



**NORTH CAROLINA  
PUBLIC STAFF  
UTILITIES COMMISSION**

November 13, 2020

Ms. Kimberley A. Campbell, Chief Clerk  
North Carolina Utilities Commission  
4325 Mail Service Center  
Raleigh, North Carolina 27699-4300

Re: Docket No. EMP-111, Sub 0 – Application for Certificate of Public Convenience and Necessity to Construct a 94-MW Solar Facility in Halifax County, North Carolina

Dear Ms. Campbell:

In connection with the above-referenced docket, I transmit herewith for filing on behalf of the Public Staff the supplemental testimony of Jay B. Lucas, Manager, Electric Section – Operations and Planning, Energy Division. By copy of this letter, I am forwarding a copy to all parties of record by electronic delivery.

Sincerely,

/s/ Megan Jost  
Staff Attorney  
[megan.jost@psncuc.nc.gov](mailto:megan.jost@psncuc.nc.gov)

Attachment

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BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. EMP-111, SUB 0

In the Matter of	)	
Application of Sweetleaf Solar LLC for	)	SUPPLEMENTAL
a Certificate of Public Convenience and	)	TESTIMONY OF
Necessity to Construct a 94-MW Solar	)	JAY B. LUCAS
Facility in Halifax County, North	)	PUBLIC STAFF – NORTH
Carolina	)	CAROLINA UTILITIES
	)	COMMISSION

**BEFORE THE NORTH CAROLINA UTILITIES COMMISSION  
DOCKET NO. EMP-111, SUB 0**

**Supplemental Testimony of Jay B. Lucas**

**On Behalf of the Public Staff**

**North Carolina Utilities Commission**

**November 13, 2020**

1 **Q. PLEASE STATE YOUR NAME AND ADDRESS FOR THE**  
2 **RECORD.**

3 A. My name is Jay B. Lucas. My business address is 430 North  
4 Salisbury Street, Raleigh, North Carolina.

5 **Q. BRIEFLY STATE YOUR QUALIFICATIONS AND DUTIES.**

6 A. My qualifications and duties are included in Appendix A.

7 **Q. WHAT IS YOUR POSITION WITH THE PUBLIC STAFF?**

8 A. I am the manager of the Electric Section – Operations and Planning  
9 in the Public Staff's Energy Division.

10 **Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL**  
11 **TESTIMONY IN THIS PROCEEDING?**

12 A. On September 18, 2020, I filed direct testimony in this docket  
13 regarding the request filed by Sweetleaf Solar LLC (Sweetleaf or

1 Applicant) on June 2, 2020, for a certificate of public convenience and  
2 necessity (CPCN) to construct a 94-megawatt AC (MW<sub>AC</sub>) solar  
3 photovoltaic electric generating facility in Halifax County, North  
4 Carolina (the Facility). In my direct testimony I noted my concern that  
5 insufficient information was available regarding the costs to construct  
6 the Facility, including the costs of any interconnection and  
7 transmission network upgrades, to recommend approval of the CPCN.  
8 In order to address concerns raised by the increasing amount of non-  
9 utility generation being proposed for construction in the state, I  
10 recommended that the Commission hold Sweetleaf's CPCN  
11 application in abeyance pending the filing of comments and reply  
12 comments in the proceeding established by the Commission in Docket  
13 No. E-100, Sub 170 (Sub 170 Proceeding), and the opportunity to  
14 review the affected system study costs for PJM cluster AD1.

15 On September 28, 2020, the Applicant filed a motion requesting that  
16 the Commission issue an order directing the Public Staff to file  
17 supplemental testimony and exhibits addressing the filings in the Sub  
18 170 Proceeding and the cluster AD1 affected system study,  
19 extending the Applicant's deadline to file responsive testimony and  
20 exhibits, and rescheduling the evidentiary hearing. The Commission  
21 granted the Applicant's motion by Order issued September 29, 2020.

22 On October 15, 2020, the Applicant filed a letter informing the  
23 Commission of the sale of the Facility to EDF Renewables

1 Development, Inc. (EDF Renewables), and indicating that the  
2 Applicant would provide supplemental testimony regarding EDF and  
3 notify the Commission of any changes to the contents of the  
4 application resulting from the sale. On November 12, 2020, the  
5 Applicant filed a supplemental application and the direct testimony of  
6 Emily Dalager, Project Development Manager with EDF. The Public  
7 Staff has reviewed the supplemental application and testimony of  
8 witness Dalager and does not take issue with either filing.

9 The purpose of my supplemental testimony is to make additional  
10 recommendations to the Commission on Sweetleaf's application;  
11 based on new information regarding the costs of transmission  
12 network upgrades.

