

STATE OF NORTH CAROLINA UTILITIES COMMISSION RALEIGH

DOCKET NO. EMP-111, SUB 0

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of the Application of Sweetleaf Solar LLC for a Certificate of Public Convenience and Necessity))))	APPLICATION FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR A MERCHANT PLANT
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Sweetleaf Solar LLC (“Sweetleaf Solar” or the “Applicant”), by and through counsel, hereby applies to the North Carolina Utilities Commission (the “Commission”) pursuant to G.S. § 62-110-1 and Commission Rule R8-63 for a Certificate of Public Convenience and Necessity authorizing construction of a solar photovoltaic (“PV”) facility with a capacity of 94 megawatts (“MW”) to be located in Halifax County (the “Facility”). In support of its application, Applicant provides the Commission the attached exhibits in compliance with Rule R8-63.

WHEREFORE, Applicant respectfully requests that the Commission issue a Certificate of Public Convenience and Necessity pursuant to G.S. § 62-110.1 and Commission Rule R8-63 for the Facility, as more specifically described herein.

Respectfully submitted this 2d day of June, 2020.

KILPATRICK TOWNSEND & STOCKTON LLP

By: *Benjamin L. Snowden*

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Attorney for Sweetleaf Solar, LLC

Sweetleaf Solar LLC Application Exhibit 1 [R8-63(b)(1)]

(i) The full and correct name, business address, business telephone number, and electronic mailing address of the Applicant are:

Sweetleaf Solar LLC
1930 Abbott Street, Suite 402
Charlotte, NC 28203
(980) 237-7926
Donna.Robichaud@geenexsolar.com

(ii) Description of Applicant: Sweetleaf Solar LLC, formed August 12, 2015, is a North Carolina Limited Liability Company with its principal place of business located in Charlotte, North Carolina. A true and correct copy of Sweetleaf Solar's Limited Liability Company Articles of Organization is attached as **Schedule 1**. The principal participants of this Sweetleaf Solar entity are the two officers of Geenex Solar LLC ("Geenex Solar"): Georg Veit, Chief Executive Officer and Juergen Fehr, Managing Director.

Geenex Solar, the direct owner of Sweetleaf Solar, is a solar developer based in Charlotte NC. Geenex Solar is a Delaware limited liability company formed on July 18, 2013. Sweetleaf Solar LLC and Geenex Solar LLC are wholly-owned subsidiaries of the same parent company, Geenex Holding LLC ("Geenex Holding"). An organizational chart depicting the relationship among Sweetleaf Solar and Geenex Solar and Geenex Holding are attached as **Schedule 2**.

Geenex Solar has been focused on solar development in the southeastern U.S. since 2012 and currently has more than 40 solar PV facilities in various stages of development in North Carolina, Virginia, Kentucky, ~~Ohio~~Ohio, and Indiana. Geenex Solar has an aggregate pipeline of more than five gigawatts ("GW") of additional projects in the United States with the majority being PJM-interconnected projects.

Geenex-sourced projects are valued by the country's largest solar developers, ~~investors~~investors, and utilities for their well-sited locations, their adherence to best-development

practices and their standards that meet and usually exceed county and state requirements. Geenex Solar has proven experience to prepare a site for development as a solar facility. Its experts serve to lead important aspects of the development process including land acquisition, site analysis, environmental assessments, facility permitting, utility ~~interconnection~~interconnection, and power purchase agreements. Our partners and investors understand that our projects will be developed on-time, on-budget, and in accordance with all local, state and federal permitting requirements. As mentioned in this application, Geenex Solar has developed or is developing 40 solar facilities throughout the United States including projects in Kentucky, Virginia, Ohio, Indiana, and North Carolina. With the completion of these additional projects and the Project, Geenex Solar expects to develop approximately five GW of capacity across the United States. Geenex Solar's business model is ultimately to sell its solar projects to collaborating partners for construction and operation of the facilities.

