Community Solar Policy Landscape in the Southeast

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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 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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State Summaries:

North Carolina

While North Carolina is 4th in the nation for total installed solar capacity, very few residents have access to solar energy, whether on their rooftop or through a green energy option. North Carolina is the only state in the southeast that has a renewable energy portfolio standard (REPS) which requires the public power utilities, which includes electric cooperatives and municipalities, to meet at least 10% of their energy from renewable energy sources by 2018. Twenty-five percent of this requirement can be met by energy efficiency. There were 3,428 residential net metered customers at the end of 2015, of which 235 were served by electric cooperatives. Public power utilities are limited by their power service contracts in the amount of self-generation, however they are allowed to self-generate to comply with the state's REPS.

Electric Cooperative

There are 31 electric co-ops that operate in 93 of 100 counties in North Carolina providing electricity to 25% of North Carolina residents. North Carolina ranks 6th in total solar installed among electric co-ops in the nation (NRECA, May 9, 2017).

North Carolina Electric Membership Corporation (NCEMC) is the power supplier to most of the electric co-ops. It provides load management, power supply planning, and demand side management service to the co-ops. NCEMC has power purchase agreement from Duke Energy, American Electric Power, and SCANA. NCEMC has a 61% stake in Catawaba Nuclear Station, 30% stake in Catawba Nuclear, and owns and operates 618 MW of peak load generation assets.

Twenty-two co-ops are part of the not-for-profit GreenCo Solutions, LLC, which provides energy efficiency and renewable energy resources to provide compliance reporting and tracking for the state's renewable energy portfolio standard (REPS).

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, where some co-ops sold out their subscriptions, others remained undersubscribed.

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, 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 are divided based on the wholesale power contract.

ElectriCities is the generation and transmission company that provides customers service, management services, and technical services to its municipal power agencies. As of early 2017, none of the municipal utilities in North Carolina have offered community solar programs.

Fayetteville Public Works Commission (FPWC) and Greenville Electric Utility Service (GEUS) are the two largest electric municipal utilities that have their own whole-sale power contract.

South Carolina

South Carolina ranks 27th in the nation for installed solar capacity and was 21st for capacity installed in 2016 (SEIA). South Carolina does not have a statewide community solar policy or renewable portfolio standard, but the state does have a voluntary renewable energy goal for investor-owned utilities.

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. The Electric Cooperatives of South Carolina is the trade association for the state's electric co-ops.

Twelve of South Carolina's electric cooperatives are currently pursuing community solar initiatives: Black River, Blue Ridge, Broad River, Coastal, Fairfield, Horry, Laurens, Lynches, Palmetto, Pee Dee, Tri-County, and York. The state's co-ops have developed a central website - MySCSolar - for customers to learn about community solar programs offered by the co-ops. The Central Co-op has offered community solar options to all of its 20 coops. Each are planning to install from 50kW to 250 kW community solar projects. They are all managed and developed by the Central co-op, while the rates are determined by individual co-ops.

Central Co-op has contracts with Duke and Santee Cooper for power. Duke contracts include a nominal energy charge, and a single annual coincident peak of more than $200/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 shares of the project at $420 per share, after Santee Cooper's rebate. The before-rebate cost is $1.82 per watt, and the rebate (available for up to 6 kW) is equal to $1.40 per watt. Santee Cooper does not offer financing as part of its community solar program and charges participants a monthly standby fee of $4.40 per kW for residential customers and $4.70 per kW for commercial customers. Santee Cooper estimates that customers owning shares between 1 kW and 6 kW will recoup the upfront cost of the share within 4.2 to 5.9 years, depending on share size and monthly usage.

Georgia

Georgia has seen significant progress toward growth in renewable energy. In July 2016, Georgia Public Service Commission (PSC) approved Georgia Power's IRP to generate 1,600 MW of renewable energy by 2021. The PSC's jurisdiction over the EMCs are limited to resolution of territorial disputes and approval authority over financing applications. The Georgia Territorial Electrical Service Act allows the 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 Tennessee Valley Authority. Each EMC is customer owned and self-regulating with rates set by their Board of Directors. Because of the nature of the deregulation market in Georgia, the self-generation restrictions are limited for Georgia co-ops.

