

Corporate Renewable Energy Procurement Pathways in the Southeast: **NORTH CAROLINA**

Many corporations, higher education institutions, and municipalities use off-site renewable energy purchasing to meet ambitious renewable energy goals. Limited off-site renewable projects in the Southeastern United States may not be a function of limited corporate interest, but rather may reflect regulatory and market barriers. This report summarizes the status of off-site renewable procurement in North Carolina, highlighting the potential for market expansion.

To understand the potential for renewable procurement in the Southeast, NREL gathered and estimated data from corporations, cities, and higher education institutions with renewable energy commitments. We pair this with data on existing renewable energy supply options (Figure 1). A summary of purchasing pathways in the state and their contracted capacity is found in Table 1.

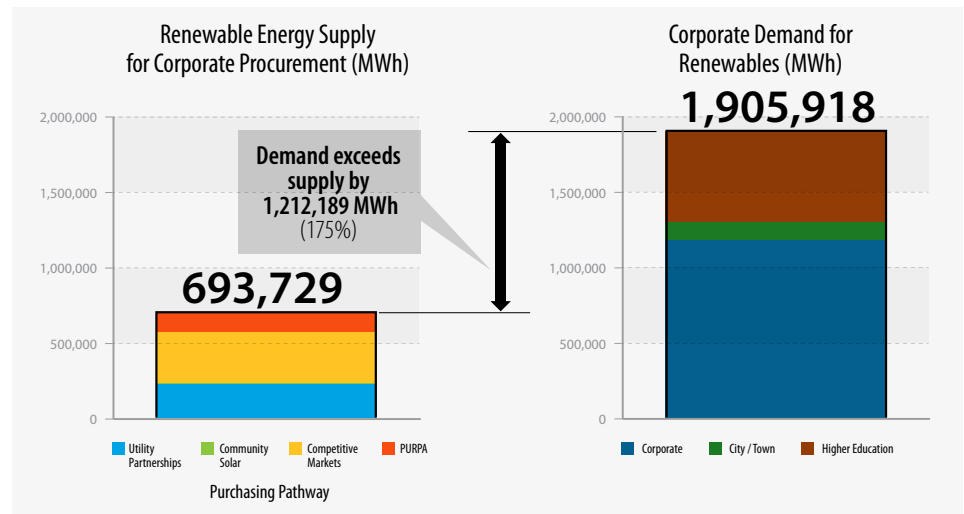


Figure 1. Corporate renewable energy supply and demand

In North Carolina, our sample of demand for renewables exceeds supply by 1.2 million megawatt hours (MWh), or 175%. The demand comes from a mix of corporates, cities, and higher education institutions.

Utility Partnerships

Duke Energy offered the Green Source Rider pilot tariff to schedule OPT-G, OPT-H, and OPT-I customers that added new load of at least 1 MW between June 2012 and December 2016. In this program, renewable energy certificates (RECs) were retired on behalf of the customer, although credit was capped at the renewable energy cost so that cost savings were not available to customers. Google, Cisco, and Apple purchased a total of 111 MW of new capacity through this program.

Pending approval by the North Carolina Utilities Commission, Duke Energy will begin to offer Green Source Advantage in 2019. The program is capped at 600 MW of renewable energy capacity over five years, including 100 MW for military installations, 250 MW for the University of North Carolina system, and 250 MW for large nonresidential customers. REC ownership will be passed to the customer, and the standard contract length is expected to be 20 years.

Community Solar

The Distributed Resources Access Act mandates that Duke Energy Carolinas and Progress to offer community solar programs for retail customers. Each service territory has set a cap of 20 MW total capacity, of which any individual project can be a maximum of 5 MW and subscriptions can be up to 2 MW. This program requires RECs to be retired on behalf of customers.

Competitive Market Access

Off-Site PPAs

North Carolina is the only state in the Southeast in which corporate customers have procured off-site renewable energy through power purchase agreements (PPAs). Of 171 MW of off-site PPA capacity, at least half serves out-of-state load. Dominion Energy is a member of PJM Interconnection, so any corporate customer located in this utility service territory may be positioned to receive the energy price hedging benefits of off-site PPAs. Retail choice is not available in NC.

