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April 10, 2019

Ms. M. Lynn Jarvis
Chief Clerk
North Carolina Utilities Commission
Fifth Floor, Room 5063
430 N. Salisbury Street
Raleigh, NC 27603-5919

Re: Albemarle Beach Solar, LLC
Amended Pre-Filed Direct Testimony of Linda Nwadike
Docket No. EMP-103, Sub 0

Dear Ms. Jarvis,

On behalf of Albemarle Beach Solar, LLC, we hereby file the Amended Pre-Filed Direct Testimony of Linda Nwadike in the above referenced docket.

Exhibits to the Testimony will follow and be filed under separate cover.

If you should have any questions concerning this filing, please let me know. Thank you.

Sincerely,

/s/ Karen M. Kemerait

Karen M. Kemerait

cc: Parties of Record

A Pennsylvania Limited Liability Partnership

California Colorado Delaware District of Columbia Florida Georgia Illinois Minnesota
Nevada New Jersey New York North Carolina Pennsylvania South Carolina Texas Washington

**BEFORE THE
NORTH CAROLINA UTILITIES COMMISSION
ALBEMARLE BEACH SOLAR, LLC
DOCKET NO. EMP-103, SUB 0**

**AMENDED PRE-FILED DIRECT TESTIMONY
OF
LINDA NWADIKE**

April 10, 2019

1 **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.**

3 .A. My name is Linda Nwadike. I am a Project Manager for SunEnergy1, LLC
4 (“SunEnergy1” or the “Company”), an affiliate of the Applicant Albemarle Beach
5 Solar, LLC (“Albemarle Beach Solar” or “Applicant”). Albemarle Beach Solar is
6 a North Carolina limited liability company that was formed on May 29, 2015. My
7 business address is 192 Raceway Drive, Mooresville, North Carolina 28117.

8 **Q. PLEASE DESCRIBE YOUR EDUCATION AND PROFESSIONAL**
9 **EXPERIENCE.**

10 A. I obtained a Bachelor of Science degree in Chemical Engineering with a
11 concentration in Biological Technology, and I am a licensed project manager
12 professional.

13 Prior to joining SunEnergy1, I worked in the nuclear energy industry as a
14 project manager and instrumentation and controls engineer. I worked with many
15 large-scale utility providers, including Duke Energy Progress, LLC, Duke Energy
16 Carolinas, LLC, Virginia Electric and Power Company d/b/a Dominion Energy
17 North Carolina (“Dominion”), Florida Power & Light Company, and NextEra
18 Energy, Inc. on various projects. I have also conducted material procurement and
19 logistics on various oil and gas projects.

20 At SunEnergy1, I conduct project development and permitting activities for
21 utility-scale solar renewable energy facilities. I am the liaison between SunEnergy1
22 and local community and government officials. I present information about projects

1 to local government officials at quasi-judicial public hearings and to adjacent
2 property owners at community meetings. I obtain federal, state, and local permits
3 necessary for the solar facilities, and I coordinate and lead the SunEnergy1's project
4 development team and sub-contractors in relation to achieving project goals.

5 **Q. PLEASE SUMMARIZE YOUR CURRENT RESPONSIBILITIES WITH**
6 **SUNENERGY1.**

- 7 A. My current employment responsibilities are as follows:
8
9 • Conduct project development and permitting activities on utility-scale solar
10 renewable energy facilities.
11 • Lobby and act as the liaison between SunEnergy1 and local community and
12 government officials.
13 • Present SunEnergy1 projects at quasi-judicial public hearings and community
14 meetings.
15 • Communicate and perform required activities needed to obtain federal, state,
16 and local permits.
17 • Work with federal, state, and local governmental agencies, including mayors,
18 county managers, boards of commissioners, and planning boards on solar
19 projects.
20 • Coordinate and lead internal project development team and sub-contractors
21 across broad technical, financial, and business disciplines to achieve project
22 goals.
23 • Focus team on project objectives, and track progress to ensure project
24 milestones are completed on time, on budget, and with the desired outcome.
25 • Anticipate and manage changes effectively in a rapidly evolving business
26 environment.
27 • Report and escalate issues to upper management and stakeholders as needed.

