

# Community Solar in the Southeast Policy Landscape for Public Utilities

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## ***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](mailto: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.

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## North Carolina

North Carolina ranks 2<sup>nd</sup> in the nation for total installed solar capacity, and was 6<sup>th</sup> in capacity installed in 2019. Until 2020 (when it was joined by Virginia), North Carolina was the only state in the Southeast that had a renewable energy portfolio standard (REPS); this policy requires public power utilities, which includes electric cooperatives and municipalities, to supply at least 12.5% of their energy from renewable energy sources by 2021. Twenty-five percent of this requirement can be met using energy efficiency. [HB 589](#), passed in 2017, requires Duke Energy to offer 40 MW of community solar, but does not contain community solar requirements for municipal or cooperative utilities. The Duke Energy community solar program is not yet available as of August 2020. Self-generation by public power utilities is limited by power service contracts with generation providers (typically municipal/cooperative G&T utilities and/or investor-owned utilities); however, they are allowed to self-generate to comply with the state's REPS policy.

### Electric Cooperatives

A total of 31 electric co-ops operate in 93 of the 100 counties in North Carolina, providing electricity to around 25% of the state's residents. North Carolina Electric Membership Corporation (NCEMC) is the power supplier to most of the state's electric co-ops. It provides load management, power

supply planning, and demand side management service to the co-ops. NCEMC has power purchase agreements with Duke Energy, American Electric Power, and SCANA, and owns several generation assets including a stake in the Catawba Nuclear Station, a stake in a combined-cycle gas plant, and slightly less than 700 MW of directly-owned peak load generation assets.

In 2016, NCEMC worked with its member cooperatives to offer community solar options to its member cooperatives. Altogether, 10 co-ops participated with the development of 15 community solar projects between 100 kW and 285 kW. The results were mixed; while some co-ops sold out their subscriptions, others remained undersubscribed.

As of August 2020, 11 co-ops in North Carolina offer community solar programs incorporating 18 different solar facilities, with a total of 2 MW of solar capacity. NCEMC is also active in development of energy storage and microgrid projects with its member cooperatives.

### **Municipal utilities**

There are two municipal power agencies in North Carolina – 1) North Carolina Eastern Municipal Power Agency (NCEMPA), which provides wholesale power to 32 cities and towns in eastern North Carolina, and 2) North Carolina Municipal Power Agency Number 1 (NCMPA-1), which includes 19 cities in the Piedmont and western North Carolina. These power agencies have wholesale power contracts with investor-owned utilities (Duke Energy Carolinas or Duke Energy Progress). Fayetteville Public Works Commission and Greenville Electric Utility Service (GEUS) are two large municipal utilities that have independent wholesale power contracts with Duke Energy.

ElectriCities is the generation and transmission company that provides customer service, management services, and technical services to most municipal utilities.

As of mid-2020, Fayetteville Public Works Commission is the only North Carolina municipal utility that offers a community solar program. This program includes 1 MW of solar capacity and 500 kW/1MWh of battery storage capacity.

# South Carolina

South Carolina ranks 15<sup>th</sup> in the nation for installed solar capacity and was 7<sup>th</sup> for capacity installed in 2019 ([SEIA](#)). South Carolina does not have a renewable portfolio standard, but the state does have a voluntary renewable energy goal for investor-owned utilities. South Carolina's investor-owned utilities, as well as several co-ops, developed community solar programs following the passage of [Act 236](#) in 2014. The [Energy Freedom Act of 2019](#) encouraged all electric service providers in the state to consider offering community solar programs, with the requirement that program costs cannot be charged to nonparticipants.

## Electric Cooperatives

South Carolina has 20 electric cooperatives serving more than 1.5 million customers in all 46 counties ([ECSC](#)). Electric cooperatives are not subject to regulation by the South Carolina Public Service Commission. Central Electric Power Cooperative (CEPC) provides wholesale electric service to the state's electric co-ops. CEPC purchases the majority of its power from Duke Energy Carolinas and Santee Cooper, as well as some from the Southeastern Power Administration and South Carolina Electric and Gas (Dominion). [The Electric Cooperatives of South Carolina](#) is the trade association for the state's electric co-ops.

