

Community Solar for the Southeast Project Handbook

Last Updated: August 2017



About the Community Solar for the Southeast project

The Community Solar for the Southeast project aims to make solar more affordable and accessible through shared solar projects developed by cooperatives and municipal utilities across the southeast. The project aims to lead stakeholder process with rural public power utilities to determine solutions needed to increase development of community solar project. The team will provide technical assistance to analyze, design, and implement community solar projects.

The project is led by the North Carolina Clean Energy Technology Center with partners including Rocky Mountain Institute, Fayetteville Public Works Commission, NC Justice Center, National Rural Electric Cooperative Association, Roanoke Electric, Strata Solar, EcoPlexus, Geenex, and GreenLink. The project is funded by the Department of Energy SunShot program under Solar Energy Evolution and Diffusion Studies-2-State Energy Strategies (SEED2-SES).

Please contact communitysolar@ncsu.edu for more information.

About the North Carolina Clean Energy Technology Center

The NC Clean Energy Technology Center is a UNC System-chartered Public Service Center administered by the College of Engineering at North Carolina State University. Its mission is to advance a sustainable energy economy by educating, demonstrating and providing support for clean energy technologies, practices, and policies. The Center provides service to the businesses and citizens of North Carolina and beyond relating to the development and adoption of clean energy technologies. Through its programs and activities, the Center envisions and seeks to promote the development and use clean energy in ways that stimulate a sustainable economy while reducing dependence on foreign sources of energy and mitigating the environmental impacts of fossil fuel use.

Acknowledgements

This material is based upon work supported by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) under the Award Number DE-EE0007670.

Disclaimer

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

The contents of this report are offered as guidance. North Carolina State University, the North Carolina Division of Environmental Quality, and the North Carolina State Government and all technical sources referenced in this report do not (a) make any warranty or representation, expressed or implied, with respect to the accuracy, completeness, or usefulness of the information contained in this report, or that the use of any information, apparatus, method, or process disclosed in this report may infringe on privately owned rights; (b) assume liabilities with respect to the use of, or for damages resulting from the use of any information, apparatus, method, or process in this report. This report does not reflect official views or policy of the above-mentioned institutions, agencies and governments. Mention of trade names or commercial products does not constitute endorsement or recommendation of use.

Table of contents

Community Solar for the Southeast Project Handbook	0
1. About the project handbook	4
2. Overview of the project	4
a. Project Vision	4
b. Project Objectives	4
c. Project Stakeholders	5
3. Project schedule	6
a. Milestone plan	6
4. Resource Development (Phase I)	11
a. Half day Goals and Stakeholder Process Workshop	11
b. Resource Assessment and Gap Analysis workshop	11
c. Working groups	12
d. Low and Moderate Income Community Solar Strategies	13
e. Report on Community Solar Opportunities for LMI in the Southeast	13
f. Community Solar Design and Implementation Guide for Coops and Munis in the Southeast	13
g. Website Development	13
5. Technical Assistance (Phase II and III)	13
a. Outreach and Dissemination	13
b. Client Engagement	14
c. Technical Assistance	14

1. About the project handbook

This project handbook is a shared working document that provides the stakeholders and other interested parties with details related to the goals, processes, and status of the project. The handbook will be updated regularly with the progress of the project.

This handbook is maintained by the North Carolina Clean Energy Technology Center. Please contact communitysolar@ncsu.edu for any comments or questions.

2. Overview of the project

With funding from the Department of Energy's (DOE's) State Energy Strategies (SES), the North Carolina Clean Energy Technology Center (NCCETC) will engage key stakeholders in developing resources for community solar in the southeast, and provide technical assistance to municipal utilities and electric cooperatives to implement community solar programs.

a. Project Vision

The goal of this project is to greatly expand the deployment of community solar projects across the southeast, particularly at cooperative and municipal utilities. In those jurisdictions, community solar is easier to implement due to fewer regulatory barriers. Community solar is also in high demand in those jurisdictions as the utilities' customers generally have less access to solar electricity. This proposal also targets a particularly key region for community solar, as most southeastern states have relatively low overall solar deployment. The project aims to use a stakeholder engagement process in order to set goals for community solar programs and to strategically plan programs around those goals and stakeholder needs.

Specifically, this project is expected to result in an additional 200 megawatts (MW) or more of community solar in cooperative and municipal utility territories, a notable increase from the less than 1 MW of existing community solar in the region. The critical success factors to achieving this goal hinge on the involvement of key stakeholders, including utilities themselves. Several stakeholders have already expressed interest and have committed to be engaged in the development of community solar guidance.

b. Project Objectives

This project is designed to provide technical assistance and resources to stakeholders across the southeastern U.S. in order to build community solar capacity within cooperatives and municipal utilities.