28 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?**

29 A. No

30 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

1 A. To satisfy the requirements of Commission Rule R8-63 under which this
2 Application for a Certificate of Public Convenience and Necessity (“CPCN”) is
3 being requested.

4 **Q. PLEASE STATE THE PARENT COMPANY OF THE APPLICANT.**

5 A. SunEnergy1 is the parent company of the Applicant.

6 **COMPANY BACKGROUND AND PROJECT FINANCE**

7 **Q. PLEASE DESCRIBE THE COMPANY’S PERSONNEL, TECHNICAL**
8 **EXPERIENCE, AND FINANCIAL CAPABILITY TO OWN AND**
9 **OPERATE THE PROJECT.**

10 A. SunEnergy1 is a top five U.S. solar developer, owner, and operator of utility-scale
11 solar projects with close to 1 GW of installed solar power. SunEnergy1 has
12 pioneered large-scale solar power on the East Coast for nearly a decade, and has
13 developed numerous record-breaking solar projects in the region. SunEnergy1 is
14 vertically integrated and controls all stages of development in-house. SunEnergy1
15 has the financial strength to own and maintain a 5 GW pipeline of solar-ready
16 development sites and over 250 MW of owned solar facilities. SunEnergy1’s
17 financial statements are filed confidentially and under seal as Confidential Exhibit
18 1.

19 SunEnergy1’s professional team works closely with manufacturers,
20 utilities, and industry groups to ensure the safety, performance, and cost efficiency
21 of its projects. The Company’s employees work closely with the National Electric
22 Code (NEC), National Fire Protection Association (NFPA) 70E, and other

1 government agencies to ensure that safety in the solar industry continues to
2 improve.

3 Kenny Habul, SunEnergy1's CEO and President, has been involved in
4 photovoltaic ("PV") solar and solar thermal since 1996, and has established himself
5 as a leader in the field of sustainable construction technologies. Prior to forming
6 SunEnergy1, Mr. Habul was a partner in Habul Brothers Luxury Home
7 Construction, one of the most prominent and innovative builders in Queensland,
8 Australia. Mr. Habul has vast experience in commercial and residential
9 construction, and has a passion for sustainable construction practices and solar
10 energy. He holds a Bachelor of Laws degree from Bond University in Australia.

11 Bradley Fite is SunEnergy1's Chief Operations Officer, and he holds an
12 Unlimited/Master Electrical License in multiple states. He is certified through the
13 Underwriter's Laboratory (UL) as a professional PV installer and holds several
14 certifications through the North American Board of Certified Energy Practitioners
15 (NABCEP). He is an active member of the Institute of Electrical and Electronics
16 Engineers Association (IEEE) and NFPA, and he works closely with utilities and
17 manufacturers to stay on the leading edge of the PV industry. Mr. Fite is directly
18 involved with all aspects of the Company and oversees projects from the initial
19 development through construction, operations and maintenance. He has over 20
20 years of construction experience, and has built more than 500 MW AC of solar
21 PV projects.

1 Kevin Chen is SunEnergy1's Chief Commercial Officer. Prior to joining
2 SunEnergy1, he had a number of leadership positions in the power industry. He
3 has worked in the business from leading global technology and equipment supply,
4 large utility transmission and distribution operation, and generation project
5 development. His solar development experience has grown from 250 MW of DG
6 portfolio to community solar and utility-scale projects. Mr. Chen received his
7 master's degree in electric power from Iowa State University and his MBA from
8 University of California at Los Angeles.

9 Brian Kennedy, is SunEnergy1's Vice President of Business
10 Development, and he brings over 25 years of energy industry experience to
11 SunEnergy1. Prior to joining the Company, Mr. Kennedy initiated and
12 established the solar enterprise for the largest utility company in the country. As
13 such, he was directly responsible for the development of dozens of utility-scale
14 solar projects across the country, totaling nearly 1 GW of installed capacity and
15 representing over \$1 billion worth of investment. Mr. Kennedy holds an MBA
16 from Xavier University.

