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November 27, 2018

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**VIA ELECTRONIC FILING**

Ms. Martha Lynn Jarvis  
Chief Clerk  
North Carolina Utilities Commission  
430 North Salisbury Street  
Raleigh, NC 27603

Re: **Docket No. EMP-104, Sub 0**

Fern Solar LLC's Application for a Certificate of Public Convenience and Necessity to Construct a Merchant Plant

Dear Ms. Jarvis:

Enclosed for filing is Fern Solar LLC's Application for a Certificate of Public Convenience and Necessity to Construct a Merchant Plant. We propose the following schedule for the Commission's consideration of this application:

|                          |                                                                           |
|--------------------------|---------------------------------------------------------------------------|
| Friday, December 7       | Public Staff Certificate of Completeness to be filed                      |
| Week of December 10      | Procedural Order Issued                                                   |
| January 10, 2019         | Petitions to Intervene & direct testimony of Public Staff and intervenors |
| January 17, 2019         | Applicant's Rebuttal Testimony                                            |
| Week of January 28, 2019 | Public Hearing in Edgecombe County                                        |
| Week February 4, 2019    | Evidentiary Hearing in Raleigh                                            |

We have discussed the above schedule with the Public Staff and understand they are in agreement with this proposed schedule.

Thank you for your assistance. Please contact me if you have any questions.

Sincerely,



Benjamin L. Snowden

Enclosure

**STATE OF NORTH CAROLINA  
UTILITIES COMMISSION  
RALEIGH**

DOCKET NO. EMP-104, SUB 0

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

|                                            |   |                                 |
|--------------------------------------------|---|---------------------------------|
| <b>In the Matter of the Application of</b> | ) | <b>APPLICATION FOR A</b>        |
| <b>Fern Solar LLC for a Certificate of</b> | ) | <b>CERTIFICATE OF PUBLIC</b>    |
| <b>Public Convenience and Necessity</b>    | ) | <b>CONVENIENCE AND</b>          |
|                                            | ) | <b>NECESSITY FOR A MERCHANT</b> |
|                                            | ) | <b>PLANT</b>                    |
|                                            | ) |                                 |

Fern Solar LLC (“Fern” 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 100 megawatts (“MW”) to be located in Edgecombe County (the “Facility”). In support of its application, Applicant provides the Commission the attached exhibits in compliance with Rule R8-63.

WHEREFORE, Fern Solar LLC 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 27th day of November, 2018.

KILPATRICK TOWNSEND & STOCKTON LLP

By: /s/ \_\_\_\_\_

Benjamin L. Snowden

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*Attorney for Fern Solar LLC*

**Fern 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:

Fern Solar LLC  
17901 Von Karman Avenue, Suite 1050  
Irvine, California 92614  
(619) 733-2649  
[patrick.brown@baywa-re.com](mailto:patrick.brown@baywa-re.com)

(ii) Description of Applicant: Fern Solar LLC (“Fern”) is a North Carolina limited liability company with its principal place of business in Charlotte, North Carolina. Fern was formed on March 12, 2015. A true and correct copy of Fern’s Limited Liability Company Articles of Organization is attached as **Schedule 1**. Fern is a wholly owned subsidiary of BayWa R.E. Development, LLC, a Delaware limited liability company (“BayWa”). The sole Member of BayWa is BayWa R.E. Solar Projects, LLC (“BayWa Solar”). The principal participants of Fern are the three officers of BayWa Solar: Jam Attari, Chief Executive Officer; William Gulley, Chief Financial Officer; David Sanders, Chief Operating Officer. Fern, BayWa, and BayWa Solar are wholly-owned subsidiaries of the same parent company, BayWa AG (“BayWa AG”). An organizational chart depicting the relationship between Fern, BayWa, and BayWa AG together with relevant affiliated companies is attached as **Schedule 2**.

BayWa AG, headquartered in Munich, Germany, is an international conglomerate of energy companies, agricultural trading, and building materials suppliers. BayWa AG is one of Europe’s leading trade, services, and logistics companies. In addition to a conventional energy business primarily in Europe, the energy segment of BayWa AG provides a variety of renewable energies, including solar power, wind energy, and

bioenergy, to 24 countries, including all major European markets and locations in North America, Southeast Asia, and Australia. BayWa AG is a publicly-traded company with a current market capitalization of approximately 1.2 billion EUR and annual revenues of approximately 16.1 billion EUR.