PURPA

With 483 qualifying facilities (QFs) under the federal Public Utility Regulatory Policies Act (PURPA), North Carolina supports the most PURPA deployment in the Southeast and is the only Southeast state in which corporate customers directly own QFs. Apple owns 47 megawatts (MW) of capacity across three facilities, followed by Shoe Show (5 MW photovoltaic [PV]), United Therapeutics (4 MW PV), Bernhardt Furniture Company (1 MW PV), and QVC (1 MW PV).

Through 2017, PURPA regulations in North Carolina mandated Dominion and Duke Energy Carolinas and Progress to offer long-term fixed-price contracts to PURPA developers. In 2017, the state legislature enacted House Bill 589, which reduces the capacity threshold for QFs and decreases contract length requirements. HB 589 also introduced renewable energy capacity requirements for regulated utilities, allowing utilities to own a maximum of 30% of generated renewable energy capacity. To meet the remaining capacity requirements, utilities will be required to issue requests for proposals (RFPs), and QFs submitting the lowest-cost bids will be selected and serve as the basis for avoided-cost rates for other projects. This competitive solicitation process will be fully implemented in 2021.

	Project Size	Contract Length	Rates
Historical PURPA Mandate	1 to 5 MW	Developer chose 5, 10, or 15-year contracts	Fixed rates determined based on projected avoided-cost rates over the life of the contract
	≤ 80 MW	10 years	Fixed rate negotiated with the utility
House Bill 589 (2017)	≤ 1 MW until utility capacity reaches 100 MW, then project size eligibility drops to 100 kilowatts (kW)	10 years	Fixed rates determined based on projected avoided-cost rates over the life of the contract
	Projects exceeding 1 MW, or 100 kW once utility capacity reaches 100 MW	5 years	Fixed rate negotiated with the utility

Table 1. Evolution of PURPA in North Carolina

Market Outlook

Corporate customers in North Carolina may have several pathways to procure renewable energy. Once approved, Duke Energy's Green Source Advantage program will provide 600 MW of available capacity. Duke Energy's community solar program, which has 40 MW of available capacity, is another immediately accessible option. Corporates located in Dominion Energy's service territory may be able to procure renewable energy and hedge electricity price risks by pursuing off-site PPAs. Customers in other utility service territories may also pursue this option, although risks increase as the distance between the point of consumption and the PV project increase. These customers may be interested in evaluating the approach of Lockheed Martin or Fifth Third Bank, which recently procured a PV project in North Carolina that serves dispersed load.

Pathway	Contracted Capacity (MW)	Key Considerations
Utility Partnerships	111	<ul style="list-style-type: none"> Duke Energy Rider expired in 2016. Duke Energy proposed the Green Source Advantage program beginning in 2019 (pending PUC approval).
Community Solar	2	<ul style="list-style-type: none"> State mandate for Duke Energy Carolinas and Progress to offer community solar for retail customers. Program cap of 40 MW, project cap of 5 MW, RECs retired on behalf of customer
Competitive Markets	171	<ul style="list-style-type: none"> Only state in the southeast with off-site PPAs (171 MW) Dominion Energy participates in PJM
PURPA	60	<ul style="list-style-type: none"> Only state in the southeast region with corporate ownership of qualified facilities

Table 2. Deployed capacity and key considerations for corporate procurement

Heeter, Jenny; Cook, Jeffrey J.; and Jenny Sauer. 2018. *Existing and Potential Corporate Off-site Renewable Procurement in the Southeast*. Golden, CO: National Renewable Energy Laboratory. NREL/TP-6A20-72003. <https://www.nrel.gov/docs/fy18osti/72003.pdf>.



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NREL is a national laboratory of the U.S. Department of Energy
Office of Energy Efficiency and Renewable Energy
Operated by the Alliance for Sustainable Energy, LLC
NREL/FS-6A20-72486 • February 2019