17 Joel Sossamon is SunEnergy1's Vice President of Field Operations. He
18 has held an unlimited electrical license in the State of North Carolina for more
19 than three decades, and is responsible for the overall management of the solar
20 installation projects for SunEnergy1 from ground-mount systems to rooftop
21 arrays. He brings more than 40 years of electrical contracting experience in both
22 commercial and industrial settings. Mr. Sossamon is adept at managing large

1 teams of personnel and contractors to ensure SunEnergy1's projects are built to
2 the highest standards and with the utmost efficiency.

3 **Q. WHAT IS THE CONSTRUCTION TIMELINE FOR THE FACILITY?**

4 A. The project is projected to be placed in-service in various phases before December
5 2020.

6 **Q. WHAT ARE THE ESTIMATED CONSTRUCTION COSTS FOR THE
7 FACILITY?**

8 A. The estimated construction costs are provided confidentially and under seal as
9 Confidential Exhibit 5.

10 **Q. DOES THE APPLICANT HAVE OWNERSHIP INTEREST IN AND/OR
11 THE ABILITY TO CONTROL GENERATING FACILITIES IN THE
12 SOUTHEASTERN ELECTRIC RELIABILITY COUNCIL REGION?**

13 A. Yes. The Applicant's affiliate, SunEnergy1, has ownership interest in and/or the
14 ability to control through leases or contracts numerous solar generating facilities in
15 the Southeastern Electric Reliability Council ("SERC") region. Please see a list of
16 generating facilities that SunEnergy1 owns or controls through leases or contracts
17 in the SERC region attached hereto as Exhibit 6.

18 **SITE AND FACILITY DESCRIPTION**

19 **Q. WHERE IS THE PROJECT LOCATED?**

20 A. The project is located south side of Mackeys Road, east/west of Cross Road, and
21 northeast of Woodlawn Road, in the Town of Roper, Washington County, North
22 Carolina.

1 **Q. WHAT IS THE CURRENT LAND USE AND ANTICIPATED USE?**

2 A. The project will be located on several parcels in Washington County, North
3 Carolina in the location described above and as shown on layout map attached
4 hereto as Exhibit 2. The site is comprised of rural land, some of which is utilized
5 for agricultural purposes. SunEnergy1's affiliate, VL Director Land Holdings,
6 LLC, owns the majority of the site and has site control of the parcels. VL Director
7 Land Holdings, LLC has provided Albemarle Beach Solar with the right to develop
8 and use the property for solar energy purposes, including the installation of solar
9 panels, inverters, transformers, and other elements of the facility described in the
10 Application.

11 **Q. WHAT IS THE FACILITY'S ANTICIPATED ELECTRICITY**
12 **PRODUCTION CAPACITY?**

13 A. The maximum gross power production capacity of the facility is 80 MW.

14 **Q. PLEASE DESCRIBE THE BASIC COMPONENTS OF THE FACILITY.**

15 A. Albemarle Beach Solar is an 80-MW PV array, and the source of its power is solar
16 energy. The facility will be a single-axis tracking, ground-mounted solar PV
17 system, and the facility will be comprised of solar arrays, inverters, generator step-
18 up ("GSU") transformers, racking, posts, wiring, utility poles, communication
19 poles, security camera, collector station, and accessories. A color map showing the
20 proposed site boundary, layout with all major equipment, roads, and, and electric
21 facilities is attached hereto as Exhibit 7.

1 **Q. PLEASE DESCRIBE THE TRANSMISSION FACILITIES TO WHICH**
2 **THE FACILITY WILL INTERCONNECT AND HOW THE PROJECT**
3 **WILL BE INTERCONNECTED TO THE GRID?**

4 A. The GSU transformers will connect the solar inverters to the newly constructed
5 34.5 kV collector station directly adjacent to the Virginia Electric and Power
6 Company, d/b/a Dominion Energy North Carolina (“Dominion Energy” or
7 “Dominion”) Mackeys 230 kV substation. The facility will connect to the Point of
8 Interconnection (“POI”) via two 230/34.5 kV wye grounded main power
9 transformers with a rating of 26.88/35.84/44.8 MVA. The POI will be at the
10 existing Mackeys 230 kV substation. A diagram showing the location of the
11 collector station and the Mackeys 230 kV substation is attached hereto as Exhibit
12 8.