13 **Q. PLEASE DESCRIBE THE PLANNED INTERCONNECTION OF**  
14 **THE FACILITY.**

15 A. The Facility will interconnect to the Hornertown-Hathaway 230  
16 kilovolt (kV) transmission line owned by Virginia Electric and Power  
17 Company, d/b/a Dominion Energy North Carolina (DENC). Since  
18 DENC is part of PJM Interconnection (PJM), the Applicant is required  
19 to enter into an interconnection service agreement with both entities.  
20 The Facility has PJM queue number AD1-056/AD1-057. AD1-056  
21 represents 60 MW of capacity, and AD1-057 represents 34 MW of  
22 capacity.

1 **Affected System Studies**

2 **Q. COULD THE FACILITY AFFECT DEP’S TRANSMISSION LINES?**

3 A. Yes. According to the to the direct testimony and supplemental  
4 testimony of the Applicant’s witness, Donna Robichaud, PJM has  
5 determined that generation by the Facility has the potential to affect  
6 three transmission lines owned by Duke Energy Progress, LLC  
7 (DEP): the Rocky Mount-Battleboro 115 kV line, the Everetts-  
8 Greenville 230 kV line, and the Rocky Mount-Hathaway 230 kV line.  
9 DEP must perform affected system studies to determine the  
10 upgrades and costs necessary for the Facility and other solar  
11 projects in DENC territory to interconnect.

12 **Q. PLEASE SUMMARIZE THE PUBLIC STAFF’S CONCERNS**  
13 **REGARDING THE FACILITY AND OTHER MERCHANT POWER**  
14 **FACILITIES IN DENC.**

15 A. The Public Staff is concerned that (1) the large amount of solar  
16 capacity in PJM’s North Carolina queue (over 6,600 MW) could  
17 trigger many millions of dollars of affected system upgrades that  
18 DEP’s customers would have to pay for but may not need for reliable  
19 electric service; (2) the Virginia Clean Economy Act<sup>1</sup> could lead to  
20 more renewable energy facilities in Virginia near DENC territory,

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<sup>1</sup> The Virginia Clean Economy Act, signed into law on April 11, 2020, set clean energy and carbon emissions standards, and included numerous other requirements to encourage the adoption and construction of clean energy in Virginia. The full bill summary is located at <https://lis.virginia.gov/cgi-bin/legp604.exe?201+sum+HB1526>.

1 which would be above those facilities in the PJM's North Carolina  
2 queue, increasing the risk for more affected system upgrades for  
3 DEP; (3) DEP could build network upgrades that go unused for  
4 extended periods of time if some interconnection projects withdraw  
5 from the queue late in the review process; and (4) in order to  
6 accommodate future clusters, upgrades to accommodate an earlier  
7 cluster may need to be replaced with even greater transmission  
8 assets long before the end of their normal service life of 40 to 60  
9 years, thereby resulting in stranded costs that would be borne by  
10 DEP's customers.

11 **Q. PLEASE DESCRIBE DEP'S AFFECTED SYSTEM STUDIES.**

12 A. DEP completed an affected system study for its Rocky Mount-  
13 Battleboro line in May 2020 for PJM cluster AC1 (DEP AC1 Report),  
14 but this report does not include upgrades needed for PJM cluster  
15 AD1. The total projected cost for upgrade of the Rocky Mount-  
16 Battleboro line is \$23,204,593. DEP is currently developing 22 other  
17 affected system studies with a combined capacity of 2,676 MW and  
18 had anticipated completing several of them by October 1, 2020.  
19 Lucas Exhibit 2 to my direct testimony contains a table that lists the  
20 studies and their estimated completion dates. As of this date, DEP  
21 has not completed any of the studies listed and is not developing  
22 affected system studies for the Everetts-Greenville 230 kV line or the  
23 Rocky Mount-Hathaway 230 kV line.

1 **Q. PLEASE DESCRIBE DEP'S PREVIOUS PROCESS FOR**  
2 **AFFECTED SYSTEM REVIEW AND COST RECOVERY.**

3 A. In the past, if one or more generator(s) caused affected system  
4 costs, the generator(s) would be responsible for these network  
5 upgrade costs, consistent with the Joint Open Access Transmission  
6 Tariff of Duke Energy Carolinas, LLC (DEC), Duke Energy Florida,  
7 LLC (DEF), and DEP (Duke OATT). However, pursuant to the  
8 previous Duke OATT, upon commercial operation, the generator(s)  
9 that paid for the network upgrades would be entitled to receive  
10 repayment from DEP of the entire balance of the network upgrades  
11 cost plus interest at the monthly interest rates posted by the Federal  
12 Energy Regulatory Commission (FERC). Following repayment, DEP  
13 would seek to recover those costs from its wholesale and retail  
14 customers.