As of August 2020, 16 of South Carolina's electric cooperatives offer community solar programs or are currently pursuing community solar initiatives. The state's co-ops have developed a central website - [MySCSolar](#) - for customers to learn about community solar programs offered by the co-ops. CEPC has offered community solar options to each of its 20 co-ops. They are all managed and developed by CEPC, while the rates are determined by individual co-ops. The programs offer a total of roughly 3 MW in solar capacity, with the individual projects ranging from 50 to 250 kW.

## Municipal Utilities

South Carolina has 21 municipal electric utilities, and these utilities are not subject to regulation by the Public Service Commission. [The South Carolina Association of Municipal Power Systems](#) is the trade association for the state's municipal utilities. The Piedmont Municipal Power Agency provides wholesale electric service to its 10-member municipal utilities, primarily through its 25% ownership interest in Unit 2 of the Catawba Nuclear facility ([PMPA](#)). Other municipal utilities purchase power on the wholesale market, typically from the state's investor-owned utilities or Santee Cooper ([SC Energy Office 2013](#)). Some municipal utilities also own generating facilities.

## Santee Cooper

Santee Cooper is a large public power utility serving 176,779 customers in South Carolina. Santee Cooper is regulated by a 12-member Board of Directors. Board members are appointed by the governor, reviewed by the State Senate Public Utilities Review Committee, and confirmed by the

State Senate. Santee Cooper owns generating assets and generates the majority of its own power (20,592 GWh generated in 2016 out of 23,700 GWh sold.)

Santee Cooper currently has a community solar program called [Solar Share](#). Solar Share participants may purchase 1 kW blocks of the project at \$410 per block, after Santee Cooper's rebate. The before-rebate cost is \$1.61 per watt, and the rebate (available for up to 6 kW) is equal to \$1.20 per watt. Santee Cooper offers financing options as part of its community solar program and charges participants a monthly standby fee of \$4.40 per kW for residential customers. Santee Cooper estimates that customers owning shares between 1 kW and 6 kW will recoup the upfront cost of the share within 4.1 to 5.8 years, depending on share size and monthly usage.

# Georgia

Georgia ranks 9<sup>th</sup> in the nation in total installed solar capacity, and was ranked 5<sup>th</sup> for installations in 2019. The Georgia Territorial Electrical Service Act allows electrical customers that have loads greater than 900 kW to choose their power suppliers.

## Cooperatives

There are 42 electric co-ops in Georgia. Thirty-nine of them distribute power received from Oglethorpe Power Corporation and the remaining three co-ops distribute power received from the Tennessee Valley Authority. The Georgia Public Service Commission (PSC)'s jurisdiction over electric membership cooperatives (EMCs) is limited to resolution of territorial disputes and approval authority over financing applications. Each EMC is customer-owned and self-regulating with rates set by their Board of Directors.

Oglethorpe Power Corporation (OPC), a nonprofit G&T utility owned by its 38 member cooperatives, supplies wholesale power to the EMCs. Georgia Transmission Company manages the OPC's transmission lines and substations. Georgia System Operations Corporation operates the generation facilities, control room, and electricity dispatch. All these organizations are collectively owned by the EMCs.

17 co-op utilities in Georgia offer community solar programs. In 2001, 38 EMCs came together to form [Green Power EMC](#), which procures renewable energy for its member co-ops. It has a total of 280 MW of renewable energy generation capacity including 72 MW of solar energy. Green Power EMC offers a Cooperative Solar program, which provides customers of participating electric co-ops the ability to subscribe to solar energy (generated by utility-owned solar facilities) at a competitive price. 27 EMCS participate in this program. The largest source of generation for the program is a 20 MW solar facility in Hazlehurst, Georgia. Customers subscribe for blocks of solar energy and receive on-bill credit. Prices and terms are set by the participating co-ops.

Green Power EMC also directly owns a 2 MW community solar project, and several distribution-level EMCs also own community solar facilities for participation in the Cooperative Solar program. These include Cobb EMC (7.7 MW), GreyStone Power Corporation (4 MW), Walton EMC (6.5 MW), Snapping Shoals EMC (2.7 MW), Tri-County EMC (1 MW), Middle Georgia EMC (936 kW), Irwin EMC (1 MW), Satilla REMC (1 MW), Okefenokee REMC (2 MW), and Coastal EMC (120 kW). Altamaha EMC (39 kW) and Grady EMC (2 MW) also own community-scale solar facilities.