13 Albemarle Beach Solar’s affiliate owns the current parcel where the
14 collector station will be located, which is directly adjacent to Mackeys 230 kV
15 substation. Therefore, no additional right-of-way is needed.

16 Albemarle Beach Solar will interconnect with the transmission grid owned
17 by Dominion Energy. Albemarle Beach Solar has entered into an Interconnection
18 Service Agreement and Interconnection Construction Agreement with Dominion
19 and PJM Interconnection, LLC (“PJM”) (PJM Queue No. AA2-178), and those
20 agreements provide the terms and conditions under which the project will
21 interconnect. The Interconnection Service Agreement is attached confidentially

1 and under seal as Confidential Exhibit 9, and the Interconnection Construction
2 Agreement is attached confidentially and under seal as Confidential Exhibit 10.

3 The project is located on a number of parcels of land. The individual blocks
4 of trackers with solar modules will be connected through medium-voltage cable
5 runs through the parcels. These connections will either use overhead poles or
6 buried cable installed in culverts or via directional boring. The project has a
7 minimum setback of 75 feet from all property boundaries and 300 feet from all
8 residential property boundaries, and the inverters will be located no less than 100
9 feet from any dwelling unit.

10 **NEED FOR THE FACILITY**

11 **Q. PLEASE EXPLAIN THE NEED FOR THE FACILITY.**

12 A. Albemarle Solar will interconnect with the Dominion Energy transmission grid,
13 affording it access to PJM, a Regional Transmission Organization (“RTO”) in
14 which Dominion participates. PJM coordinates the movement of electricity
15 through all or parts of thirteen states (Delaware, Illinois, Indiana, Kentucky,
16 Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee,
17 Virginia, West Virginia) and the District of Columbia. See <https://pjm.com/-/media/library/reports-notices/load-forecast/2019-rpm-load-forecast.ashx?la=en>.

19 Albemarle Beach Solar believes that there are strong market conditions in
20 the PJM market that will create sustainable off-take for its power production.
21 Demand for renewable energy is expected to increase in the southeast over the
22 expected lifetime of the project. Dominion Energy has committed to increasing its

1 use of renewable power to generate 5,000 MW of electricity by 2028. Dominion's
2 commitment to renewable power is consistent with state-level policy set by the
3 Virginia Assembly, which affirmed the importance of renewable energy generation
4 in passing the Grid Transformation and Security Act of 2018 ("GTSA"), signed
5 into law on March 9, 2018. The GTSA finds that up to an additional 5,000 MW of
6 utility-scale electric generating facilities powered by solar and wind energy is in
7 the public interest, along with up to an additional 500 MW of non-utility scale solar
8 or wind generating facilities, including rooftop solar installations.

9 Albemarle Beach Solar anticipates contracting the sale of energy,
10 capacity, and Renewable Energy Credits ("RECs") through PJM. Load growth
11 for the PJM RTO as a whole, and more specifically for the Dominion Virginia
12 power zone, which serves parts of Eastern North Carolina and Virginia is
13 expected to increase over the next ten to fifteen years as described both for winter
14 and summer months. Annual net energy growth rates for PJM over the next ten
15 years is expected to grow by 0.4% for PJM and 1.1% for the Dominion Virginia
16 Power zone. See [https://pjm.com/-/media/library/reports-notices/load-](https://pjm.com/-/media/library/reports-notices/load-forecast/2019-rpm-load-forecast.ashx?la=en)
17 [forecast/2019-rpm-load-forecast.ashx?la=en](https://pjm.com/-/media/library/reports-notices/load-forecast/2019-rpm-load-forecast.ashx?la=en), p. 80. Summer peak load for PJM
18 is expected to grow by 0.9% per year over the next ten years, and the summer
19 peak load for the Dominion Virginia Power zone is expected to grow by 0.9% per
20 year over the next ten years. *Id.* at 43.