Geenex Solar also has the financial capacity to build and operate the Project. The development of the Project is funded by Geenex Solar through readily available funds and a credit facility provided by a specialty lender. Geenex has a proven track record of partnering with large reputable investors and renewable energy firms to take permitted projects through construction to commercial operation. Geenex has achieved this through a network of ongoing relationship and partnerships with specialty lenders, financial institutions and funds, utilities and national and international renewable energy firms. Looking only at large transmission connected projects, there are currently three (3) Geenex developed projects totaling 230 MW in operation (all in NC), and a further five (5) projects totaling 340 MW under construction (one in North Carolina).

Correspondence, documents, and filings regarding this application should be addressed as follows:

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(980) 237-7926
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with copies to:

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(iii) A copy of Geenex Holding’s most recent balance sheet and income statement is attached as **Confidential Schedule 3**.

(iv) Applicant’s other affiliated generating facilities: Geenex Solar LLC has an extensive track record in developing, financing, and building solar projects. Geenex Solar has developed nine solar generating facilities currently operational in the Southeastern Electric Reliability Council (“SERC”) region, with an aggregate system capacity of 311 MW. These projects interconnect with Virginia Electric and Power Company, d/b/a Dominion Energy North Carolina (“Dominion”), as described in the following chart.

Geenex Solar Projects Operating in the SERC Region

Project	Location	System Size (MWac)	Interconnecting Utility	Offtaker	Commercial Operation Date
Halifax	Halifax County, NC	20	Dominion Distribution	Dominion	2014 (Sold)
HXNAIR	Halifax County, NC	5	Dominion Distribution	Dominion	2016 (Sold)
Gauss	Halifax County, NC	5	Dominion Distribution	Dominion	2018 (Sold)

Hemlock	Northampton County, NC	5	Dominion Distribution	Dominion	2016 (Sold)
Sunflower	Halifax County, NC	16	Dominion Distribution	Dominion	2017 (Sold)
Cork Oak	Halifax County, NC	20	Dominion Distribution	Dominion	2017 (Sold)
Cottonwood	Northampton County, NC	3	Dominion Distribution	Dominion	2018 (Sold)
Northern Cardinal	Halifax County, NC	2	Dominion Distribution	Dominion	2018 (Sold)
Pecan	Northampton County, NC	75	Dominion Transmission	PJM	2018 (Sold)
Gutenberg	Northampton County, NC	80	Dominion Transmission	PJM	2019 (Sold)
Chestnut	Halifax County, NC	80	Dominion Transmission	PJM	2020 (Sold)
TOTAL		311			

In addition to the completed projects, Geenex Solar either has or had an ownership interest in and is involved in developing the following 20 solar generating facilities with an aggregate capacity of 2739 MW in the SERC region, and each of the development projects is expected to interconnect to Dominion or East Kentucky Power Cooperative. There are currently five (5) additional Geenex developed transmission connected projects in Virginia and North Carolina under construction (total 415 MW AC).

Geenex Solar Projects Under Development in the SERC Region

Project	Location	System Size (MWac)	Development Status	COD (estimated)
Interconnected to Dominion				
Fern	Edgecombe County, NC	100	Construction	Q2 2020 (Sold)
American Beech	Halifax County, NC	110	CPCN process ongoing	Q4 2022 (Sold)
Grasshopper	Mecklenburg County, VA	80	Construction	Q4 2020 (Sold)
Water Strider Solar	Halifax County, VA	80	Construction	Q4 2020 (Sold)
Dragonfly Solar	Campbell County, VA	80	Construction	Q4 2020 (Sold)
Sumac Solar	Bertie County, NC	120	Local Permitting Secured; CPCN process ongoing	TBD
Macadamia Solar	Washington County, NC	484	Local Permitting Secured; CPCN to be filed soon	TBD
Firefly Solar	Pittsylvania County, VA	150	Development	TBD (Sold)
Monarch Butterfly Solar	Mecklenburg County, VA	80	Development	TBD
Cassius Blue	Sussex County, VA	394	Development	TBD
Perquimans	Perquimans County, NC	5	Local Permitting and CPCN secured	Q4 2021
Interconnected to East Kentucky Power Cooperative				
Bluebird	Harrison County, KY	80	Local use permit application process ongoing	Q4 2022 (Sold)
Great Blue Heron	Harrison County, KY	20	Local use permit application process ongoing	Q4 2022 (Sold)
Blue Moon	Harrison County, KY	70	Development	TBD (Sold)
Hummingbird	Fleming County, KY	200	Development	TBD (Sold)
Northern Bobwhite	Marion County, KY	96	Development	TBD
Woodpecker	Barren County, KY	120	Development	TBD
Gray Kingbird	Clark County, KY	350	Development	TBD
Winter Wren	Madison County, KY	90	Development	TBD
Little Gull	Boyle County, KY	30	Development	TBD
TOTAL		2,739		