## Municipal Utilities

There are 48 cities and 1 county [municipal utilities](#) that are members of the Municipal Electric Authority of Georgia (MEAG). MEAG provides generation and transmission services to its member utilities. There are another four municipal utilities that are not part of the MEAG: Dalton, Hampton,



Acworth, and Chickamauga. Electricity rates for these utilities are set by their city councils. Hampton is a wholesale customer of Central Georgia EMC, while Dalton is a direct-owner of generation and transmission, and Chickamauga is a franchise distributor of TVA.

Georgia has an integrated transmission system jointly owned by Georgia Power Company, Oglethorpe Power Corporation, MEAG, and City of Dalton. Municipal utilities purchase wholesale electricity from MEAG, TVA, Georgia Power, and others.

### **Tennessee Valley Authority (TVA)**

TVA serves 4 municipal and cooperative utilities in the northern part of Georgia, including Blue Ridge Mountain EMC, North Georgia EMC, Tri-State EMC, and Chickamauga Electric System. All of these utilities have wholesale power contracts with TVA, which also regulates their distribution systems, and has authority over electric rates.

The PSC's [website](#) includes a detailed overview of the energy regulatory landscape in Georgia.

# Tennessee

Tennessee ranks 25<sup>th</sup> in installed solar capacity and was 24<sup>th</sup> for capacity installed during 2019.

The majority of the state of Tennessee is served by the Tennessee Valley Authority (TVA), a corporate agency of the U.S. government, created by the Tennessee Valley Authority Act of 1933. TVA is a self-regulated entity, providing electricity to local power companies and large business customers throughout its service territory. Local power companies then provide retail electric service to most end-use customers.

Local power companies in TVA territory must procure power through TVA. TVA provides multiple options for these utilities to pursue renewable energy projects. For solar photovoltaic projects between 50 kW and 2 MW (the size of most community solar projects), TVA offers the Distributed Solar Solutions Program. Local power companies may apply to this limited capacity program to develop new solar projects.

A settlement agreement between TVA and the U.S. Environmental Protection Agency required TVA to provide [\\$2 million in funding for community solar programs](#), with the procurement process beginning in 2014. The two utilities selected for this funding were Appalachian Electric Cooperative (AEC) and Chattanooga's Electric Plant Board (EPB).

## Electric Cooperatives

There are 22 electric co-ops in Tennessee. According to [NRECA](#), 3 Tennessee co-ops own community solar facilities: Appalachian Electric Cooperative (1.3 MW), Middle Tennessee EMC (720 kW), and Duck River EMC (27 kW).

Appalachian Electric Cooperative's [community solar program](#) began operation in 2016. It operates on an upfront payment structure and gives subscribers the option to donate shares to nonprofit or educational organizations.

Middle Tennessee EMC's community solar program, called [Cooperative Solar](#), also began operation in 2016. This program uses a monthly subscription structure, and does not require a minimum subscription period.

Duck River EMC's [community solar project](#), opened in 2014, uses an upfront payment structure.

## Municipal Electric Utilities

There are 60 municipal electric utilities in Tennessee, all of which belong to the Tennessee Municipal Electric Power Association (TMEPA).

The Electric Power Board (EPB) of Chattanooga installed a 1.4 MW community solar project, called Solar Share in 2017. The EPB Solar Share program includes a comprehensive suite of subscription options, including long term purchase, month-to-month subscription, and purchase of energy offsets. The program is open to both residential and commercial customers.

Nashville Electric Service (NES) opened the Music City Solar program in 2018. Music City Solar is a 2 MW community solar program; subscribers pay an upfront fee of \$215 and receive monetary credits on their bill based on solar generation. The program also includes provisions allowing subscribers to donate their credits to friends, family, or low-income customers.

## Virginia

Virginia is ranked 18<sup>th</sup> in the nation for total installed solar capacity, and was 19<sup>th</sup> for capacity installed in 2019.