21 Winter peak load growth in PJM is expected to average 0.4% per year over
22 the next ten-year period. *Id.* at 47. Winter peak load growth in the Dominion

1 Virginia Power zone is expected to grow by 1.1% per year over the next ten years,
2 *Id.* at 47.

3 **Q. DESCRIBE THE OFF-TAKE PLANS FOR THE PROJECT.**

4 A. As mentioned above, expectations for the purchase of power from the PJM market
5 in the southeast United States are strong. Furthermore, Digital Realty, a leading
6 global provider of data center, colocation and interconnection solutions, has entered
7 into a purchase power agreement (“PPA”) on behalf of Facebook to support
8 Facebook’s renewable energy goals at data center facilities leased from Digital
9 Realty. SunEnergy1 and Digital Realty have entered into a long-term PPA for
10 SunEnergy1 to deliver 80 MW of solar power capacity to Facebook. Under the
11 terms of the agreement, all renewable energy certificates and environmental claims
12 will be delivered to Facebook. Please see the Officer’s Certificate and Digital
13 Realty Release filed as Exhibit 3.

14 **REGULATORY APPROVALS AND PERMITS**

15 **Q. DOES WASHINGTON COUNTY HAVE A SOLAR ENERGY**
16 **ORDINANCE?**

17 A. Yes. Washington County adopted its Solar Development Ordinance on July 7,
18 2014 as Article 13 of the Zoning Ordinance for Washington County. The Solar
19 Development Ordinance was adopted by the Washington County Board of
20 Commissioners pursuant to the authority and provisions of N.C. Gen. Stat. §
21 153A-121 (general ordinance-making power), N.C. Gen. Stat. § 153A-340 (grant
22 of power), and other applicable law, provided nothing shall be interpreted to

1 conflict with or supersede any provision of N.C. Gen. Stat. § 153A-144
2 (limitations on regulating solar collectors). The Solar Development Ordinance
3 was further amended, and the amendments were adopted and approved by the
4 Washington County Board of Commissioners on December 7, 2015.

5 **Q. DESCRIBE THE PERMITS AND APPROVALS YOU ANTICIPATE**
6 **WILL BE NECESSARY TO COMMENCE CONSTRUCTION OF THE**
7 **FACILITY.**

8 A. Albemarle Beach Solar has obtained a Special Use Permit (“SUP”), as required
9 by the Washington County zoning requirements. The Washington County Board
10 of Commissioners, which has final authority to approve the SUP, unanimously
11 voted to approve the SUP at a public hearing, and the final Order approving the
12 SUP is attached hereto as Exhibit 4. In addition to the SUP, Washington County
13 participates in the National Flood Insurance Program and enforces a Flood
14 Damage Prevention Ordinance that requires a Floodplain Development Permit to
15 be issued for all development located in the Special Flood Hazard Area (“SFHA”)
16 within its jurisdiction. Washington County’s Floodplain Administrator will
17 review and advise if permits will be needed for each part of the project within the
18 SFHA. Albemarle Beach Solar will also obtain a Building Permit from
19 Washington County.

20 From the State of North Carolina, the facility will require a driveway
21 permit from the North Carolina Department of Transportation, and approval of an

1 erosion and sedimentation control plan from the NC Department of
2 Environmental Quality (“NCDEQ”).

3 In regard to federal permits and approvals, Albemarle Beach Solar has
4 submitted a self-certification package to United States Fish and Wildlife Service
5 (“USFWS”) for a wildlife analysis, which was approved by the USFWS on
6 November 30, 2018. Additionally, Phase I and Phase II cultural resource
7 assessments were conducted on the original footprint of the project on September
8 1, 2016. A Phase I assessment on the new parcels is currently being conducted. A
9 wetland delineation for the entire site was confirmed by the US Army Corps of
10 Engineers (“USACE”) in November, 2019. Albemarle Beach Solar has received a
11 preliminary jurisdictional determination from the USACE.