Sweetleaf Solar LLC
Application Exhibit 2 [R8-63(b)(2)]

(i) Nature of proposed generating facility: Sweetleaf Solar is proposing to construct a 94 MW solar PV facility that will interconnect to Dominion Energy North Carolina's transmission system. The nameplate generating capacity of the facility will be 94 MW, with anticipated gross capacity of approximately 97.5 MW and anticipated generation of 210 GWh per year. Because solar power is subject to intermittent solar irradiance, Sweetleaf Solar's maximum dependable capacity is projected to be 0 MW during some hours of the day. Project construction is expected to begin on or about the second quarter of 2021, with an estimated date of commercial operation in fourth quarter of 2022. An itemized estimate of the construction costs is included as **Confidential Schedule 4**.¹ The expected service life of the facility is 20 years, with an additional 15-year service life, assuming equipment updates are made, for a total of 35 years. Additional details concerning the proposed electrical configuration of the Facility are described in the **Prefiled Direct Testimony of Donna Robichaud**, filed herewith.

(ii) Site plan: A color site plan map ("Site Plan") showing the proposed site boundary and layout with all major equipment, planned and existing roads, and planned and existing electric facilities is attached as **Schedule 5**.

(iii) Locational information: The Sweetleaf Solar Project is made up of portions of land owned by seven (7) different landowners who in total own 2,894.86 acres of privately-owned land north of Enfield in Halifax County, North Carolina. The Project is located generally east and west of Justice Branch Road, between Delmar Road and Beaverdam Road, north of Enfield, North Carolina. It will include approximately 1,235.04 fenced acres of this privately-owned land plus

¹ Schedule 5 has been designated as confidential because the construction estimate contains confidential information within the scope of G.S. § 132.1.2.

land outside the fence that will be used for screening and other project needs. The GPS coordinates of the approximate center of the facility are latitude 36.232520; longitude -77.659732. The main project Substation location will be located at 3901 Beaverdam Rd, Town of Enfield, NC 27823. There will be 6 access points located off the main roads for the Facility. The project has not yet been assigned an e911 address by Halifax County.

(iv) The Facility is not a natural gas-fired facility.

(v) Required approvals: The following is a list of all necessary federal, state, and local approvals related to the Facility and the site and the status of such approval or a copy thereof, if obtained.

Federal:

1. In Fall 2020, Sweetleaf Solar plans to submit a wetlands delineation study to the U.S. Army Corps of Engineers (“Corps”) to determine whether any of the streams and wetlands on the site are jurisdictional waters and/or Waters of the United States, requiring a permit for construction under Section 404 of the federal Clean Water Act. To the extent that overhead collection lines cross jurisdictional wetlands, Geenex intends to seek coverage under applicable Nation Wide Permits.
2. Prior to commencing operation, Sweetleaf Solar may apply for Market-Based Rate Authorization from the Federal Energy Regulatory Commission (“FERC”), pursuant to Sections 205 and 206 of the Federal Power Act.
3. Sweetleaf Solar may seek to self-certify with FERC as an Exempt Wholesale Generator pursuant to the Public Utility Holding Company Act of 2005.
4. Sweetleaf Solar will be required to conduct a glare study for the Project pursuant to Federal Aviation Administration (“FAA”) requirements, and to submit that study to the FAA for

review. This study is expected to be complete in Fall 2020.

