess of five thousand dollars; (D) contracting for financial, legal, bond underwriting and other professional services, including a requirement that said bank solicit proposals at least once every three years for each such service that it uses; (E) issuing and retiring bonds, bond anticipation notes and other obligations of said bank; (F) awarding loans, grants and other financial assistance, including eligibility criteria, the application process and the role played by said bank's staff and board of directors; and (G) the use of surplus funds to the extent authorized under this section or other provisions of the general statutes.

(3) No member of the board of directors of the Connecticut Green Bank shall be a trustee, director, partner or officer of any person, firm or corporation, or have a financial interest in a person, firm or corporation that participates in or otherwise receives support from programs developed, administered or otherwise supported by the Connecticut Green Bank. The holding of any such position as a trustee, director, partner or officer, or any financial interest by a member of the board of directors of the Connecticut Green Bank shall be deemed a conflict of interest, provided it shall not constitute a conflict of interest for a member of the board of directors of the Connecticut Green Bank to serve as a director, member or officer of a joint venture entered into by the Connecticut Green Bank pursuant to subsection (d) of this section.

Sec. 3. Subsection (h) of section 16-245n of the general statutes is repealed and the following is substituted in lieu thereof (*Effective from passage*):

[(h) (1) (A) Wherever the term "Clean Energy Finance and Investment Authority" is used in the following general statutes, the term "Connecticut Green Bank" shall be substituted in lieu thereof: 1-79, 1-120, 1-124, 1-125, 7-233z, 16-244c, 16-245m, 16-245aa, 16-245bb, 16-245ee, 16-245ff, 16-245hh, 16-245kk, 16-245ll, 16-245mm, 16a-40d to 16a-40g, inclusive, 16a-40l, 16a-40m, 22a-200c and 32-141.

(B) Wherever the term "authority" is used in the following general statutes, the term "bank" shall be substituted in lieu thereof: 16-245aa, 16-245ff, 16-245hh, 16-245kk, 16-245ll, 16-245mm and 16a-40e to 16a-40g, inclusive.

(2) Wherever the term "Clean Energy Finance and Investment Authority" is used in any public or special act of 2014, the term "Connecticut Green Bank" shall be substituted in lieu thereof.

(3) The Legislative Commissioners' Office shall, in codifying the provisions of this section, make such technical, grammatical and punctuation changes as are necessary to carry out the purposes of this section.]

(h) The state of Connecticut does hereby pledge to and agree with any person with whom the Connecticut Green Bank may enter into contracts pursuant to the provisions of this section that the state will not limit or alter the rights hereby vested in said bank until such contracts and the obligations thereunder are fully met and performed on the part of said bank, provided nothing herein contained shall preclude such limitation or alteration if adequate provision shall be made by law for the protection of such persons entering into contracts with said bank.

(i) The powers enumerated in this section shall be interpreted broadly to effectuate the purposes established in this section and shall not be construed as a limitation of powers.

(j) To the extent that the provisions of this section are inconsistent with the provisions of any general statute or special act or parts thereof, the provisions of this section shall be deemed controlling.

Sec. 4. Subsection (g) of section 16a-40g of the 2016 supplement to the general statutes is repealed and the following is substituted in lieu thereof (*Effective from passage*):

(g) Benefit assessments levied pursuant to this section and the interest, fees and any penalties thereon shall constitute a lien against the qualifying commercial real property on which they are made until they are paid. Such lien, or if the financing agreement provides that the benefit assessments shall be paid in installments then each installment payment, shall be collected in the

same manner as the property taxes of the participating municipality on real property, including, in the event of default or delinquency, with respect to any penalties, fees and remedies. Each such lien may be recorded and released in the manner provided for property tax liens and [, subject to the consent of existing mortgage holders,] shall take precedence over all other liens or encumbrances except a lien for taxes of the municipality on real property, which lien for taxes shall have priority over such benefit assessment lien, and provided that the precedence of such benefit assessment lien over any lien held by an existing mortgage holder shall be subject to the written consent of such existing mortgage holder. To the extent benefit assessments are paid in installments and any such installment is not paid when due, the benefit assessment lien may be foreclosed to the extent of any unpaid installment payments and any penalties, interest and fees related thereto. In the event such benefit assessment lien is foreclosed, such benefit assessment lien shall survive the judgment of foreclosure to the extent of any unpaid installment payments of the benefit assessment secured by such benefit assessment lien that were not the subject of such judgment.

Sec. 5. Subsections (a) to (d), inclusive, of section 16-245ff of the 2016 supplement to the general statutes are repealed and the following is substituted in lieu thereof (*Effective from passage*):

(a) As used in this section and section 16-245gg, as amended by this act:

(1) "Performance-based incentive" means an incentive paid out on a per kilowatt-hour basis.

