



**NORTH CAROLINA  
PUBLIC STAFF  
UTILITIES COMMISSION**

March 23, 2021

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

Re: Docket No. EMP-112, Sub 0 - Oak Solar, LLC  
CPCN to construct an 120-MW Solar Facility in Northhampton  
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 confidential testimony of Jay B. Lucas, Utilities Engineer, Electric Division.

By copy of this letter, I am forwarding a copy of the public version to all parties of record by electronic delivery. The confidential version will be provided to those parties that have entered into a confidentiality agreement.

Sincerely,

Electronically submitted  
s/ Reita D. Coxton  
Staff Attorney  
[reita.coxton@psncuc.nc.gov](mailto:reita.coxton@psncuc.nc.gov)

RDC/adb

Attachment

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BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. EMP-112, SUB 0

In the Matter of	)	TESTIMONY OF
Application of Oak Solar, LLC, for a	)	JAY B. LUCAS
Certificate of Public Convenience and	)	PUBLIC STAFF – NORTH
Necessity to Construct an 120-MW	)	CAROLINA UTILITIES
Solar Facility in Northampton County,	)	COMMISSION
North Carolina	)	

**BEFORE THE NORTH CAROLINA UTILITIES COMMISSION**

**DOCKET NO. EMP-112, SUB 0**

**Testimony of Jay B. Lucas**

**On Behalf of the Public Staff**

**North Carolina Utilities Commission**

**March 23, 2021**

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 TESTIMONY IN THIS**  
11        **PROCEEDING?**

12   A.    The purpose of my testimony is to make recommendations to the  
13        Commission on the application, testimony, and related filings

1 regarding a solar photovoltaic facility in Northampton County, North  
2 Carolina that I describe more fully below.

3 **Q. PLEASE PROVIDE A BRIEF HISTORY OF THE APPLICATION.**

4 A. On July 15, 2020, Gaston Green Acres Solar, LLC, (Gaston Green  
5 Acres) filed an application for a certificate of public convenience and  
6 necessity (CPCN) to construct a 300-megawatt AC (MW<sub>AC</sub>) solar  
7 photovoltaic electric generating facility. The application included the  
8 testimony of witness Linda Nwadike.

9 On July 29, 2020, the Public Staff filed a Notice of Completeness for  
10 the Gaston Green Acres facility.

11 On September 28, 2020, the Commission issued its *Order*  
12 *Scheduling Hearings, Requiring Filing of Testimony, Establishing*  
13 *Procedural Guidelines, and Requiring Public Notice* (September 28  
14 Order). The September 28 Order required Gaston Green Acres to  
15 file supplemental testimony to answer questions from the  
16 Commission.

17 On October 19, 2020, Gaston Green Acres filed the supplemental  
18 testimony and exhibits of witness Nwadike that answered the  
19 Commission's questions. Witness Nwadike explained that the  
20 Gaston Green Acres facility will be divided into two facilities. Oak  
21 Solar, LLC (Oak Solar), owns the first facility (the Oak Solar facility)

1 with PJM interconnection queue AB1-132 and will have a capacity of  
2 120 MW. The second facility is owned by Cherry Solar, LLC, with  
3 PJM interconnection queue AC1-086 and will have a capacity of 180  
4 MW.

5 On November 13, 2020, Cherry Solar, LLC, filed an application for a  
6 CPCN in Docket No. EMP-115, Sub 0, for its 180-MW solar  
7 photovoltaic facility. Cherry Solar, LLC, later reduced the capacity to  
8 120 MW.

9 On December 18, 2020, the Commission issued its *Order*  
10 *Scheduling Hearings, Requiring Filing of Testimony, Establishing*  
11 *Procedural Guidelines, and Requiring Public Notice* (December 18  
12 Order), which, in part, required Oak Solar to file additional testimony  
13 on or before February 25, 2021, and required the Public Staff and  
14 other intervenors to file testimony on or before March 25, 2021.

15 On January 25, 2021, the State Clearinghouse filed comments  
16 requesting that Gaston Green Acres file additional information. The  
17 Department of Natural and Cultural Resources has recommended  
18 that a comprehensive archaeological survey of the project area be  
19 conducted by an experienced archaeologist.

20 On February 25, 2021, Oak Solar filed the additional testimony and  
21 exhibits of witness Nwadike. Her testimony provided answers to the

1 questions in the December 18 Order and provided the System  
2 Impact Study, the Facilities Study, and the Feasibility Study for the  
3 Oak Solar facility.