State:

1. Sweetleaf Solar will likely require the approval of an erosion and sedimentation control plan for its construction activities from the North Carolina Department of Environmental Quality.
2. Sweetleaf Solar will require a driveway permits from the North Carolina Department of Transportation.

Local:

1. Sweetleaf Solar requires a conditional use permit (“CUP”) from Halifax County. Sweetleaf Solar obtained its CUP approval on August 13, 2019 by the Halifax County Board of Adjustment. The Certificate of Zoning Compliance and CUP Approval are included as **Schedule 6**. Consistent with local zoning and the requirements of the Halifax County Solar Energy Systems Ordinance (“Ordinance”) under which the Project was approved, the Project site is buffered from view from most roadways by natural vegetative buffering and continuing farm operations. In addition, significant setbacks and additional vegetative buffering have been provided to neighboring landowners. Each Landowner’s site control agreement includes a decommissioning plan, attached as **Schedule 7**, which was filed with local zoning authorities as required by the Ordinance. The decommissioning plan provides that at the end of the Facility’s useful life, the Site will be stabilized and restored in such a manner to ensure it is clean, safe, and environmentally stable. Environmentally conscious practices are developing so that solar PV panels can be collected and recycled at the end of their useful life rather than deposited in a landfill.²

² NC Clean Energy Technology Center, “Health and Safety Impacts of Solar Photovoltaics” (May 2017),

2. Sweetleaf Solar will submit an application for a stormwater permit to Halifax County, and will need to confirm that the Facility has satisfied all of the requirements for a stormwater permit application.
3. Sweetleaf Solar will require a Building Permit from Halifax County.
4. Sweetleaf Solar will require an Electrical Permit from Halifax County.

Other:

1. Sweetleaf Solar will register as a Generator-Owner with the South American Electric Reliability Council (“SERC”).

(vi) Description of transmission facilities: The Sweetleaf Solar Project will interconnect with the transmission grid owned by Dominion Energy North Carolina, and has been assigned interconnection request numbers AD1-056 and AD1-057. The Project will interconnect with the PJM transmission system via a new three breaker ring bus switching station that connects on the Hornertown-Hathaway ~~230kV~~230 kV line after a new step-up transformer. A color map showing the location of the interconnection points and transmission facilities is included in the Site Plan attached as **Schedule 5**. Geenex has obtained all necessary rights-of-way for construction of transmission facilities or other equipment related to interconnection.

Sweetleaf Solar, LLC Exhibit 3 [R8-63(b)(3)]
Description of the need for the facility in the state and/or region

Sweetleaf Solar and its collaborators on this Project, Geenex Solar, expect North Carolina and its surrounding region to benefit from the Project by satisfying a growing demand for renewable power in the region, and by providing economic development and other benefits in Halifax County. The Sweetleaf Solar Project will interconnect with the Dominion Energy transmission grid, affording it access to the PJM Interconnection (“PJM”), a Regional Transmission Organization (“RTO”) in which Dominion participates. There are several opportunities to sell the output (i.e., offtake) and services from the project, including (1) the PJM Interconnection wholesale market, (2) ancillary services sales under the PJM tariffs; and (3) Corporate Agreements. These are discussed in turn below.

In regard to (1) above, PJM Interconnection wholesale markets provide opportunities to sell output through the energy and capacity market. Through the energy markets, low-cost solar resources compete to meet the demand throughout the PJM footprint. PJM capacity market provides opportunities to sell capacity.