(2) "Expected performance-based buydown" means an incentive paid out as a one-time upfront incentive based on expected system performance.

(3) "Qualifying residential solar photovoltaic system" means a solar photovoltaic project that receives funding from the Connecticut Green Bank, is certified by the authority as a Class I renewable energy source, as defined in subsection (a) of section 16-1, emits no pollutants, [is less than twenty kilowatts in size,] is located on the customer-side of the revenue meter of one-to-four family homes and serves the distribution system of an electric distribution company.

(4) "Solar home renewable energy credit" means a Class I renewable energy credit created by the production of one megawatt hour of electricity generated by one or more qualifying residential solar photovoltaic systems with an approved incentive from the Connecticut Green Bank on or after January 1, 2015.

(b) The Connecticut Green Bank, established pursuant to section 16-245n, as amended by this act, shall structure and implement a residential solar investment program established pursuant to this section [, which] that shall support the deployment of not more than three hundred megawatts of new residential solar photovoltaic installations located in this state on or before (1) December 31, 2022, or (2) the deployment of three hundred megawatts of residential solar photovoltaic installation, in the aggregate, whichever occurs sooner, provided the bank [does] shall not approve direct financial incentives under this section for more than one hundred megawatts of new qualifying residential solar photovoltaic systems, in the aggregate, between [the] July 2, 2015, and April 1, 2016. The procurement and cost of such program shall be determined by the bank in accordance with this section.

(c) The Connecticut Green Bank shall offer direct financial incentives, in the form of performance-based incentives or expected performance-based buydowns, for the purchase or lease of qualifying residential solar photovoltaic systems or power purchase agreement from such systems until the earlier of the following: (1) December 31, 2022, or (2) the deployment of three hundred megawatts,

in the aggregate, of residential solar photovoltaic installation. The bank shall consider willingness to pay studies and verified solar photovoltaic system characteristics, such as operational efficiency, size, location, shading and orientation, when determining the type and amount of incentive. Notwithstanding the provisions of subdivision (1) of subsection (h) of section 16-244c, the amount of renewable energy produced from Class I renewable energy sources receiving tariff payments or included in utility rates under this section shall be applied to reduce the electric distribution company's Class I renewable energy source portfolio standard until the Public Utilities Regulatory Authority approves the master purchase agreement pursuant to subsection (e) of section 16-245gg, as amended by this act.

(d) The Connecticut Green Bank shall develop and publish on its Internet web site a proposed schedule for the offering of performance based incentives or expected performance-based buydowns over the duration of any such solar incentive program. Any such direct financial incentives shall only apply to the first twenty kilowatts of direct current of the qualifying residential solar photovoltaic system. Such schedule shall: (1) Provide for a series of solar capacity blocks the combined total of which shall be a maximum of three hundred megawatts and projected incentive levels for each such block; (2) provide incentives that are sufficient to meet reasonable payback expectations of the residential consumer and provide such consumer with a competitive electricity price, taking into consideration the estimated cost of residential solar installations, the value of the energy offset by the system, the cost of financing the system, and the availability and estimated value of other incentives, including, but not limited to, federal and state tax incentives and revenues from the sale of solar home renewable energy credits; (3) provide incentives that decline over time and will foster the sustained, orderly development of a state-based solar industry; (4) automatically adjust to the next block once the board has issued reservations for financial incentives provided pursuant to this section from the board fully committing the target solar capacity and available incentives in that block; and (5) provide comparable economic incentives for the purchase or lease of qualifying residential solar photovoltaic systems or power purchase agreements from such systems. The Connecticut Green Bank may retain the services of a third-party entity with expertise in the area of solar energy program design to assist in the development of the incentive schedule or schedules. The Department of Energy and Environmental Protection shall review and approve such schedule. Nothing in this subsection shall restrict the Connecticut Green Bank from modifying the approved incentive schedule to account for changes in federal or state law or regulation or developments in the solar market when such changes would affect the expected return on investment for a typical residential solar photovoltaic system by ten per cent or more. Any such modification shall be subject to review and approval by the department.

Sec. 6. Section 16-245gg of the 2016 supplement to the general statutes is repealed and the following is substituted in lieu thereof (*Effective from passage*):

(a) Not later than [one hundred eighty days after July 1, 2015] July 1, 2016, the Connecticut Green Bank shall negotiate and develop [a] master purchase [agreement] agreements with each electric distribution company. Each such agreement shall [have a term of fifteen years, and] require the electric distribution company to purchase, annually, fifteen-year tranches of solar home renewable energy credits produced by qualifying residential solar photovoltaic systems. Each electric distribution company's annual obligation to purchase fifteen-year tranches of solar home renewable energy credits produced by qualifying residential solar photovoltaic systems begins on the date that the Public Utilities Regulatory Authority approves the master purchase agreement pursuant to subsection (e) of this section and the obligation to purchase additional fifteen-year tranches expires on December 31, 2022, or after the deployment of three hundred megawatts of residential solar photovoltaic installation, in the aggregate, whichever occurs earlier.

