

STATEMENT OF PROJECT OBJECTIVES

New England Solar Cost-Reduction Partnership

A. PROJECT OBJECTIVES

The New England Solar Cost-Reduction Partnership will reduce solar soft costs in the region by pursuing three broad objectives. Each objective individually has potential to reduce costs and will build on each other. The objectives are:

1. Increase coordination among five states—Connecticut, Massachusetts, New Hampshire, Rhode Island, and Vermont—and with key stakeholders in those states.
2. Refine, combine, and deploy innovative tools and practices from Connecticut and Massachusetts Rooftop Solar Challenge I (RSC I) projects, and from other earlier efforts in those states and Vermont.
3. Implement other best practices more widely across the region, especially with the objective of achieving more consistent policies and practices across state lines.

B. PROJECT SCOPE

The New England Solar Cost-Reduction Partnership seeks to reduce soft costs by implementing identified best practices across five states. The project will build a strong collaboration among the key agencies and staff responsible for deploying rooftop solar photovoltaics (PV) in their respective states: Connecticut's Clean Energy Finance and Investment Authority (CEFIA), the Massachusetts Department of Energy Resources (MA DOER), the New Hampshire Office of Energy and Planning (NH OEP), the Rhode Island Office of Energy Resources (RIOER), and the Vermont Public Service Department (VT PSD). Additional state agencies, major utilities, and other stakeholders will be key partners in the project. Clean Energy States Alliance (CESA) will coordinate the project, serve as project administrator, and lead the team towards achievement of a robust regional New England solar PV market.

The goal of this project is to drive down solar soft costs by building a five-state regional market with 13 million residents and creating more consistent, streamlined processes. We will tackle a wide range of barriers involving all the major RSC II action areas: permitting and interconnection processes, financing options, planning and zoning rules, and net metering and interconnection standards. We will leverage prior successes and lessons learned and utilize the RSC II funds and opportunity as a springboard to a stronger market with reduced costs.

C. TASKS TO BE PERFORMED

BUDGET PERIOD 1

TASK 1: INCREASE COORDINATION AMONG THE FIVE STATES. (Ongoing) The states will work together to exchange information that will form the basis for cooperative action. They will also make sure that they understand the perspectives and needs of the solar industry in the region and of the key utilities. Information sharing among the states and better understanding of the needs of stakeholders will identify efficiencies, potential collaborative activities, and paths for reducing soft costs.

The challenge of collaborating among the various agencies and states involved in this project represents a key risk, but the benefits of engaging multiple states outweigh those risks. The players are all committed to the common goals of reducing solar costs and building a strong regional market for solar and they have the motivation to work together cooperatively. We will maintain effective communication and group decision-making without bogging down the project in unnecessary bureaucracy or excessive meetings.

Thirteen jurisdictions have committed to work with us closely and to implement concrete changes to their practices. Beyond that, we will engage as many municipalities in the region as possible, disseminating information and offering tools to all partnership states and targeting high rates of adoption of tools and best practices.

Subtask 1.1. Hold a one-day, in-person initial meeting with representatives of the five states.

(Early Q1) This meeting will enable the states to share information about solar practices and policies, to agree on specific ways to work together, and to establish protocols for sharing data to ensure that the various states can access each others' information without running afoul of state information disclosure policies and confidentiality rules. The meeting will be followed by monthly conference calls.

Subtask 1.2. Survey the solar policies and solar costs in the five states in order to identify differences and best practices.

(Q1) This information will be used to move towards greater uniformity in policies among the states. We will (a) use a shared online resource to compile information from the states; (b) share information on what data each state collects on PV installations and agree on some common data collection protocols going forward; (c) share information on PV installation costs in the five states in order to understand the variations in costs and to identify ways to bring down costs in the higher-cost locations; (d) identify key differences between the ways in which the states compile information; and (e) identify best practices among the states.