15 DEP and DEC have changed their affected system review and cost  
16 recovery process as I discuss below.

17 **Docket No. E-100, Sub 170**

18 **Q. PLEASE PROVIDE A BRIEF SUMMARY OF DOCKET NO. E-100,**  
19 **SUB 170.**

20 A. On September 16, 2020, the Commission issued its *Order Requiring*  
21 *Comments and Reply Comments Regarding Affected System Study*  
22 *Process and Cost Allocation* in the Sub 170 Proceeding. On October

1 7, 2020, DENC filed comments and DEC and DEP (collectively,  
2 Duke) filed joint comments in the Sub 170 Proceeding. Duke  
3 provided as Attachment A to its comments the new Affected Systems  
4 Process that became effective on October 1, 2020. On October 28,  
5 2020, the Public Staff and Geenex Solar, LLC (Geenex), filed reply  
6 comments. On that same date, the North Carolina Clean Energy  
7 Business Alliance and the North Carolina Sustainable Energy  
8 Association (collectively, NCCEBA-NCSEA) filed joint reply  
9 comments. The information gathered in the Sub 170 Proceeding  
10 could assist the Commission in determining whether proposed  
11 merchant generating facilities triggering significant network upgrade  
12 costs or affected system costs are in the public convenience and  
13 necessity.

14 **Q. PLEASE SUMMARIZE THE COMMENTS OF DEP AND DEC IN**  
15 **THE SUB 170 PROCEEDING.**

16 A. Duke stated on page 3 of its October 7, 2020, response that  
17 merchant generators would be responsible for any affected systems  
18 upgrade costs:

19 Historically, interconnection customers that were  
20 assigned affected system network upgrades in  
21 DEP/DEC/DEF were reimbursed after the applicable  
22 projects achieved commercial operation pursuant to  
23 the terms of the affected system operating agreement.  
24 However, DEP and DEC (along with Duke Energy  
25 Florida, LLC) implemented a change to its standard

1 affected system operating agreement effective October  
2 1, 2020 that eliminated the reimbursement.

3 **Q. PLEASE SUMMARIZE THE COMMENTS OF DENC.**

4 A. DENC also confirmed that the generator would be responsible for  
5 any affected systems upgrade costs, consistent with how it has  
6 treated those costs historically

7 **Q. PLEASE SUMMARIZE THE PUBLIC STAFF'S REPLY**  
8 **COMMENTS IN THE SUB 170 PROCEEDING.**

9 A. As stated in the Public Staff's reply comments, the recent change to  
10 Duke's affected systems studies process addresses a key concern  
11 raised by the Public Staff in recent merchant generator CPCN  
12 proceedings that affected system upgrade costs could be passed on  
13 to a utility's customers who were not causing or contributing to the  
14 need for the upgrade. Thus, the Public Staff is supportive of the  
15 proposed revisions. This change also brings Duke's costs  
16 responsibility and cost allocation procedures for affected systems in  
17 alignment with those of DENC.

18 Also in its Sub 170 comments, the Public Staff recommended that,  
19 going forward, the Commission should condition any CPCN approval  
20 for a merchant facility that includes potential affected system  
21 Network Upgrade costs to require the Applicant to file a copy of an  
22 executed Affected Systems Operating Agreement (ASOA) with the  
23 Commission at the same time such filing is made at FERC (at least

1 61 days prior to commencing construction on the upgrades). The  
2 Public Staff also recommended that the CPCN applicant file a  
3 verified statement acknowledging that under Duke's Affected  
4 Systems Business Procedure and PJM's OATT, the Interconnection  
5 Customer is responsible for all affected system Network Upgrade  
6 costs without reimbursement.

7 **Q. DOES THE PUBLIC STAFF HAVE ANY COMMENTS ON THE**  
8 **OTHER PARTIES' REPLY COMMENTS FILED IN THE SUB 170**  
9 **PROCEEDING AS THEY APPLY TO THIS APPLICATION?**

10 A. In its joint reply comments, NCCEBA-NCSEA stated that Duke's  
11 policy change to deny reimbursement for FERC-jurisdictional  
12 network upgrade costs is a "sweeping policy change" and "it is far  
13 from clear that Duke may do so without FERC approval." (NCCEBA-  
14 NCSEA Reply Comments, p. 5.)

15 Geenex, a co-developer of this facility and the Sumac Solar LLC,  
16 facility proposed in Docket No. EMP-110, Sub 0, similarly stated in  
17 its reply comments that "Duke's elimination of cost reimbursement  
18 for Affected System Upgrades is a substantial change in policy."  
19 (Geenex Reply Comments, p 19.) Geenex further stated that,  
20 because the policy is new, it has not had the opportunity to assess  
21 whether it must be approved by FERC or whether it is consistent with  
22 FERC requirements. (Id. at 3, n.1.)