BayWa, the direct owner of Fern, operates and is developing almost 50 solar PV facilities throughout the United States, including the states of North Carolina, Colorado, Washington, Utah, New York, Illinois, Kentucky, Virginia, Florida, and California. BayWa's projects have delivered an aggregate capacity of approximately 112 MW to date, with an anticipated aggregate pipeline of 1.2 GW of additional projects in the United States.

Fern Solar LLC was initially formed by Geenex Solar, LLC, a Delaware limited liability company ("Geenex"). Geenex is one of BayWa's development partners in North Carolina. Geenex has undertaken the initial development of the Facility, including obtaining site control for the properties on which the Facility shall be built, conducting initial environmental reviews, and securing local land use and other permits. In June 2018, Geenex sold all of its interests in Fern to BayWa. However, Geenex agreed to continue participating in the development of the Project until the Project achieves commercial operation.

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

Benjamin Lindermeier  
BayWa R.E. Development, LLC  
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(iii) A copy of BayWa AG's most recent annual management report, including its consolidated financial statements, is attached as **Schedule 3**.

(iv) Applicant's other affiliated generating facilities: BayWa has completed construction of eight solar generating facilities in the Southeastern Electric Reliability Council ("SERC") region, with an aggregate system capacity of 49 MW. These projects interconnect with Duke Energy Progress ("DEP"), municipal utilities, and Virginia Electric and Power Company, d/b/a Dominion Energy North Carolina ("Dominion"), as described in the following chart.

### BayWa Projects Operating in the SERC Region

| Project            | Location               | System Size (MW) | Interconnecting Utility                        | Offtaker             | Commercial Operation Date |
|--------------------|------------------------|------------------|------------------------------------------------|----------------------|---------------------------|
| Hemlock            | Northampton County, NC | 5                | Dominion                                       | PJM                  | Dec. 2016                 |
| Cork Oak           | Halifax County, NC     | 20               | Dominion                                       | PJM                  | Dec. 2017                 |
| Sunflower          | Halifax County, NC     | 16               | Dominion                                       | PJM                  | Dec. 2017                 |
| HXNAIR             | Halifax County, NC     | 5                | Dominion                                       | PJM                  | Dec. 2017                 |
| SEV - Nashville    | Nash County, NC        | 2                | DEP                                            | DEP                  | Aug. 2015                 |
| SEV - Newton Grove | Sampson County, NC     | 2                | DEP                                            | Town of Newton Grove | Aug. 2015                 |
| SEV - Selma        | Johnston County, NC    | 2                | The Town of Selma Utility Department           | Town of Selma        | Sept. 2015                |
| SEV - Smithfield   | Johnston County, NC    | 2                | Town of Smithfield Public Utilities Department | Town of Smithfield   | Sept. 2015                |
| <b>TOTAL</b>       |                        | 49               |                                                |                      |                           |

In addition to the completed projects, BayWa has an ownership interest in and is developing the following solar generating facilities in the SERC region, and each of the development projects is expected to interconnect to Dominion.

### BayWa Projects Under Development in the SERC Region

| <b>Project</b> | <b>Location</b>           | <b>System Size (MW)</b> | <b>Development Status</b>                          | <b>COD (estimated)</b> |
|----------------|---------------------------|-------------------------|----------------------------------------------------|------------------------|
| Chestnut       | Halifax County, NC        | 75                      | CPCN issued 10/31/16 (Docket No. SP-5436 Sub 0)    | Q4 2019                |
| Grasshopper    | Mecklenburg County, VA    | 80                      | PBR ongoing                                        | Q2 2020                |
| Cricket        | Culpeper County, VA       | 80                      | Local use permit application process ongoing       | Q4 2020                |
| Bluebird       | Harrison County, Kentucky | 160                     | Local use permit application process ongoing       | Q4 2021                |
| American Beech | Halifax County, NC        | 160                     | Local use permit application process ongoing       | Q4 2021                |
| Halifax        | Halifax County, NC        | 5                       | CPCN Issued 08/4/2016 (Docket No. SP-8224, Sub 0)  | TBD                    |
| North 301      | Halifax County, NC        | 20                      | CPCN Issued 03/30/2015 (Docket No. SP-5422, Sub 0) | Q1 2020                |
| Five Forks     | Warren County, NC         | 20                      | CPCN Issued 04/06/2015 (Docket No. SP-5440, Sub 0) | Q1 2020                |
| <b>TOTAL</b>   |                           | 600                     |                                                    |                        |



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

(i) Nature of proposed generating facility: Fern is proposing to construct a 100 MW solar PV facility that will interconnect to Dominion Energy North Carolina's transmission system. The nameplate generating capacity of the facility will be 100 MW, with anticipated gross capacity of approximately 150 MW and anticipated generation of 250 GWh per year.<sup>1</sup> Because solar power is subject to intermittent solar irradiance, Fern's maximum dependable capacity is projected to be 0 MW by definition. Construction for the project is expected to begin on or about the second quarter of 2019, with an estimated date of commercial operation date in second quarter of 2020. An itemized estimate of the construction costs is included as **Confidential Schedule 5**.<sup>2</sup> 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.