12 Additionally, Albemarle Beach Solar may apply for a Market-Based Rate
13 Authorization from the Federal Energy Regulatory Commission (“FERC”),
14 pursuant to Sections 205 and 206 of the Federal Power Act, and may seek to self-
15 certify with FERC as an Exempt Wholesale Generator pursuant to the Public
16 Utility Holding Company Act of 2005. The facility will also be registered as a
17 Generator-Owner with the North American Electric Reliability Corporation
18 (“NERC”).

19 **COMMUNITY**

20 **Q. PLEASE DESCRIBE THE ANTICIPATED BENEFITS OF THE**
21 **FACILITY TO FACEBOOK AND THE LOCAL COMMUNITY.**

1 A. The Albemarle Beach Solar facility will benefit Facebook by enabling Facebook
2 to meet its renewable energy goal of supporting all of its operations with 100%
3 renewable energy. With delivery of renewable energy from the SunEnergy1
4 facility to Facebook, Facebook's quality standards for new renewable energy
5 projects within the same power grid as the data center load will be met.

6 The Albemarle Beach Solar facility also bring a variety of financial
7 benefits to Washington County. Albemarle Beach Solar anticipates that the
8 County will realize property and real estate tax revenues from the project. Aside
9 from these financial benefits, Albemarle Beach Solar will also create community
10 benefits. Albemarle Beach Solar will enhance the County's reputation as an
11 attractive and friendly environment for advanced manufacturing, technology, and
12 related jobs. Local contractors and businesses such as installation, fencing,
13 landscaping, and machine rental companies will receive sales opportunities from
14 the facility construction and operations. During the approximately year-long
15 construction process, the facility will offer full-time construction jobs. Albemarle
16 Beach Solar expects to hire up to 1,200 workers for the duration of the
17 construction phase. Increased economic activity in the area is expected to
18 increase revenue for local hotels, restaurants, service stores, and other vendors.

19 **Q. WHAT ARE THE EXPECTED ENVIRONMENTAL IMPACTS OF THE**
20 **FACILITY?**

21 A. By design and by its nature as a solar PV facility, the facility will provide clean
22 renewable power with minimal environmental impacts. The facility will create no

1 air or water emissions and no environmental contamination. There will be no
2 noise impact outside of the fence line. At the end of the facility's useful life,
3 materials can be recycled or sold for scrap, and the land can be returned to
4 agricultural use.

5 **OFF-TAKE PLANS**

6 **Q. WHAT ARE THE LONG-TERM PLANS FOR OWNERSHIP OF THE**
7 **PROJECT?**

8 A. Currently, Albemarle Beach Solar will own 100% of the generated power from this
9 project. In the event of any change in ownership interest, the Applicant will notify
10 the Commission.

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

12 A. Yes.

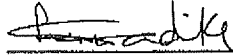
13

1 STATE OF NORTH CAROLINA
2
3 COUNTY OF IREDELL

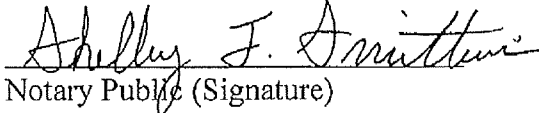
4
5 VERIFICATION
6

7 I, Linda Nwadike, being first duly sworn, depose and say that I am duly
8 authorized to act on behalf of Albemarle Beach Solar, LLC as Project Manager for
9 SunEnergy1, LLC, an affiliate of the Petitioner; that I have read the foregoing Pre-
10 Filed Direct Testimony and that the same is true and accurate to my personal
11 knowledge and belief.

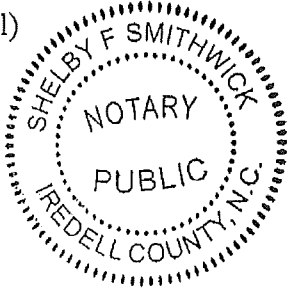
12 This 10 day of April, 2019.

13
14 
15 _____
16 Linda Nwadike
17 SunEnergy1, LLC
18

19 Sworn to and subscribed to before me
20 this 10 day of April, 2019.

21  (Seal)
22 _____
23 Notary Public (Signature)

24 Shelby F. Smithwick
25 _____
26 Notary Public (Printed)



27 My Commission Expires: 03/27/23
28
29
30