4 I. COMPLIANCE WITH THE SEPTEMBER 28 ORDER AND THE  
5 DECEMBER 18 ORDER

6 **Q. PLEASE DESCRIBE THE QUESTIONS THAT THE COMMISSION**  
7 **INCLUDED IN ITS SEPTEMBER 28 ORDER AND ITS DECEMBER**  
8 **18 ORDER.**

9 A. In its September 28 Order, the Commission noted the increase in  
10 non-utility generation on the North Carolina system and recognized  
11 its statutory duty to examine the long-range needs for the generation  
12 of electricity in North Carolina. It directed Gaston Green Acres to file  
13 additional testimony and exhibits addressing the following questions  
14 regarding its 300-MW solar photovoltaic facility:

- 15 1. Provide the amount of network upgrades on  
16 DENC's or any affected system's transmission  
17 system, if any, required to accommodate the  
18 operation of Gaston Green Acres's proposed  
19 facility.
- 20 2. Provide the Levelized Cost of Transmission  
21 (LCOT) information for any required  
22 transmission system upgrades or modifications.
- 23 3. Provide any interconnection study received for  
24 the proposed facility. If Gaston Green Acres has  
25 not received a study, provide a date by when the  
26 study is expected to be completed.
- 27 4. Are you aware of any system other than the  
28 studied system that is or will be affected by the

- 1 interconnection? If yes, explain the impact and  
2 basis.
- 3 5. If Gaston Green Acres proposes to sell energy  
4 and capacity from the facility to a distribution  
5 utility regulated by the Commission, provide a  
6 discussion of how the facility's output conforms  
7 to or varies from the regulated utility's most  
8 recent Integrated Resource Plan (IRP).
- 9 6. If Gaston Green Acres proposes to sell energy  
10 and capacity from the facility to a distribution  
11 utility not regulated by the Commission but  
12 serving retail customers in North Carolina (e.g.,  
13 a co-op or muni), provide a discussion of how  
14 the facility's output conforms to or varies from  
15 the purchasing distribution utility's long-range  
16 resource plan.
- 17 7. If Gaston Green Acres proposes to sell energy  
18 and capacity from the facility to a purchaser who  
19 is subject to a statutory or regulatory mandate  
20 with respect to its energy sourcing (e.g., a  
21 Renewable Energy Portfolio Standard (REPS)  
22 requirement or Virginia's new statutory mandate  
23 for renewables), explain how, if at all, the facility  
24 will assist or enable compliance with that  
25 mandate. Provide any contracts that support  
26 that compliance.
- 27 8. Provide any Power Purchase Agreements  
28 (PPA), Renewable Energy Certificate (REC)  
29 sale contracts, or contracts for compensation for  
30 environmental attributes for the output of the  
31 facility.
- 32 In its December 18 Order, the Commission asked the same  
33 questions for the Oak Solar facility.
- 34 **Q. DID WITNESS NWADIKE PROVIDE LCOT CALCULATIONS FOR**  
35 **PJM NETWORK UPGRADES IN HER SUPPLEMENTAL**  
36 **TESTIMONY?**
- 37 A. Yes, in her testimony filed on October 19, 2020, witness Nwadike  
38 provided LCOT calculations for the Gaston Green Acres facility. Her

1 testimony filed on February 25, 2021, calculated an LCOT for the  
2 Oak Solar facility of [BEGIN CONFIDENTIAL] [REDACTED] [END  
3 CONFIDENTIAL] for network upgrades in PJM with an anticipated  
4 total cost of [BEGIN CONFIDENTIAL] [REDACTED] [END  
5 CONFIDENTIAL].

6 II. AFFECTED SYSTEM UPGRADES

7 Q. WILL THE OAK SOLAR FACILITY REQUIRE ANY AFFECTED  
8 SYSTEM UPGRADES?

9 A. No. Interconnection of PJM cluster AA2 required Duke Energy  
10 Progress, LLC (DEP), to upgrade its portion of the Rocky Mount-  
11 Battleboro 115 kilovolt transmission line at an estimated cost of  
12 \$661,702. This upgrade eliminated any need for affected system  
13 upgrades for PJM cluster AB1.