(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 6**.

(iii) Locational information: The Facility will be located on approximately 1,235 acres in Edgecombe County, North Carolina, on an assortment of neighboring real estate parcels bounded by active agricultural and forested lands. The GPS coordinates of the approximate center of the facility are latitude 36.005031; longitude -77.713117. An e911 address for the facility has been requested from the county, and the Applicant will

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<sup>1</sup> Nameplate capacity, or "net capacity," is generally defined as the gross capacity of the facility minus plant parasitic loads. See <https://www.nrel.gov/docs/fy13osti/57582.pdf>.

<sup>2</sup> Schedule 5 has been designated as confidential because the construction estimate contains confidential information within the scope of G.S. § 132.1.2.

notify the Commission of the e911 street address when it is received. Access to the site is via Speights Chapel Road and Battleboro Leggett Road.

(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. Fern has submitted 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. Presently, Fern is awaiting a wetland delineation jurisdictional determination from the Corps.
2. Although the Facility is not located on federally obligated airport land, Fern submitted a glare study to the Federal Aviation Administration (“FAA”) as encouraged by the FAA to comply voluntarily with the FAA’s solar policy. The glare study concluded that Fern Solar will not have any effect on any airport in a five-mile radius.
3. Prior to commencing operation, Fern 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.
4. Fern may seek to self-certify with FERC as an Exempt Wholesale Generator pursuant to the Public Utility Holding Company Act of 2005.

State:

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

Local:

1. Fern requires a Special Use Permit (“SUP”) to satisfy Edgecombe County zoning requirements. The Edgecombe County Board of Commissioners, which has final authority to approve the Fern SUP, unanimously voted to approve the SUP at a public hearing held on September 4, 2018. A copy of the final Order approving the SUP is attached to this application as **Schedule 7**.
2. Fern has submitted an application for a stormwater permit to Edgecombe County, and the county has confirmed that the Facility has satisfied all of the requirements for a stormwater permit application.
3. Fern will require a Building Permit from Edgecombe County.
4. Fern will require an Electrical Permit from Edgecombe County.

Other:

1. Fern will register as a Generator-Owner with the North American Electric Reliability Council (“NERC”).

(vi) Description of transmission facilities: The Facility will interconnect with Dominion’s transmission grid via a newly-constructed switch station along the Benson-Dunbar 115kV line. A color map showing the location of the interconnection points and

transmission facilities is included on Page 2 of the Site Plan attached as **Schedule 6**. The transmission facilities are further described below.

The Facility will install approximately 151 MW of monocrystalline photovoltaic solar modules on single-axis trackers. The trackers will be installed on a North-South axis tilting in an East-West direction to enable the modules to follow the sun throughout the day. The trackers will consist of galvanized steel and will be anchored on H-shaped steel posts driven approximately six feet into the ground. The trackers do not have a concrete foundation. The total number of modules will be roughly 415,000 depending on exact wattage of the modules.

The Facility will use 41 inverters, each with a capacity of 2.75 MW, to transform DC power generated by the solar modules into approximately 100 MW of AC capacity. Forty-one transformers will increase the voltage of generated power at the inverters from 600V to 34.5kV. Power from these 41 step-up transformers will be collected at the main power transformer, which will further increase voltage to 115kV, so as to align with the voltage at the switching station which will be built for the project. The switching station will connect to the existing Dominion 115kV transmission lines crossing the project site.

Because the land for the Facility consists of adjacent and non-adjacent parcels, individual blocks of trackers with solar modules will be connected through medium-voltage cable runs between the parcels. These connections will be using either overhead poles or buried cable, installed in culverts or via directional boring. Where projects parcels are not immediately adjacent, easements with neighboring landowners have been secured to allow for installation of power lines.