In regard to (2) above, FERC Rate Schedule No. 1 sets forth the cost-based revenue requirements for the provision of Reactive Supply and Voltage Control from Generation Source Service under Schedule 2 of PJM’s Open Access Transmission Tariff. Multiple solar projects have applied and are now eligible to receive revenue under this provision. Other solar projects aggregating to more than 300 MW of capacity that have already qualified for Tariff filings. Geenex expects the Project also to qualify for this tariff and to generate revenue from the sale of reactive power and voltage control services.

For Corporate Agreements, according to Renewable Energy World, Corporate buyers led

the efforts of over 7 GW of renewable energy purchase in 2019 and the trend continues to escalate.³ Given the robust demand for corporate purchases, solar projects in PJM’s southern portion with higher solar resources are uniquely positioned to attract buyers and many similar projects have secured agreements. Geenex expects this trend to continue.

Geenex Solar has substantial experience with offtake in the PJM market and the expectations for power purchase from the PJM market in the southeast United States are strong. Geenex Solar, with its partners/investors, has previously secured and is actively negotiating for over 1800 MW of offtake within the PJM market, and is using this experience to secure offtake for the Sweetleaf Solar Project. Geenex Solar is actively fielding inquiries from investors interested in Sweetleaf Solar’s purchase and/or offtake.

The Applicant anticipates contracting the sale of energy, capacity, and Renewable Energy Credits (“RECs”) through PJM. PJM is an RTO that coordinates the movement of electricity through all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia. Load growth for the PJM RTO as a whole, and more specifically for the Dominion Virginia power zone, which serves parts of Eastern North Carolina and Virginia, is expected to increase over the next ten to fifteen years as described below for both winter and summer months. Summer peak load in PJM is expected to grow by 0.6% per year over the next ten years, and by 0.5% over the next 15 years.⁴ For the Dominion Virginia Power zone, summer peak load growth is expected to grow by 1.2% per year over the next ten years, and 1.0% per year over the next

³ <https://www.renewableenergyworld.com/2019/10/29/reba-corporate-renewable-energy-buyers-set-new-record-in-2019/>

⁴ 2020 PJM Load Forecast Report (January 2020), available at <https://www.pjm.com/-/media/library/reports-notices/load-forecast/2020-load-report.ashx?la=en>, at 38-44.

fifteen years.⁵ The anticipated ten-year summer peak load growth in the Dominion Virginia Power zone represents 1.3% growth over the January 2019 load forecast report.⁶

Winter peak load growth in PJM is projected to average 1.4% per year over the next 10-year period, and 1.2% over the next 15-years.⁷ Winter peak load growth for the Dominion Virginia Power zone is expected to grow by 0.9% per year over the ten years, and 0.9% per year over the next nine to fifteen years.⁸ The anticipated ten-year winter peak load growth in the Dominion Virginia Power zone represents 10.2% growth over the January 2019 load forecast report.⁹ The PJM service area of North Carolina has slightly higher projected load growth than Virginia. North Carolina is expected to average between 0.9 and 1.1% per year over the next 10 years versus the PJM RTO load growth projections to average approximately 0.3% over the next ten years.¹⁰

Demand for renewable power is expected to increase in the Southeast over the expected lifetime of the Project. As noted on **Schedule 8**, the Business Renewables Center, a non-profit initiative that is the leading industry convener between corporate renewable energy buyers and renewable energy developers, predicts that the demand for renewable energy in the PJM market, described below, will increase over the next year as shared in a chart with its members in April 2018. Projections from PJM indicate that the demand for power, particularly in the Southeast, will

⁵ *Id.*

⁶ *Id.* at 40.

⁷ *Id.* at 47-48.

⁸ *Id.*

⁹ *Id.*

¹⁰ PJM, 2019 North Carolina State Infrastructure Report (January 1, 2019 – December 31, 2019), May 2020, 21, available at <https://www.pjm.com/-/media/library/reports-notice/state-specific-reports/2019/2019-north-carolina-state-data.ashx?la=en>.

increase as described below. The Applicant believes that healthy market conditions will create sustainable offtake for its production.