During Year 1, NCCETC will engage its project partners and other key stakeholders in a series of working groups to analyze factors impacting the development of community solar projects within cooperative and municipal utilities across the southeast. Working with its partners, NCCETC will release a *Design and Implementation Guide for Cooperative and Municipal Utilities*, in addition to other resources, which will be distributed throughout the southeast.

During Years 2 and 3, NCCETC, with support from partners, will provide cooperative and municipal utilities across the southeast with roadblock-jumping technical assistance to help them analyze, design, and implement community solar projects. Additionally, the resources developed in the first budget period will be updated as needed.

c. Project Stakeholders

1. North Carolina Cooperative Extension
2. Savannah River National Laboratory
3. Fayetteville PWC
4. North Carolina Justice Center
5. Electricities
6. National Rural Electric Cooperative Association
7. Tennessee Valley Authority
8. Roanoke Electric
9. Santee Cooper
10. NC League of Municipalities
11. Southern Environmental Law Center
12. Strata Solar
13. Ecoplexus, Inc.
14. Bridge Solar
15. Geenex, LLC
16. The Greenlink Group

3. Project schedule

a. Milestone plan

*Tasks highlighted in green signifies completed task.

Task #	Task Title	ID #	Milestone Description	Milestone Verification Process	Mnh	Qrt
1.0	Goal & Process Development	M 1.0.1	Project Handbook: A shared working document providing stakeholders with project goals, processes, and status	Stakeholder approval and submission to DOE	3	1
1.0	Goal & Process Development	M 1.0.1	Half-day facilitated goals and stakeholder process workshop with at least three representatives from each of the following groups: 1) municipal utilities or umbrella organizations, 2) cooperative utilities or umbrella organization, and 3) other key stakeholders such as active solar developers and legal counsel active in utility and/or solar arenas.	Project Handbook	3	1
2.1	Available Resources Brief	M 2.1.1	Brief on Community Solar Resources Available to Cooperative and Municipal Utilities	Present at gap analysis workshop	5	2
2.2	Gap Analysis Workshop	M 2.2.1	A full-day Gap Analysis Workshop with at least five representatives from each of the following groups: 1) municipal utilities or umbrella organizations, 2) cooperative utilities or umbrella organizations, and 3) other key stakeholders such as active solar developers and legal counsel active in utility and/or solar arenas.	Gap analysis report	5	2

2.0	Resource and Gap Analysis Report	M 2.0.1	Report on Gap Analysis with Prioritization and Strategy for Addressing Gaps	Stakeholder approval and submission to DOE	5	2
3.1	Working Group Management	M 3.1.1	Establishment of Initial Working Groups with Assignment of NCCETC Staff Lead	Working Group charter	5	2
3.2	Implementation Guide	M 3.2.1	Community Solar Implementation Guide for Cooperative and Municipal Utilities in the Southeast	Published on toolkit webpage	12	4
3.3	Low and Moderate Income Community Solar	M 3.3.1	Report on Community Solar Opportunities for LMI in the Southeast	Published on toolkit webpage	12	4
3.0	Resource Review Workshop	M 3.0.1	NCCETC-facilitated resource review workshop to review the material of the working groups and offer final input with at least five representatives from each of the following groups: 1) municipal utilities or umbrella organizations, 2) cooperative utilities or umbrella organizations, and 3) other key stakeholders such as active solar developers and legal counsel active in utility and/or solar arenas.	Implementation Guide	12	4
3.0	Stakeholder Approval of Resources	M 3.0.2	Broad Stakeholder Review and Approval of Resources Developed	Stakeholder feedback, via email or survey	12	4
4.1	Cost/Benefit Analysis of PV/Storage	M 4.1.1	Non-Utility-Specific PV (with or without Battery Storage) Community Solar Economic Model	FPWC approval and published on toolkit webpage	4	2
4.2	Community Solar Program Design	M 4.2.1	Case Study Report on FPWC Community Solar Program Design Decisions	FPWC approval and published on toolkit webpage	7	3
4.3	Implementation Support	M 4.3.1	(dependent on subtask 4.2.1) Case Study Report on FPWC Community Solar Implementation Decisions and Experience	FPWC approval and published on toolkit webpage	12	4