1           The Public Staff agrees that, if the new policy were challenged at  
2           FERC and the challenging parties were successful in shifting cost  
3           responsibility ultimately back to DEP's retail and wholesale  
4           ratepayers, it would be appropriate for the affected system costs to  
5           be considered by the Commission as part of a determination of  
6           whether a facility is in the public convenience and necessity. Given  
7           the recent changes to Duke Energy's Affected System process, the  
8           continued interest in solar development in North Carolina, and the  
9           current cost estimates or tools used to evaluate the reasonableness  
10          of the costs be passed onto ratepayers (e.g., LCOT benchmark), and  
11          the fact that an affected system study has not been completed or  
12          considered, if any path remains open that would place undue costs  
13          on to ratepayers, the Public Staff believes too much uncertainty  
14          exists regarding the magnitude and responsibility of these costs to  
15          make a determination as to whether the Facility is in the public  
16          convenience and necessity at this time.

17          In the event the Commission has already issued a CPCN for a facility  
18          and new costs are subsequently assigned to the facility that will  
19          ultimately be borne by North Carolina retail ratepayers, the Public  
20          Staff believes the Commission should reconsider the issuance of the  
21          CPCN after the Applicant has provided accurate updated cost  
22          estimates.

1 **Recommendation on the Application**

2 **Q. WHAT IS THE PUBLIC STAFF’S RECOMMENDATION ON**  
3 **SWEETLEAF’S APPLICATION FOR A CPCN?**

4 A. The Public Staff has reviewed the application and supplemental  
5 application, the testimony the Applicant’s witnesses Robichaud,  
6 Price, and Dalager, and the other evidence in this docket. The Public  
7 Staff has also reviewed the comments and reply comments in the  
8 Sub 170 Proceeding. Based on this information, and subject to the  
9 Public Staff’s understanding that DEP and DENC’s current  
10 interconnection procedures applicable to merchant generation do not  
11 provide for reimbursement for interconnection facilities or network  
12 upgrade costs, affected system costs, or other costs required to allow  
13 energization and operation of the Facility, the Public Staff  
14 recommends that the Commission issue the CPCN, subject to the  
15 following conditions:

16 i. The Applicant shall file a copy of an executed Affected  
17 System Operating Agreement (ASOA) with the  
18 Commission at the same time such filing is made at FERC  
19 (at least 61 days prior to commencing construction on the  
20 upgrades).

21 ii. The Applicant shall file a verified statement acknowledging  
22 that, under Duke’s Affected Systems Business Procedure

1 and PJM's OATT, the Interconnection Customer is  
2 responsible for all affected system Network Upgrade  
3 Costs assigned to the Applicant's facility, if any, without  
4 reimbursement.

5 iii. The Applicant shall notify the Commission of any change  
6 in the cost estimates for the construction of the Facility  
7 itself, interconnection facilities, network upgrades, or  
8 affected system costs within 30 days of becoming aware  
9 of such change.

10 iv. If at any time the Applicant seeks to be reimbursed for any  
11 interconnection facilities, network upgrade costs, affected  
12 system costs, or other costs required to allow energization  
13 and operation of the Facility, including as a result of any  
14 change to the DEP/DEC/DEF OATT or any other  
15 governing document(s), the Commission shall weigh the  
16 costs to be borne by DEP's retail and wholesale customers  
17 with the generation needs in the state or region consistent  
18 with its ruling in its Order Denying Application for a  
19 Certificate of Public Convenience and Necessity for a  
20 Merchant Generating Facility requested by Friesian  
21 Holdings, LLC, in Docket No. EMP-105, Sub 0.

22 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

23 A. Yes, it does.

## **QUALIFICATIONS AND EXPERIENCE**

JAY B. LUCAS

I graduated from the Virginia Military Institute in 1985, earning a Bachelor of Science Degree in Civil Engineering. Afterwards, I served for four years as an engineer in the Air Force performing many civil and environmental engineering tasks. I left the Air Force in 1989 and attended the Virginia Polytechnic Institute and State University (Virginia Tech), earning a Master of Science degree in Environmental Engineering. After completing my graduate degree, I worked for an engineering consulting firm and worked for the North Carolina Department of Environmental Quality in its water quality programs. Since joining the Public Staff in January 2000, I have worked on utility cost recovery, renewable energy program management, customer complaints, and other aspects of utility regulation. I am a licensed Professional Engineer in North Carolina.