Subtask 1.3. Meet as a group with the solar industry from all five states. (Q1) At this meeting we will gather ideas for bringing down soft costs, with an emphasis on understanding inefficiencies caused by having different rules and practices in different jurisdictions. We anticipate that state and regional trade associations will attend, as will representatives of about 25 different solar installation firms. We will include bankers, companies that offer solar PPAs, and other individuals who are involved in solar financing. Using a list-serve and quarterly conference calls, we will maintain contact with the solar industry representatives over the course of the project in order to get their feedback on initiatives the states may pursue.

Subtask 1.4. Coordinate with utilities from across the region. (Q1-Q2) The major utilities in the region, most of which span multiple states, have committed to work with us to drive down solar soft costs. The five states will build on current collaborative efforts with these utilities, and will work with the utilities during the project period to discuss best practices and primary ideas for increasing regional standardization. The project team will work with each of these utilities to identify specific improvements and steps that the utility can and will take during the course of the project. The utilities will also be asked to comment on the approaches that the states are considering to reduce solar costs.

Subtask 1.5. Identify practices and policies with significant potential to bring down solar costs that can be implemented widely across the region.

(Priority practices identified, Q1; educational outreach, Q2-3) We will consider practices being used in New England and elsewhere. We will determine which practices and policies should receive priority; for each, we will develop and carry out an educational outreach strategy to ensure that all the states understand the recommendations. State agency staff and other experts who have been involved with each practice will be available to provide guidance and assistance to the project participants.

Subtask 1.6. Hold monthly conference calls of the five states for project coordination. (Ongoing)

Milestone (Task 1): states agree on shared data collection protocols and best practices. (Completed Q1) Based on their internal analysis (Subtask 1.2), but also the input from stakeholders (Subtasks 1.3 and 1.4), the states will agree on procedures to jointly follow and on practices they wish to implement more widely.

Milestone (Task 1): solar installer participation in the project. (Q1-6) Solar installers representing more than an estimated 60% of the installations in the five states will participate in project meetings and conference calls.

Milestone (Task 1): report on PV costs and best practices in the five states. (Completed Q3) A written report will summarize the conclusions and outcomes from the analysis conducted and input gathered under Task 1. The report will indicate what stakeholders can do to help the state agencies more widely implement the identified best practices. We will disseminate the report to staff of energy-related state agencies in the five states, utilities, solar installers, jurisdictions participating in this project, nonprofit organizations in the region that work to advance solar energy, and other stakeholders. CESA will hold a webinar to discuss the findings in the report.

Milestone: (Task 1) utility commitments. (Completed Q2) Each participating utility will have a plan of specific steps it will take to reduce solar soft costs during the remainder of BP 1 and 2.

TASK 2: FURTHER DEVELOP INNOVATIONS AND PRACTICES IN CONNECTICUT, MASSACHUSETTS, AND VERMONT THAT CAN HAVE BROAD APPLICABILITY IN DRIVING DOWN COSTS. Connecticut and Massachusetts have developed highly promising practices and tools through their RSC I projects, as well as through other separately funded activities. Vermont is pursuing other important innovations, such as electronic net metering and updated interconnection rules. This project will expand the implementation of seven initiatives in their originating states. We will roll out these approaches in the other states in the region, as appropriate.

Subtask 2.1. Have model permitting processes adopted more widely. (Collaboration of the two states, Q1-Q2; efforts to encourage adoption of model processes, months Q3-Q6) Early in the project period, DOER and CEFIA will collaborate to share best practices from each state's development of model permitting processes under RSC I, and will explore possibilities for amending each state's model to achieve greater regional standardization of permitting. DOER and CEFIA will then conduct outreach and provide support to encourage the widespread municipal adoption of these permit processes in their own states. The dissemination will include webinars, posting of educational materials on websites, outreach by DOER regional coordinators, other DOER staff, and CEFIA staff.

Milestone: In discussions between CT and MA, determine the best model permitting documents and process to recommend across states. (Completed Q2)

Milestone: Model solar permitting process disseminated to all 351 MA municipalities and all 169 CT municipalities. (Completed Q3)

Deliverables: Model permit process and process improvement elements adopted by 20 MA and 20 CT municipalities. (Completed Q6)

Subtask 2.2. Implement online permitting system. (Q1-6) CEFIA funded Simply Civic to develop an online permitting system that can simplify and handle not only solar permitting but a municipality's entire permitting needs. CEFIA and Simply Civic will pilot the system in CT municipalities, modify it as needed, and then roll it out more widely. The system will be available free to all CT towns through the end of the contract for this project with DOE. Other states will explore using the system.