Oglethorpe Power 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.

In 2001, 38 EMCs came together to form the 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, which provides customers of participating electric co-ops the ability to subscribe to solar energy at a competitive price (green tariff). Customers subscribe for blocks of solar energy and receive on-bill credit. Price and terms are set by the participating co-ops. More than 4,000 customers and 11 co-ops have participated in the program. In 2016, Green Power developed a 20 MW solar plant in Hazelhurst, and in 2017, is developing an additional 52 MW of solar. The developer Silicon Ranch will own and operate the solar facility; Green Power EMC will purchase all of the energy and environmental attributes. In 2016, Green Power EMC was awarded the Electric Cooperative of the Year award by SEIA.

Greystone Power cooperative has installed 1 MW of cooperative solar. The array is divided into 750 blocks where, each member can purchase one or two blocks at $25 a month. The output is deducted from the member's monthly bill at $0.11/kWh (electric rate at $0.11/kWh). The array sold out in a month and there is a current wait list of more than 250.

Municipal Utilities

There are 48 cities and 1 county of municipal utilities that are members of the Municipal Electric Authority of Georgia (MEAG). MEAG provides generation and transmission services to its

member munis. There are another four munis that are not part of the MEAG: Dalton, Hampton, Acworth, and Chickamauga. Electricity rates are set by the city council. Hampton is a wholesale customer of EMC, Dalton is a direct-owner of generation and transmission, 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. These munis purchase wholesale electricity from MEAG, TVA, Georgia Power, and others.

Tennessee Valley Authority (TVA)

TVA serves 5 co-ops in the northern part of Georgia, including Blue Ridge Mountain, North Georgia, Tri-State, City of Chickamauga, and Chattanooga. All of the cooperatives have a wholesale power contract with TVA, who also regulates the distribution systems, and has authority over electric rates.

PSC's website includes a detailed overview of the regulatory energy landscape in the State. Link to additional resource on understanding PURPA implementation in Georgia.

Tennessee

The majority of the state of Tennessee is served by the Tennessee Valley Authority (TVA), a corporate agency of the U.S., 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 its Distributed Solar Solutions Program. Local power companies may apply to this limited capacity program to develop new solar projects.

Electric Cooperatives

There are 22 electric co-ops in Tennessee.

Municipal Electric Utilities

There are 60 municipal electric utilities in Tennessee, of which 59 belong to the Tennessee Municipal Electric Power Association.

Electric Power Board (EBP) of Chattanooga has installed a 1.4 MW community solar project. The project was part of the settlement agreement from TVA and EPA. TVA had 11 clean air violations of the Clean Air Act. As part of the settlement agreement, TVA offered $2 million in funding for community solar for its co-ops. EBP community solar was launched in July 2017. It includes a comprehensive suite option to subscribe, including: 1) long term purchase, 2) month-to-month subscription, and 3) purchase energy offsets. The program is open to both residential and commercial customers.

Virginia

As of 2016, Virginia ranks 20th with a total of 238 MW of solar installed in the state (SEIA). Virginia has a voluntary Renewable Portfolio Standard (RPS). 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 pilot community solar program for investor owned utilities, but there is no mandate for community solar programs for public power utilities.

Cooperatives

There are 13 electric co-ops in Virginia. Apart from 4 co-ops, Central Virginia, Craig-Botetourt, Northern Virginia, and Powell Valley electric co-op, all other co-ops are members of the Old Dominion Electric Cooperative (ODEC), which serves at the Generation and Transmission (G&T) organization for member co-ops.

ODEC has contracted over 300 MW of renewable energy (mostly wind). In 2015, ODEC contracted Hecte Energy for 30 MW of solar.

Municipalities

There are 15 electric municipal utilities in Virginia. The Virginia Municipal Electric Association No. 1 (VMEA) provides wholesale electric service to 7 munis through wholesale power agreement with Dominion. VMEA includes Manassas, Franklin, Harrisonburg, Blackstone, Elkton, Cupleper, and Wakefield. The City of Danville and City of Bristol are the two largest electric munis in the State. The Municipal Electric Power Association of Virginia (MEPAV) is the collective organization for the munis. It does not provide any technical support or power supply.

