



OLR RESEARCH REPORT

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FUNDING OPTIONS FOR ON-SITE GENERATION AT PUBLIC SCHOOLS

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You asked for a description of possible funding sources for on-site electric generation for public schools.

SUMMARY

Possible funding sources include the zero- and low-emission renewable energy credit (ZREC and LREC) programs, under which electric companies must enter into long-term contracts with customers who install renewable on-site generation. Public schools are eligible to participate in these programs and at least one school submitted an application in the first round of the ZREC program.

The Clean Energy Finance and Investment Authority (CEFIA) has several programs that could support generation projects at schools, including its Clean Energy Communities and Combined Heat and Power (CHP) programs. CEFIA is also developing a renewable energy and efficient energy finance program, which should begin operating by November 2012.

PA 12-148 requires the Department of Energy and Environmental Protection (DEEP) to establish a grant and loan pilot program to support on-site electricity generation. The program will pay for the infrastructure needed to support the generation equipment but not for the equipment itself.

On-site generation equipment is generally not eligible for reimbursement under the school construction grant program if it is installed by itself, but may be eligible if the equipment is part of a new school or the expansion or renovation of an existing school.

As described in OLR Report [2012-R-0178](#), municipalities can also develop on-site renewable generation for their facilities, including schools, using performance contracting, under which a private party often provides the financing.

ZREC/LREC PROGRAMS

CGS § [16-244r](#) et seq. requires electric companies to enter into long-term (15 year) contracts with customers that install new qualifying renewable energy projects, under which the companies buy the renewable energy credits (RECs) the projects create. There are separate programs for zero- and low-emission projects (ZREC and LREC respectively). The production of a megawatt hour of electricity from an eligible renewable energy source placed in service on or after July 1, 2011 creates one REC under both programs.

Projects must be on the customer side of the meter, i.e., on the customer's premises. Projects that have received funding from CEFIA are ineligible for these programs. A person cannot apply to participate in both the ZREC and LREC programs for the same project. Further information is available at <http://www.ct.gov/deep/cwp/view.asp?a=4120&Q=503720>.

ZREC Program

To be eligible for the ZREC program, the project must use a zero-emission technology such as solar or wind power and have a generation capacity of 1,000 kilowatts (one megawatt) or less. The companies must conduct separate procurement processes for (1) systems up to 100 kilowatts (a typical residential system is 5 to 10 kilowatts), (2) systems greater than 100 and less than 250 kilowatts, and (3) systems between 250 and 1,000 kilowatts.

The companies' solicitation plans and contracts must be approved by the Public Utilities Regulatory Authority (PURA); PURA must give preference to competitive bidding for resources above 100 kilowatts, with bids ranked in order of their required REC price. There will be up to six award cycles, with an initial price cap of \$350 per REC. Systems up to 100 kilowatts are eligible to receive a REC price equal to the weighted

average accepted bid price in the most recent solicitation for systems of between 100 and 250 kilowatts, plus an additional 10%.

The companies must buy a total of \$ 8 million in RECs under this program in its first year of operation, increasing by \$8 million per year for the next three years. Any money not allocated in a given year may roll into the next year's available funds. After year four, PURA must review contracts entered into under the program. If the cost of the technologies included in the contracts has been reduced, the companies must seek to enter new contracts to extend the program for another two years, for a total of six years. The amount of program funding after year four depends on whether the costs have come down.

LREC Program

The law establishes a similar program for low-emission generation technologies. These are generation projects that are less than 2 megawatts in size and use renewable technologies that have emissions of no more than (1) 0.07 pounds per megawatt-hour of nitrogen oxides, (2) 0.10 pounds per megawatt-hour of carbon monoxide, (3) 0.02 pounds per megawatt-hour of volatile organic compounds, and (4) one grain of particulate matter per one hundred standard cubic feet. The initial price cap is \$200 per REC.

The companies can spend up to \$4 million in year one (2012), increasing by up to \$4 million per year for the next two years. After year three, PURA must review the contracts entered into under this program. If the cost of the technologies eligible for the contracts has been reduced, the companies must seek to enter new contracts during the following two years. The amount of funding after year three depends on whether the costs have come down.

CEFIA PROGRAMS

Clean Energy Communities Program

Municipalities can obtain renewable energy systems for their facilities, including schools, by participating in CEFIA's Clean Energy Communities Program. To become eligible a municipality must:

1. commit to the municipal energy efficiency pledge and reduce municipal building energy consumption 20% from baseline levels by 2018,

2. voluntarily purchase 20% of municipal buildings' energy use by 2018 from renewable sources, and
3. achieve milestones in support of energy efficiency or renewable energy.

Participating municipalities earn points as they achieve these milestones. For every 100 points earned under the renewable energy option, the municipality will earn a one kilowatt solar photovoltaic system or its equivalent in renewable generating capacity. Further information about the program is available at <http://www.ctcleanenergy.com/YourCommunity/CTCleanEnergyCommunities/Communities/tabid/82/Default.aspx>.