Virginia replaced its voluntary Renewable Portfolio Standard (RPS) with a binding RPS in 2020. The new law requires 100% of electricity for investor-owned utilities to come from renewable sources by 2050. However, these provisions do not apply to municipal and cooperative utilities. The state allows for net metering. Co-ops are required to provide net metering and are regulated by the State Corporation Commission (SCC). Virginia law requires a community solar program for investor-owned utilities, but there is no mandate for community solar programs for public power utilities. Virginia does allow co-ops to develop community solar pilot programs under [2017 legislation](#).

### Cooperatives

There are 13 electric co-ops in Virginia. All but 4 of these co-ops (Central Virginia, Craig-Botetourt, Northern Virginia, and Powell Valley) are members of the Old Dominion Electric Cooperative (ODEC), which serves as the Generation and Transmission (G&T) organization for member co-ops.

According to [NRECA](#), 2 Virginia co-ops currently offer community solar programs. Several other co-ops [have received approval](#) for community solar programs from the SCC.

Central Virginia Electric Cooperative (CVEC) [began operation](#) of a 4 MW community solar project in 2018; the total project size is 10 MW, but 6 MW of that is directly used by the co-op rather than being used for community solar. CVEC was the first co-op to receive approval for its community solar tariff program under the 2017 pilot community solar program legislation.

BARC Electric Cooperative opened a [550 kW community solar project](#) in late 2016; this was the first community solar program offered by a Virginia utility.

Both the CVEC and BARC community solar programs use a monthly subscription structure rather than an upfront payment; the minimum subscription period for each project is 12 months.

Shenandoah Valley Electric Cooperative (SVEC) is [planning](#) to develop a community solar project and is currently identifying a suitable location within its service territory. SVEC intends to begin offering the program to subscribers during 2021.

### **Municipalities**

There are 16 municipal electric utilities in Virginia. The Virginia Municipal Electric Association No. 1 (VMEA) provides wholesale electric service to 7 munis through a wholesale power agreement with Dominion. VMEA includes Manassas, Franklin, Harrisonburg, Blackstone, Elkton, Culpeper, and Wakefield. The City of Danville and City of Bristol are the two largest municipal utilities in the state. The Municipal Electric Power Association of Virginia (MEPAV) is the collective representation organization for the municipal utilities. It does not provide any technical support or power supply.

Harrisonburg Electric Commission (HEC) announced in August 2020 that it will be pursuing a community solar project, although details are not yet available.

## **Mississippi**

Mississippi ranks 26<sup>th</sup> in the nation for installed solar capacity and was 42<sup>nd</sup> in capacity installed during 2019. The Mississippi Public Service Commission can require co-ops to provide net metering, however the Commission cannot establish the level of compensation for the program. Mississippi does not have statewide community solar policy. One Mississippi investor-owned utility, Entergy, offers community solar subscriptions.

### **Cooperatives**

There are 25 electric cooperatives in Mississippi. Cooperative Energy is the Generation and Transmission (G&T) co-op that provides wholesale power to 11 electric co-ops. TVA provides wholesale power to 14 other co-ops. The Electric Cooperatives of Mississippi (ECM) is the collective representation organization of co-ops in Mississippi. ECM does not generate or distribute power, but provides a unified voice in governmental relations, legislative action, member relation, training, and public relations.

No Mississippi co-ops currently offer community solar programs.

### **Municipal utilities**

The Municipal Energy Agency of Mississippi (MEAM) is the G&T organization for Mississippi's municipal utilities. It is made up of 6 municipal utilities - Greenwood, Canton, Kosciuski, Leland, Durant, and Itta Benna. MEAM has power contracts with Southeastern Power Administration, Entergy, and also has its own generation assets.

No Mississippi municipal utilities currently offer community solar programs.

## **Alabama**

Alabama ranks 28<sup>th</sup> in the nation for installed solar capacity, and was 49<sup>th</sup> in capacity installed during 2019. It does not have a Renewable Portfolio Standard or net metering program.

### **Cooperative**

The Alabama Rural Electric Association of Cooperatives (AREA) is the collective representation organization of 22 co-ops in the state. TVA provides wholesale power to the eight co-ops in the northern Alabama region. PowerSouth Energy provides wholesale power to 12 co-ops in central and southern Alabama.

No Alabama co-ops offer community solar programs.