5.1	Outreach and Dissemination Plan Development	M 5.1.1	Outreach and Dissemination Plan	Stakeholder approval and submission to DOE	9	3
5.2	Website Development	M 5.2.1	Project website online with positive feedback from project partners with tracking of webpage visitors	Live online toolkit webpage with analytics tracking	10	4
6.1	Client Engagement Process	M 6.1.1	Documented Client Engagement Process with approval of stakeholders	Stakeholder approval and submission to DOE	12	4
6.2	Tech. Assistance Process	M 6.2.1	Documented Technical Assistance Process with approval of stakeholders	Stakeholder approval and submission to DOE	12	4
	Budget Period 1	GN 1.1	Written commitment and statement of need from at least four southeastern coop and/or muni utilities to utilize the project's service offered in Phase 2. If there is commitment from less than four utilities, NCCETC and DOE will review potential down scoping in order to provide TA for those committed utilities and shift outreach strategies for the next budget period.	Written commitments	12	4
7.1	Cooperative Outreach and Dissemination	M 7.1.1	Direct Contact (workshop attendance, phone call, or personal email) with Every Cooperative Utility in AL, FL, GA, KY, MS, NC, TN, SC, VA regarding Phase 1 Resources and Phase 2 Services	Phone and email log summaries	18	6
7.2	Municipal Outreach and Dissemination	M 7.2.1	Direct Contact (workshop attendance, phone call, or personal email) with Every Municipal Utility in AL, FL, GA, KY, MS, NC, TN, SC, VA regarding Phase 1 Resources and Phase 2 Services	Phone and email log summaries	18	6
8.0	Client Engagement	M 8.0.1	Engagement with Three or More Interested Southeastern Utilities Each Quarter	Engagement records	15,18,21,24	5,6,7,8

9.1	Information Requests	M 9.1.1	Completion of Three to Five Information Requests Each Quarter	Information Request documentation	15,18,21,24	5, 6, 7, 8
9.2	Utility Project Technical Assistance	M 9.2.1	Completion of at least one to two Technical Assistance Project Each Quarter, in order to meet the Go-No Go Decision Point requirement of four to eight technical assistance projects executed.	Summary Report of Assistance and Client Feedback	15,18,21,24	5, 6, 7, 8
10.1	Tracking and Selection of Topics for Update	M 10.1.1	Prioritized List of Potential Updates, With Justification of Each Update	DOE Review and input on Recommended Updates	21	7
10.2	Resource Updating	M 10.2.1	Publication of Updated Resource(s) Selected for Update in Subtask 10.1 Toolkit and Implementation Guide	Updated resources published on toolkit webpage	24	8
	Budget Period 2	GN 2.1	Completion of four to eight one-on-one technical assistance projects	DOE review of project reports and client feedback reports	24	8
11.1	Cooperative Outreach and Dissemination	M 11.1.1	Direct Contact (workshop attendance, phone call, or personal email) with Every Cooperative Utility in AL, FL, GA, KY, MS, NC, TN, SC, VA regarding Phase 1 Resources and Phase 2 Services	Phone and email log summaries	30	14
11.2	Municipal Outreach and Dissemination	M 11.2.1	Direct Contact (workshop attendance, phone call, or personal email) with Every Municipal Utility in AL, FL, GA, KY, MS, NC, TN, SC, VA regarding Phase 1 Resources and Phase 2 Services	Phone and email log summaries	30	14
12.0	Client Engagement	M 12.0.1	Engagement with Three or More Interested Southeastern Utilities Each Quarter	Engagement records	27,30,33,36	9, 10, 11, 12
13.1	Information Requests	M 13.1.1	Completion of Three to Five Information Requests Each Quarter	Information Request documentation	27,30,33,36	9, 10, 11, 12

13.2	Utility Project Technical Assistance	M 13.2.1	Completion of at least one to two Technical Assistance Project Each Quarter, in order to meet the Go-No Go Decision Point requirement of four to eight technical assistance projects executed.	Summary Report of Assistance and Client Feedback	27,30,33,36	9, 10, 11, 12
14.1	Tracking and Selection of Topics for Update	M 14.1.1	Prioritized List of Potential Updates, With Justification of Each Update	DOE Review and input on Recommended Updates	33	11
14.2	Resource Updating	M 14.2.1	Publication of Updates Resource(s) Selected for Update in Subtask 10.1 Toolkit and Implementation Guide	Updated resources published on toolkit webpage	36	12
	Budget Period 3	GN 3.1	Completion of four to eight one-on-one technical assistance projects completed to the clients' satisfaction	DOE review of project reports and client feedback reports	36	12

4. Resource Development (Phase I)

a. Half day Goals and Stakeholder Process Workshop

The project partners held a workshop with other key stakeholders on May 4, 2017 to discuss the project. Participants shared their thoughts on the strengths and challenges of community solar.

Meeting notes can be found here:

<https://docs.google.com/document/d/1iMpuobm7yh7E8DJqsWPsFYqcOsiKe7vmtt8L6jmTjKk/edit#>

b. Resource Assessment and Gap Analysis workshop

NCCETC has compiled a collection of existing community solar manuals and other resources that are helpful for the project. This working document can be accessed at [this link](#). The project partners will review these resources prior to the Gap Analysis workshop.

Gap analysis workshops will be organized in close collaboration with local partners in 4 states including North Carolina, South Carolina, Georgia, and Tennessee. The gap analysis workshop will be conducted through multiple webinars and conference calls. Conducting gap analysis through webinars rather than in person will allow stakeholders from a wider geographical area to attend the workshop. These initial workshops will be completed before October 2017.