(b) Solar home renewable energy credits shall be owned by the Connecticut Green Bank, until transferred to an electric distribution company pursuant to a master purchase agreement in accordance with subsection (a) of this section. A solar home renewable energy credit shall have an effective life covering the year of its production and the following calendar year. The obligation of the electric distribution companies to purchase solar home renewable energy credits pursuant to the master purchase agreement shall be apportioned [to electric distribution companies based on their respective distribution system loads at the commencement of the master purchase agreement period, as determined by the authority] as follows: (1) In the service area of an electric distribution company that has a service area of not more than seventeen cities and towns, twenty per cent of the annual aggregate credits; and (2) in the service area of an electric distribution company that has a service area of eighteen or more cities and towns, eighty percent of the annual aggregate credits.

(c) Notwithstanding subdivision (1) of subsection (h) of section 16-244c, an electric distribution company may retire the solar home renewable energy credits it procures through the master purchase agreement to satisfy its obligation pursuant to section 16-245a or such company may resell such renewable energy credits, with the proceeds from resale to be netted against contract costs.

(d) To develop a master purchase agreement, the Connecticut Green Bank and an electric distribution company shall negotiate in good faith the final terms of the draft master purchase agreement. Thirty days after the date negotiations commence, either the Connecticut Green Bank or an electric distribution company may initiate a docket proceeding before the Public Utilities Regulatory Authority to resolve any outstanding issues pertaining to the master purchase agreement.

(e) Upon completion of negotiations on a master purchase agreement the Connecticut Green Bank and the electric distribution company shall, not later than January 1, [2016] 2017, and thereafter as applicable, jointly file, with the authority, an application for approval of the agreement by the authority. No such master purchase agreement may become effective without approval of the authority. The authority shall hold a contested case, in accordance with the provisions of chapter 54, to approve, reject or modify an application for approval of the master purchase agreement.

(f) The purchase price of solar home renewable energy credits shall be determined by the Connecticut Green Bank, and such purchase price shall decline over time commensurate with the schedule of declining performance-based incentives and expected performance-based buydowns. Such purchase price shall not exceed the lesser of either (1) the price of small zero-emission renewable energy credit projects for the preceding year, or (2) five dollars less per renewable energy credit than the alternative compliance payment pursuant to subsection (k) of section 16-245. [Any customer of an electric distribution company that is eligible for the residential solar investment program shall not be eligible for small zero-emission renewable energy credits pursuant to section 16-244s.] Any solar project located on a property that contains or will contain any residence of a customer of an electric distribution company that is determined to meet the Connecticut Green Bank criteria as a residential dwelling for the residential solar investment program shall not be eligible for small zero-emission renewable energy credits pursuant to sections 16-244r and 16-244s or for low-emission renewable energy credits pursuant to section 16-244t.

(g) The electric distribution companies' costs associated with complying with this section shall be recoverable on a timely basis through a fully reconciling, nonbypassable rate component. Nothing in this section shall preclude the resale or other disposition of energy or associated renewable energy credits purchased by an electric distribution company, provided the electric distribution company shall net the cost of payments made to projects under the master purchase agreement against the

proceeds of the sale of energy or renewable energy credits and the difference shall be credited or charged to electric distribution company customers through a reconciling component of electric rates as determined by the authority that is nonbypassable when switching electric suppliers.

(h) Each electric distribution company shall annually file with the authority an accounting of all costs and fees incurred by such electric distribution company while complying with the master purchase agreement.

(i) Any certificates issued by the New England Power Pool Generation Information System for Class I renewable energy credits produced by a qualifying residential solar photovoltaic system after the electric distribution company obligation, pursuant to subsections (a) and (b) of this section, to purchase solar home renewable energy credits from such system expires shall be transferred from the Connecticut Green Bank to the electric distribution [company that services the area where such residential solar photovoltaic system is located] companies as follows: (1) In the service area of an electric distribution company that has a service area of not more than seventeen cities and towns, twenty per cent of such certificates; and (2) in the service area of an electric distribution company that has a service area of eighteen or more cities and towns, eighty per cent of such certificates. The electric distribution company shall either [(1)] (A) resell such credits into the New England Power Pool Generation Information System renewable energy credit market, to be used by any electric supplier or electric distribution company to meet the requirements of section 16-245a, so long as the revenues from such sale are credited to the electric distribution company's customers, or [(2)] (B) retain such certificates to meet such company's requirements under section 16-245a. In considering whether to sell or retain such certificates, the company shall select the option that is in the best interest of such company's ratepayers.

Approved June 10, 2016