Combined Heat and Power Program

PA 11-80 requires CEFIA to establish a three-year pilot program to provide financial incentives for installing CHP systems with a generating capacity of less than 2 megawatts. The total amount of generation supported by the program may not exceed 50 megawatts and funding for individual projects is capped at \$450 per kilowatt. The program is open to institutional customers such as schools, as well as commercial and industrial customers for projects that have begun construction.

CEFIA issued its request for proposals (RFP) for the first round of the program in June 2012 with an application deadline of September 28, 2012. Funding for this round is \$2 million. The selected projects will be eligible for a grant, loan, or power purchase incentive to help finance the cost of CHP equipment for energy generating projects. The level of support for individual awards is not a fixed amount based on size or cost; rather it will vary based on the specific technology, efficiency, and economics of the installation. The intent of the program is to enable project owners to achieve a reasonable "payback" during the project's life, with a fair and reasonable return on investment, compared with purchasing the equivalent amount of power from a utility. Further information is available at <http://www.ctcleanenergy.com/YourBusinessorInstitution/CombinedHeatPowerCHPProjects/tabid/630/Default.aspx>.

Renewable Energy and Efficient Energy Finance Program

CGS § [16-245aa](#), as amended by PA 12-189, requires CEFIA to establish a renewable energy and efficient energy finance program. It must make grants, investments, loans, or other forms of financial assistance under the program to projects to buy and install (1) renewable

energy sources, including solar energy, geothermal energy, and fuel cells or other energy-efficient hydrogen-fueled energy, or (2) energy-efficient generation sources, including CHP units that are at least 65% efficient. CEFIA must give priority to applications for projects that use major system components manufactured or assembled in Connecticut. The financial assistance must be sufficient to make the cost of purchasing, installing, and operating the renewable energy or energy-efficient generation source competitive with the grid's or other end users' current electricity expenses.

By November 1, 2012, CEFIA must develop an application for this financial assistance and begin accepting applications. Applications must include a complete description of the proposed renewable energy or energy-efficient generation source.

MICRO-GRID GRANT AND LOAN PROGRAM

PA 12-148 requires DEEP to establish a microgrid grant and loan pilot program to support up to 65 megawatts of onsite electricity generation (the amount of power needed to serve approximately 50,000 homes) at critical facilities. While schools are not among the facilities that are specifically made eligible for the program, they often serve as public shelters, which are eligible. In addition, DEEP can designate other facilities as being eligible for the program. Under the act, a “microgrid” is a group of interconnected electricity users and generators within clearly defined electrical boundaries that (1) acts as a single controllable entity in respect to the larger electrical grid and (2) can operate as either a part of the larger grid or independent of it, in “island mode”

The pilot program is open to municipalities and various other entities. Eligible parties can collaborate to submit a proposal. To the extent possible, the financial assistance must be evenly distributed between small, medium, and large municipalities. The grants and loans can only be used for the costs of microgrid design, engineering services, and interconnections. PA 12-189 authorizes up to \$25 million in bonds for the program.

The act requires any entity that receives a grant or loan under the program to issue an annual report on the project's status to PURA, DEEP, the Office of Consumer Counsel, and the Energy and Technology Committee for five years after receiving the funding. DEEP must report to the committee by January 1, 2013 on other funding sources needed to expand the program and any necessary legislative changes.

SCHOOL CONSTRUCTION GRANT PROGRAM

Under current law and practice, generation equipment is generally not eligible for reimbursement under the school construction grant program if it is installed by itself. On the other hand, such equipment may be eligible for the program if it is part of a new school or the expansion or renovation of an existing school.

PA 11-51 required the Department of Construction Services commissioner to submit a plan for making the purchase or replacement of heating, ventilation, and air conditioning (HVAC) systems eligible for school construction grants if they increase energy efficiency or reduce heating fuel costs for a town or district. (Potentially, the HVAC systems could include CHP systems, which also generate power.) The plan must include (1) criteria and conditions for state reimbursement, as well as recommended reimbursement rates; (2) an estimate of the potential costs to the state and potential savings to towns and districts; and (3) various methods of sharing realized savings between towns or districts and the state. The commissioner was required to submit the plan to the Appropriations, Education, and Finance committees. It does not appear that the plan has been submitted to date.

PERFORMANCE CONTRACTING

CGS § [16a-37x](#) authorizes municipalities to enter into energy performance contracts, under which an energy services provider (1) gives a municipal customer a comprehensive set of energy efficiency measures, which can include renewable generation and CHP facilities; (2) often arranges for long-term project financing from a third-party; and (3) normally guarantees that the project's savings will be sufficient to cover the cost of project financing for the life of the project. The law requires the Energy Conservation Management Board to develop standardized performance contracting procedures and authorizes municipalities to use these procedures or ones they develop themselves.

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