Milestone: Simply Civic demos given to 50 CT and 10 MA municipalities. (Completed Q6)

Deliverable: Online permitting adopted by 8 CT municipalities. (Completed Q6)

Subtask 2.3. Introduce model solar zoning and have it adopted. (Q1-6) DOER developed a model solar zoning bylaw, addressing both rooftop and ground-mounted systems of all sizes. MA DOER will introduce this bylaw across MA and work to get all or part of it adopted in multiple municipalities.

Milestone: Model solar zoning documents disseminated to all 351 MA municipalities.

(Completed Q2) **Deliverable:** Model solar zoning adopted by 5 MA municipalities with 5 more MA municipalities targeted for potential adoption. (Completed Q6)

Subtask 2.4. Implement the Solarize community outreach model more widely. (Q 1-6) Both CEFIA and MassCEC have worked with communities to deploy coordinated education, marketing, and outreach, combined with group purchasing, to increase market penetration and reduce costs. They will apply it in an additional 21 municipalities. This will represent an increased rate of Solarize implementation, since the most recent Solarize round in the two states comprised 15 municipalities.

Milestone: 21 communities selected for Solarize. (Completed Q2)

Milestone: Group purchase period ends in the 21 communities, with contracts signed by system purchasers. (Completed Q4)

Deliverable: Implement Solarize in at least 10 MA and 11 CT communities, achieving a projected 20% reduction in installed costs. (Completed Q5)

Subtask 2.5. Implement improved solar financing options. (Q1-6) CEFIA has made excellent progress in developing innovative financing programs, including the CT Solar Loan, the CT Solar Lease II, and a Commercial PACE program, and it will continue to refine these programs and disseminate them across the state. Additional loan and lease products will further reduce the reliance on ratepayer subsidies. CEFIA will work closely with commercial banks to develop viable financial products as the state moves away from rebates and subsidies.

Deliverable: At least 75% of active local solar PV installers in Connecticut trained to utilize innovative financing programs/products. Ratepayer contribution to installed cost reduced to 20% while shifting toward financing. (Completed Q5)

Subtask 2.6. Allow for electronic net metering registration. (Q1-6) VT PSD seeks to further simplify the net metering process and reduce the associated soft costs. The agency will work to change the net metering registration to allow for electronic submission. In addition, for those projects that currently require inspections (e.g., commercial and public buildings and projects within the City of Burlington), the Department will work with the City to shorten inspection times, lower costs, and create uniformity of inspection criteria.

Deliverables: Electronic submission of net metering registration implemented throughout Vermont. The complexity of the inspection process in Burlington simplified so that most systems require only one comprehensive inspection (Completed Q6).

Subtask 2.7. Update interconnection rules. (Q1-6) During a planned upcoming revision of the Vermont's net metering rules at the Public Service Board, the Board and the Department will work together to update and improve the interconnection rules and the interconnection approval process. As part of this process, VT will review best practices in other New England states that have extensive experience in this area.

Deliverables: VT's revised interconnection rules will be approved and will eliminate the external disconnect and insurance requirements and will no longer exceed FERC standards (Completed Q6).

Subtask 2.8. Identify applicability of the seven practices above to the other states in the five-state region. (Review and determine applicability, Q1-2; for applicable measures, carry out outreach and training for other states, Q2-3) The originating state will share information about the innovation with the other states. To the extent that the other states seek to implement similar measures, the originating state will provide advice and information.

Milestone: Each state will identify at least two of the seven practices that it intends to work on. (Completed Q2).

Deliverable: After receiving training, each state will develop a plan for how it will advance the two practices that it intends to focus on. (Completed Q3).

Deliverable: Each state will have work underway to carry out those plans. (Completed Q6).