Webinar 1: Resource assessment (July)

This first webinar will brief the coops and munis in the southeast on the existing resources. We've identified two main resources- the NRECA report, and the SEPA report. We want to invite NRECA and SEPA to join us on the webinar and talk about their reports, while also requesting them to reach out to their members to participate in the webinar (to maximize participation). We will present the resource guide that we developed. The main goal of the webinar is to engage with the utilities. We also want to invite a coop with a community solar program to talk about their experiences.

Survey for gaps: Follow up with the participants of the webinar with a survey on what they see as the challenges for community solar. There are multiple goals for this survey-

1. identify where the interest lies in the southeast,
2. validate the gaps that we've identified,
3. identify other gaps.

A few of the gaps that we've identified so far (in no particular order):

- i. Integration with billing
- ii. Conflict of interest with the coops and with the G&T
- iii. Model for aggregation for community solar among the coops and munis.

- iv. Model for Solar+Storage- what is the best way to credit it? (FPWC came up with some examples)
- v. Difference in goals in COOPs and Munis.
- vi. Different state policies
- Vii. Consistency in program design
- Viii. Understanding the value of solar- premium product v. value added product.
- Ix.

Webinar 2: Gap webinar (Early August)

After synthesizing the survey results, we will present the gaps that were identified in this second webinar. We will follow up with email and a survey on feedback and interest on participating on different working groups.

Webinar/Conference calls (as needed):

We will lead multiple working groups via conference calls to come up with solutions to the gaps identified.

Webinar 3: Final presentation (late September)

We will present the findings from the working groups and receive comments, which will be created into a report.

During the workshop, the project partners will discuss the existing literature and explore their applicability to cooperative and municipal utilities in the southeast. During the course of the workshop, NCCETC will make note of questions identified by the group that are not addressed sufficiently in the existing literature.

c. Working groups

NCCETC will work with its project partners to organize and staff a series of working groups. Each working group will focus on a different aspect of community solar identified during the Gap Analysis as an area in need of additional research. Stakeholders from across the country will be invited to participate in the working groups.

Each working group will convene as necessary (at least monthly) via GoToMeeting software. Each working group will be facilitated by a staff member of NCCETC. Minutes from each working group session will be shared with the project partners following each session. The NCCETC staff member facilitating each working group will prepare a summary findings with input from the rest of the working group. Following their final session, the working group will share their summary of findings with the rest of the project partners.

d. Low and Moderate Income Community Solar Strategies

The North Carolina Justice Center will lead a half-day in-person workshop to examine community solar opportunities for low and moderate income (LMI) households in the southeast. The NCCETC will help with some of the logistics for the meeting, and will gather existing resources related to LMI community solar options to assist in the workshop dialogue.

e. Report on Community Solar Opportunities for LMI in the Southeast

Based on the findings of the half-day workshop, the North Carolina Justice Center will prepare a report on Community Solar Opportunities for LMI in the Southeast. The NCCETC will play an advisory role and provide feedback on the document.

f. Community Solar Design and Implementation Guide for Coops and Munis in the Southeast

The project partners will use the information gained in the working groups to develop a Community Solar Design and Implementation Guide for Coops and Munis in the Southeast. NCCETC will lead the effort, with project partners providing input throughout the process and final review of the document. NCCETC will also seek input from other relevant stakeholders outside of the project team.

g. Website Development

NCCETC will dedicate a section of its website for this project. The website will host the resources developed through the project, provide timely information about community solar developments in the southeast, information about requesting technical assistance, and other content deemed helpful. The website will be built using WordPress, and staff from the NCCETC, trained in WordPress, will maintain the content on the site. Site usage will be monitored using Google Analytics.

5. Technical Assistance (Phase II and III)

a. Outreach and Dissemination

NCCETC and its project partners will engage the interest of coops, munis, and community leaders throughout the southeast. The project partners will publicize the resources developed during Phase 1 and the opportunities for technical resources through their newsletters and webinars. The project partners will also raise awareness at conferences and industry events they attend, and will seek out opportunities for speaking roles at relevant conferences and webinars. The project partners will also reach out directly to coops and munis throughout the southeast, as well as the generation and transmission (G&T) utilities in each southeastern state.

b. Client Engagement

The Project partners, led by NCCETC will establish the process for engaging with potential clients prior to the formal request for technical assistance. This involves speaking with utilities about their interests and needs, prioritizing the utilities based on available staff resources, and developing a strategy to meet each utility's needs.

c. Technical Assistance

The project partners will assess each request for technical assistance and determine the appropriate personnel to take lead. The personnel will work with the client to define the goals and deliverables for the technical assistance. Where applicable, the personnel will use existing resources, including the resources developed during Phase 1, for guidance in fulfilling the technical assistance request.