In 2017, City of Danville contracted TurningPoint Energy to build 6 MW of solar which would supply 1.5% of the city's power needs.

Mississippi

The Mississippi Public Service Commission can require the co-ops to provide net metering, however the Commission cannot establish the level of compensation for the program. Cooperatives use the TVA sponsored net metering program to meet the net metering requirement.

Cooperatives

There are 25 co-ops in Mississippi. Cooperative Energy is the Generation and Transmission (G&T) co-op which 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 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.

There is no state mandate for community solar. However, Cooperative Energy (G&T) has five solar sites, all less than 100 kW, that will come online in 2016. They are evaluating solar now. These co-ops have previously installed solar: Coahoma, Coast, Southern Pine, Singing, and Delta.

Cooperative Energy has utility-scale solar of 52 MW installed. Eastern Mississippi EMC has 50 MW installed.

Municipal utilities

The Municipal Energy Agency of Mississippi (MEAM) is the collective organization of the munis. It is made up of 6 munis - Greenwood, Canton, Kosciuski, Lelland, Durant, and Itta Benna. MEAM has power contracts with Southeastern Power Administration, Entergy, and has its generation assets. (http://www.meam.com/)

Greenville Muni has installed 100 kW of solar with funding from ARRA.

Alabama

Alabama does not have a Renewable Portfolio Standard or net metering program. According to SEIA, as of 2016 the state had 105 MW of solar installed.

Cooperative

Alabama Rural Electric Association of Cooperatives (AREA) is the collective 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. Southern Power supplies wholesale power to Alabama. Central Alabama Electric Coop has a 6 kW solar demonstration project.

Municipal electric utilities

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. AMEA has expressed interest in offering community solar options to its members.

City of Huntsville is the largest muni in the state with 150,000 customers.

Florida

Electric co-ops and municipal electric utilities are not fully regulated by the Florida Public Service Commission, however the commission 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. The utilities file an annual report with the Public Service Commission regarding net metering and renewable energy generation.

In 2017, Florida legislature S.B. 90 provides an 80% property tax exemption for solar (for residential and commercial) from Tangible Personal Property (TPP) and 80% exemption for value of solar installation from an assessment of real property tax for commercial property.

Electric Cooperatives

There are 18 rural electric co-ops in the state. All co-ops offer net metering. Sumber, Lee County, and Sumter electric co-ops have the highest number of net metered customers (more than 200). Clay, Lee, Sumter, and Withalacoochee River have more than 1 MW of solar installed in their co-op.

Municipal Electric Utilities

There are 34 municipal utilities in the state. 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.

Gainesville, JEA, Lakeland, Tallahassee, and Orlando municipal utilities have more than 100 net metered systems and more than 1 MW of solar installed in their service territory.

Kentucky

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. As of July 2017, EKPC is in the process of installing an 8.5 MW community solar project. The community solar collaborative was initiated in 2013 as a part of the settlement agreement between EKPC and the Sierra Club. EKPC developed community solar as an alternative to net metering. Subscribers can purchase a panel for $460 and be credited for the energy, capacity, and renewable energy benefits that is sold to the PJM market. Average price of energy is around 2.5c/kWh, and $60/MW for capacity. The project is set to cost around $17 million and is financed through Renewable Energy Bonds.

Municipal Electric Utilities

Many Kentucky municipal utilities have elected to join the Kentucky Municipal Electricity Agency, an inter-local agency that will separate these municipal utilities from relationships with the larger IOUs.

Big Rivers is the G&T for the munis. They currently have a 0.5 MW community solar project. Historically, munis purchased power from Rural Gas and Electric, which merged with RGKU. The community solar projects by the muni is credited at retail rate.

Additional resources on Kentucky
https://www.ekpc.coop/committed/Cooperative%20Solar.html
https://www.ekpc.coop/tariffsandfilings.html
https://www.ekpc.coop/generation.html

Link to wholesale power tariffs