TASK 3: IMPLEMENT BEST PRACTICES MORE WIDELY ACROSS THE REGION. We will implement other practices in addition to the seven above. While a key way to reduce solar costs is by achieving greater uniformity across states, we realize that political considerations, local preferences, and varied government structures can make that difficult in some cases. We will concentrate on practices for which rapid progress is possible and will consider flexible solutions that remove market barriers when strict uniformity is infeasible. Until the inventory described above in Subtask 1.5 is completed, the relative priority of the various practices is unknown, but we have identified eight areas in which the states will devote attention and expect to make measurable progress.

Subtask 3.1. Provide municipalities with permitting and zoning guidance. (Q1-6) CEFIA and MA DOER will collaborate to determine ways in which each state's model process might be amended to achieve greater regional standardization. Resources from those two states will then be adapted to other states. For example, a CEFIA Permitting Guide that is being made available to all CT municipalities includes a standardized solar PV permit application, guidance on online permitting, recommendations on achieving a model permit process, an inspection checklist, and a model solar PV ordinance, and benefits analysis showing why streamlined permitting will benefit a local jurisdiction. This guidebook, as well as MA DOER's model permitting process, will inform permitting guidance in other locations. NH OEP and RI OER will review existing town policies in those states; with the CEFIA and DOER materials for guidance, they will each develop a model process and will disseminate it, along with educational resources, to towns across the state. RI will also develop a model as-of-right solar zoning ordinance.

Milestone: Model process distributed to all 200 NH and 39 RI municipalities. (Completed Q5)

Deliverable: At least 10 municipalities will have taken steps towards implementing process improvements. (Completed Q6)

Subtask 3.2. Disseminate structural review guidance for municipal building inspectors. (Q1-6) MA DOER has developed structural review guidance that building inspectors and project developers can use for rooftop systems up to 10kW on single and two-family homes. The guidance includes a prescriptive process for streamlined review of systems that meet certain requirements (in terms of the structural integrity of the roof and the components of the system). CT has developed a strategy to eliminate unnecessary reviews by professional engineers. MA and CT will review each others' strategies, and combine the approaches or expand either or both as appropriate. All the partner states are interested in utilizing the structural guidance materials from RSC I and modifying it, if necessary, to make it applicable to conditions in their state.

Milestones: Structural review guidance for single and two-family homes distributed to municipal building inspectors in all states. (Three states by end of Q4; the remaining two states by end of Q5).

Deliverable: Structural review guidance being used in municipalities representing more than 1 million people. (Completed Q6)

Subtask 3.3. Work with utilities. (Ongoing) (1) NH OEP will review the interconnection application and approval process for the four main utilities in the state. NH OEP will then meet individually with the key utilities to encourage them to work together to standardize and streamline the application and process to reflect proven cost-reduction methods from the other New England states. (2) NH OEP will research the feasibility of defining a common application process and common inspection process and time for all utilities. The agency will also develop an online information packet accessible from the OEP websites, and potentially also from utility websites, explaining the interconnection process for municipalities, schools, businesses, and residents. (3) MA DOER will continue to work with Massachusetts utilities to implement recommendations of the state's

Distributed Generation Working Group. (4) CT will provide utilities with updated interconnection improvement recommendations from research in RSC I and ask the utilities to identify improvements to be targeted during RSC II and estimate cost reductions associated with these targets.

Milestone: Online information packet on the interconnection process made available in NH. (Completed Q6)

Deliverable: Based on each utility's solar cost reduction plan (Task 1), CESA will project the solar cost reductions that will result by state (Completed Q4).

Subtask 3.4. Implement financing options. (Q2-6) In addition to CEFIA's efforts to extend its existing work on innovative financing (Task 2.5), all the states will learn which financing options could be available to them and will determine whether it is appropriate to implement them. CESA will analyze the various options for the states, explain the advantages and disadvantage of each, and work with each state to identify specific financing options that could make sense for its situation. States other than Connecticut will take the following actions: (1) In coordination with revisions to the MA SREC program, MA DOER will explore forward minting of SRECs for the residential market. (2) RI OER will implement a residential Property Assessed Clean Energy (PACE) program that enables individual cities and towns to set up a program involving repayment of loans through third-party lenders. (3) VT PSD will create credit enhancements—both for the developers and for the off-takers of the power—to encourage financial institutions to provide debt for community solar projects.