### **Municipal electric utilities**

The Alabama Municipal Electric Authority (AMEA) is the wholesale power provider to 11 power utilities in Alabama. AMEA has a 50 kW system on their headquarters as a research project. The City of Huntsville is the largest municipal utility in the state with 150,000 customers.

No Alabama municipal utilities offer community solar programs.

## Florida

Florida ranks 4<sup>th</sup> in the nation for installed solar capacity, and was 3<sup>rd</sup> for capacity installed during 2019. Electric co-ops and municipal electric utilities are not fully regulated by the Florida Public Service Commission (PSC). However, the PSC has jurisdiction with regard to rate structure, territorial boundaries, and bulk power supply. The public power utilities are required to provide net metering; however the utilities are allowed to set their own standards. These utilities file an [annual report](#) with the Public Service Commission regarding net metering and renewable energy generation. Florida does not have any statewide policies regarding community solar. Despite the lack of state policy, one of Florida's investor-owned utilities, Florida Power & Light, began operation of a 1.5 GW community solar program, [SolarTogether](#), in 2020; this is currently the largest community solar program in the country.

### Electric Cooperatives

There are 18 rural electric co-ops in the state; 17 are members of the Florida Electric Cooperatives Association, a representation organization. Two of these co-ops (Seminole and PowerSouth) are G&T utilities, while the remainder are distribution utilities. PowerSouth also serves distribution utilities in Alabama.

Twelve Florida co-ops offer community solar programs. Ten of these are Seminole EC and its member distribution utilities, which participate in Seminole's [Cooperative Solar](#) program. This program makes use of a 2.2 MW solar facility completed in 2017.

Two distribution cooperatives also offer independent community solar programs. Choctawhatchee Electric Cooperative (CHELCO) operates a 120 kW rooftop solar facility and offers subscriptions through its [Cooperative Solar program](#). Florida Keys Electric Cooperative (FKEC) began offering the Simple Solar program in 2010, although the program is not currently listed on the utility's website.

### Municipal Electric Utilities

There are 33 municipal electric utilities in Florida. The Florida Municipal Electric Association (FMEA) is the collective organization that represents the interests of the municipal utilities. FMEA provides governmental regulations, communications, and educational services. The Florida Municipal Power Association (FMPA) is the G&T for these utilities.

Two Florida municipal utilities offer community solar programs. The Orlando Utilities Commission offers the [OUCommunity Solar program](#); this program has 13 MW of solar capacity. The program allows subscribers to replace their fuel rate-based electricity payments with a solar rate of \$0.06 per kWh. This program began in 2013 with 400 kW of solar capacity; additional capacity was installed in 2017.

The City of Tallahassee offers the [Tallahassee Solar program](#), which, similarly to the Orlando program, allows subscribers to replace their fuel rate payments with a solar rate of \$0.05 per kWh. This program began in 2018 with 20 MW of capacity; an additional 40 MW of capacity was added in 2019.

## Kentucky

Kentucky is ranked 46<sup>th</sup> in the nation for total solar capacity, and was 43<sup>rd</sup> for capacity installed in 2019. Kentucky does not have a statewide community solar policy. Kentucky's two largest investor-owned utilities, Kentucky Utilities and Louisville Gas & Electric, offer community solar programs.

### Electric Cooperatives

There are 24 electric co-ops providing distribution services in Kentucky, and 2 co-ops that provide generation and transmission.

Eastern Kentucky Power Cooperative (EKPC) is the wholesale power provider to 16 co-ops in Kentucky. EKPC installed an 8.5 MW [community solar project](#) in 2017; this project offers subscriptions to customers of EKPC's member distribution utilities. Subscriptions are offered through one-time payments.

As of August 2020, 17 co-ops in Kentucky offer community solar programs. All of these co-ops are participants in the EKPC Cooperative Solar project.

### Municipal Electric Utilities

The Kentucky Municipal Utilities Association (KMUA) serves as the representation organization for 40 of Kentucky's municipal utilities. Ten Kentucky municipal utilities elected to join the Kentucky Municipal Electricity Agency (KMEA), an inter-local agency that provides G&T services, in 2015.

Berea Municipal Utilities has a 60 kW community solar project completed in 2014. It began operation in 2011 with several expansions afterward.