In addition, on May 1, 2020, Dominion Energy Virginia filed a 15-year Integrated Resource Plan (“IRP”) almost quadrupling the amount of solar in its planned generation portfolio, from 4400 MW in its 2019 IRP to 15,900 MW. Dominion has also issued a request for proposal soliciting bids for up to 1,000 megawatts (MW) of solar and onshore wind generation. Dominion’s commitment is consistent with state-level policy set by the Virginia General Assembly, which affirmed the growing importance of renewable energy generation in passing the Grid Transformation and Security Act of 2018 (the “GTSA”), signed into law by Governor Ralph Northam on March 9, 2018. The GTSA finds that up to an additional 5,000 MW of utility-scale electric generating facilities powered by solar and wind energy is in the public interest, along with up to an additional 500 MW of non-utility scale solar or wind generating facilities, including rooftop solar installations. In addition, on March 6, 2020 the Virginia General Assembly passed Virginia SB 851, which dramatically accelerates and increases the need for solar power facilities in that state.¹¹ The law calls for Dominion Energy Virginia and the smaller Appalachian Power Co. to supply 30 percent of their power from renewables by 2030, and to close all carbon-emitting power plants by 2045 for Dominion and by 2050 for Appalachian. These laws will ensure a robust market for renewable resources in PJM territory over the lifetime of the Project.

¹¹ See Jeff St. John, Virginia Mandates 100% Clean Power by 2045, The Clean Economy Act will drive utility Dominion to procure gigawatts of solar, offshore wind and energy storage,” Mar. 6, 2020, Greentech Media, available at <https://www.greentechmedia.com/articles/read/virginia-100-clean-energy-by-2050-mandate-law>; Gregory S. Schneider, “Virginia passes sweeping law to mandate clean energy amid questions about cost,” Mar. 6, 2020, available at https://www.washingtonpost.com/local/virginia-politics/virginia-dominion-energy-bill/2020/03/06/4524cd20-5fc1-11ea-b29b-9db42f7803a7_story.html

Sweetleaf Solar LLC
Application for a Certificate of Public Convenience and Necessity for a Merchant Plant
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Schedules

Schedule 1 – Limited Liability Articles of Organization

Schedule 2 – Organizational Chart

Schedule 3 – Balance Sheet and Income Statement for Geenex Solar ***CONFIDENTIAL***

Schedule 4 – Estimated Construction Costs ***CONFIDENTIAL***

Schedule 5 – Site Plan

Schedule 6 – Certificate of Zoning Compliance and CUP Approval

Schedule 7 – Decommissioning Plan

Schedule 8 – Chart of Renewables Offtake Projections

VERIFICATION

STATE OF North Carolina COUNTY OF Lincoln

Donna Robichaud
Signature of Owner's Representative or Agent

SR VP DEVELOPMENT STRATEGY
Title of Representative or Agent

DONNA ROBICHAUD
Typed or Printed Name of Representative or Agent

The above named person personally appeared before me this day and, being first duly sworn, says that the facts stated in the foregoing application and any exhibits, documents, and statements thereto attached are true as he or she believes.

WITNESS my hand and notarial seal, this 27 day of May, 2020.

My Commission Expires: Feb 7, 2021

Michael L Price
Signature of Notary Public

Michael L Price
Name of Notary Public – Typed or Printed



This original verification must be affixed to the original application, and a copy of this verification must be affixed to each of the copies that are also submitted to the Commission.

CERTIFICATE OF SERVICE

This is to certify that the undersigned has this day served the foregoing **APPLICATION FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR A MERCHANT PLANT** upon the following by electronic mail as follows:

Christopher Ayers, Esq.
Executive Director - NC Public Staff Chris.Ayers@psncuc.nc.gov

Megan Jost
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Layla Cummings
NC Public Staff - Legal Division Layla.cummings@psncuc.nc.gov

This the 2d day of June 2020.

/s/ _____
Benjamin L. Snowden