Milestone: DOER will make a determination on the inclusion of forward minting in its SREC II program (Completed Q1)

Deliverable: If DOER determines to include forward minting of SRECs, it will implement this into the SREC II program. (Completed Q3)

Deliverable: VT's credit enhancement program will significantly increase available financing for community solar. (Completed Q6)

Deliverable: The RI residential PACE program will be implemented and operational in some of the state's municipalities. (Completed Q6)

Subtask 3.5. Determine applicability of 10-day interconnection registration process. (Q3) The State of Vermont requires solar projects to file a one-page interconnection application. Projects automatically receive certification in 10 days unless issues are raised. We will explore whether a variant of this approach can be applied in other states.

Deliverable: Each state will report on the applicability of the VT process and identify ways, if any, in which it can be relevant to improving interconnection in its state. (Completed Q2)

Subtask 3.6. Solar maps. CT will work with a vendor or business to design a tool by which residential customers can assess the benefits of installing solar PV on their properties.

Deliverable: CEFIA's selected vendor will perform analysis of the CT solar PV market and report to CEFIA on how its software will be configured for use by CT homeowners. (Completed Q5)

Milestone (Task 3): For three of the practices above that we determine to be priorities for regional implementation, we will produce written materials and online resources that will be useful in multiple states. We will distribute the materials through the CESA website and through the participating state agencies to government officials, utilities, solar installers, and other stakeholders. (Completed Q5)

GO/NO GO DECISION CRITERIA

DOE will make a determination to proceed with funding for the next Budget Performance period (BP2) based predominately upon the successful completion of 85% of the subtasks and deliverables for BP1 described in the approved SOPO. Other budgetary and programmatic constraints may apply.

The following criteria will be used to determine whether or not this project should proceed from BP 1 to BP 2:

- Five states are working together collaboratively and have taken meaningful steps to share policy and cost information, and to reduce the variations in practices among the states. The states have committed to concrete actions to reduce those variations during BP2 and have begun taking steps to do so during BP1.
- Each state has begun work on two priority practices and policies listed above in Tasks 2 and 3.
- Model permit process and process improvement elements have been adopted in 40 communities representing more than one million people, and leaders in 20 more municipalities intend to bring a model solar permit process and process improvement elements to a vote in BP 2.
- Online permitting is being used in at least 6 CT municipalities.
- Solarize initiatives in CT and MA communities continue to yield 20% cost savings for system hosts.
- Electronic submission of net metering registration implemented throughout Vermont, with evidence that this yields efficiencies.
- Structural review guidance is implemented by municipal building inspectors and is used in municipalities representing more than 1 million people.

BUDGET PERIOD 2

BP2 will consist of work on the same three general objectives as the first BP1. However, in BP2 we will not start or develop new initiatives, but will instead focus on implementing solar cost-reduction measures more widely in more jurisdictions. We will also identify lessons learned from the project to make sure that policymakers, the solar industry, and other stakeholders have a clear roadmap for how they can continue to reduce soft costs after the conclusion of the project.

TASK 4. CONTINUE COORDINATION AMONG THE FIVE STATES.

Subtask 4.1. Hold monthly conference calls of the five states for project coordination. (Ongoing)

Subtask 4.2. Identify lessons learned and recommendations for future actions. The states will meet to compare their experiences in disseminating cost-reduction measures and will identify those measures that have been most successful and make mid-course corrections to their implementation strategies. They will produce a working document with draft conclusions and recommendations that they will continue to modify over the rest of BP2. Towards the end of BP2, they will identify actions that should be taken after the conclusion of the project.