14 Q. WHAT IS THE LATEST SCHEDULE FOR DEP'S AFFECTED  
15 SYSTEMS STUDIES FOR OTHER FACILITIES IN PJM  
16 TERRITORY?

17 A. On March 5, 2021, DEP provided the Public Staff with its latest  
18 schedule for completing affected system studies. This schedule is  
19 shown in **Lucas Exhibit 1**.

20 III. CONCLUSIONS AND RECOMMENDATIONS



1     **Q.     WHAT IS THE PUBLIC STAFF'S RECOMMENDATION ON OAK**  
2           **SOLAR'S APPLICATION FOR A CPCN?**

3     A.     After reviewing the application, the direct and supplemental  
4           testimony of witness Nwadike, and the other evidence in the record  
5           and obtained through discovery, the Public Staff recommends that  
6           the Commission approve the application and grant the CPCN to Oak  
7           Solar for its 120-MW solar photovoltaic facility, subject to the  
8           following conditions:

- 9           1.     Oak Solar shall construct and operate the Oak Solar facility in  
10           strict accordance with applicable laws and regulations,  
11           including any local zoning and environmental permitting  
12           requirements;
- 13          3.     The CPCN shall be subject to Commission Rule  
14           R8-63(e) and all orders, rules and regulations as are now or  
15           may hereafter be lawfully made by the Commission;
- 16          4.     Oak Solar shall file with the Commission in this docket a  
17           progress report on the construction of the Oak Solar facility on  
18           an annual basis; and
- 19          5.     Oak Solar shall file with the Commission in this docket any  
20           revisions in the cost estimates for the construction of the Oak

1                   Solar facility or any Network Upgrades within 30 days of  
2                   becoming aware of such revisions.

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

4   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.



Lucas Exhibit 1

DEP's schedule for completing affected system studies as of March 5, 2021:

Neighboring Utility	Queue #	MW Capacity	Name and Voltage of Transmission Line	Estimated Study Date
PJM	AD1-023	40	Cashie-Trowbridge 230 kV	3/15/2021
PJM	AD1-057	34	Hornertown-Hathaway 230 kV	3/15/2021
PJM	AD1-076	109	Trowbridge 230 kV	3/15/2021
PJM	AD2-033	130	Chase City-Lunenburg 115 kV	3/15/2021
PJM	AD2-046	80	Boydton DP-Kerr Dam 115 kV	3/15/2021
PJM	AD2-051	74.9	Earleys – Northampton 230kV	3/15/2021
PJM	AD2-063	149.5	Central-Chase City 115kV	3/15/2021
PJM	AE1-026	80	Cashie 230 kV	
PJM	AE1-056	60	Red House-South Creek 115 kV	
PJM	AE1-072	150	Shawboro-Sligo 230 kV	
PJM	AE1-148	90	Kerr Dam-Ridge Rd 115 kV	
PJM	AE2-031	290	Carson-Rawlings 500 kV	
PJM	AE2-033	149	Clubhouse-Sappony 230 kV	
PJM	AE2-034	140	Mackeys 230 kV	
PJM	AE2-044	120	Anaconda-Dunbar 115 kV	
PJM	AE2-051	150	Carson-Septa 500 kV	
PJM	AE2-053	20	Kerr Dam-Ridge Road 115 kV	
PJM	AE2-094	300	Carson-Rogers Road 500 kV	
PJM	AE2-147	150	Swamp 230 kV	
PJM	AE2-258	14.1	Chase City 115 kV substation	
PJM	AE2-259	100	Curdsville-Willis Mtn 115 kV	
PJM	AE2-260	200	Clubhouse 230 kV	

PJM	AE2-291	102 MW Energy / 61.2 MW Capacity	POI coordinates: 37.049923°, -79.118396°	
PJM	AE2-292	127 MW Energy / 76.2 MW Capacity	POI coordinates: 37.049923°, -79.118396°	
PJM	AE2-313	314	Carson-Rawlings 500 Kv	
PJM	AF1-059	99.2	BRODNAX-SOUTH HILL 115 KV	
PJM	AF1- 123/124/125	2640	Fentress Substation 500 kV	
PJM	AF1-236	1210	MACKEYS 230 KV	
PJM	AF1-246	100	Clover Rawlings 500 kV	
PJM	AF1-293	127.86	Kidds Store - Fork Union 115 kV TL	
Santee Cooper	Q83	75	POI coordinates: 33.717511, -79.416569, Hemmingway	
Santee Cooper	Q99	100	Santee Cooper Camden – South Bethune 230 kV Line	