Milestone: States meet with CESA to identify successful measures and make mid-course corrections. (Completed Q7)

Milestone: Draft lessons learned document produced. (Completed Q7)

Milestone: A report describing the project's lessons learned, including which measures proved to have the greatest impact on reducing soft costs, changes that can most easily and productively be implemented more widely, barriers to further standardization of practices among the five states, and recommended actions that the states and various stakeholders should take after the conclusion of the project. The report will also be distributed to senior state policymakers, including legislative leaders, governors, and others. A webinar will discuss the report with a New England

audience. A second webinar for a national audience will draw attention to lesson learned that could be relevant to other parts of the country. (Completed Q10)

TASK 5. ACCELERATE ADOPTION OF THOSE INNOVATIONS AND PRACTICES THAT CONNECTICUT, MASSACHUSETTS, AND VERMONT WORKED ON AS PART OF TASK 2 ABOVE DURING BP1. These projects comprise (1) model permitting process, (2) online permitting system, (3) model solar zoning, (4) Solarize, (5) solar financing options, (6) electronic net metering registration, and (7) updated interconnection rules. We will also implement some of these measures in additional states.

Deliverable: Model permit process and process improvement elements adopted by an additional 20 MA and 20 CT municipalities. (Completed Q10)

Milestone: Simply Civic demos given to 25 more CT municipalities and at least 50 municipalities in other states. (Completed Q10).

Deliverable: Online permitting adopted by 4 more CT municipalities and at least 8 municipalities in other states.

Deliverable: Model solar zoning bylaw adopted by another 10 MA and 2 CT municipalities, plus 3 RI municipalities. (Completed Q10)

Deliverables: Pending continued program success and approval by the Boards of CEFIA and MA CEC, additional rounds of Solarize CT and Solarize MA will be implemented in 2015. (Completed Q10)

Deliverable: Solarize projects will be implemented in at least one of the states from among NH, RI, and VT. (Completed Q10)

Deliverable: An adapted Solarize program or other customer aggregation model will be developed and implemented in CT and at least one other state to target affinity groups such as large companies and also to reduce or eliminate formal program resources needed to enable group purchases. (Completed Q10)

TASK 6. IMPLEMENT BEST PRACTICES MORE WIDELY ACROSS THE REGION. We will continue to give attention to the areas described above in Task 3 of BP1, but we will give the bulk of our attention in BP2 to those areas that determined to be the priorities for regional action. The milestones and deliverables below will be minimum milestones we would expect to achieve. We plan to achieve more than these minimums in those areas that we determine to be the priorities for action.

Deliverable: Model permitting process either adopted by the municipality or prepared for presentation at Town Meeting in at least 6 municipalities in NH and 6 in RI. (Completed Q10)

Milestones: Structural review guidance for residential buildings distributed to municipal building inspectors in at least one additional state. By the end of BP 2, structural review guidance will be being used in municipalities representing more than 3 million people spanning at least three states. (Completed Q10)

Milestone: VT produces and distributes model contracts for group net metering contracts. (Completed Q10)

Deliverable: Solid evidence that the project's various activities have reduced solar soft costs by an average of 15% in municipalities representing at least 2.5 million people.

FINAL PROJECT RESULTS

We expect that the various activities, milestones, and deliverables listed above will lead to meaningful solar soft-cost reductions:

- We project that this project will lead to soft-cost reductions averaging 15% in municipalities representing at least 2.5 million people, including the 13 participating jurisdictions. There will

also be smaller soft-cost reductions in other municipalities. Some project activities will impact all the communities in a particular state.

- In the minimum of 20 Solarize communities in which we will work, almost all of which will be in addition to the 13 participating jurisdictions, total installed costs (not just soft costs) for PV projects will be reduced by 20%.
- There will be a doubling of residential solar PV capacity additions from the prior year in at least two states in the region.

We will produce a report documenting the soft-cost reductions produced by this project, not just in participating jurisdictions but in other municipalities in the five states. The report will also compile all the policy and practice changes caused by this project. We will distribute the report to staff of energy-related state agencies in the five states, utilities, solar installers, the municipalities that took action over the course of the project, nonprofit organizations in the region that work to advance solar energy, and other stakeholders. In addition, CESA will disseminate relevant sections of the report and its findings to other states outside New England that could benefit from the information. That will be done through CESA meetings, webinars, and the CESA website.