Fern entered into an Interconnection Service Agreement and Interconnection Construction Service Agreement with Dominion and PJM on October 22, 2018, attached to this application as **Confidential Schedule 8**.

**Fern Solar LLC**  
**Exhibit 3 [R8-63(b)(3)]**

***Description of the need for the facility in the state and/or region***

Fern expects to benefit North Carolina and its surrounding region by satisfying a growing demand for renewable power in the region, and by providing economic development and other benefits in Edgecombe County.

The Fern 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. BayWa 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. BayWa has previously secured and is actively negotiating for over 300 MW of offtake within the PJM market, and is using this experience to secure offtake for Fern. Fern is actively negotiating power purchase agreements with a group of investment-grade offtakers for approximately 80 MW of the Project’s output, and is expecting final power purchase agreements with these parties in the fourth quarter of 2018. For the remaining 20 MW, Fern is actively pursuing offtake with other potential buyers.

As demonstrated by the chart produced by the Business Renewables Center and attached as **Schedule 4**, projections for corporate purchase of energy and renewable energy credits (“RECs”) from solar facilities in the southeast market of PJM is expected to increase over the next few years. Fern believes that healthy market conditions will create sustainable offtake for its production.

Demand for renewable power is expected to increase in the Southeast over the expected lifetime of the Project. Dominion Energy has committed to increasing its use of

renewable power to generate 5,000 MW of electricity by 2028. As noted on Schedule 4, 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 increase as described below.

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.

Fern 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 (as shown on Schedule 9 attached hereto), 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 0.4% per year over the next ten years, and by 0.4% over the next 15 years.<sup>3</sup> For the Dominion Virginia Power zone, summer peak load growth is expected to grow by 0.8% per year over the next ten years, and 0.8% per year over the next fifteen years.<sup>4</sup> The anticipated ten year summer peak load growth in the Dominion Virginia Power zone represents 2.6% growth over the January 2017 load forecast report.<sup>5</sup>

Winter peak load growth in PJM is projected to average 0.4% per year over the next 10-year period, and 0.4% over the next 15-years.<sup>6</sup> 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.<sup>7</sup> The anticipated ten year winter peak load growth in the Dominion Virginia Power zone represents 3.9% growth over the January 2017 load forecast report.<sup>8</sup>

The area of North Carolina in PJM has slightly higher projected load growth than Virginia. North Carolina is expected to average between 0.8 and 0.9% per year over the next 10 years versus the PJM RTO load growth projections of 0.4% over the next ten years.<sup>9</sup>

Generation retirement also demonstrates the need for new sources of electricity in the region, and in North Carolina in particular. Approximately 209 MW of capacity in

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<sup>3</sup> 2018 PJM Load Forecast Report (Jan. 2018), available at <https://www.pjm.com/-/media/library/reports-notice/load-forecast/2018-load-forecast-report.ashx?la=en>, at 2.

<sup>4</sup> *Id.* at 59-60.

<sup>5</sup> *Id.* at 54.

<sup>6</sup> *Id.* at 2.

<sup>7</sup> *Id.* at 63-64.

<sup>8</sup> *Id.* at 54.

<sup>9</sup> PJM North Carolina State Infrastructure Report (May 2018), available at <https://www.pjm.com/-/media/library/reports-notice/state-specific-reports/2017/2017-north-carolina-state-infrastructure-report.ashx?la=en>.



North Carolina was retired in 2017. This represents more than 10 percent of the 2,084 MW that retired RTO-wide in 2017.<sup>10</sup>

In addition to satisfying in part the growing demand for renewable energy, Fern also anticipates bringing economic benefits to Edgecombe County. While the operation of the Facility will allow many of the landowners to live and farm nearby, the landowners will gain income that will allow them to continue agricultural activities on their remaining properties. Further, by leasing land, with purchase options to acquire the site on which the Facility is located, Fern expects to generate approximately \$93,672 of real property tax revenue annually for Edgecombe County. Rollback taxes on the 916 acres of fenced land that constitutes the site will equal approximately \$32,163. Assuming system construction costs of approximately \$100,000,000, and factoring in North Carolina's 80% property tax abatement on commercial solar systems under G.S. § 105-275, the facility will also pay approximately \$210,000 in taxes on the system itself in its first year of operation.

Fern also will bring employment opportunity and development for the local Edgecombe County workforce. Operation of the Facility will bring permanent jobs for landscapers, grounds keepers, site operations, and maintenance personnel and temporary construction jobs for approximately 165 local builders, contractors and engineers. In addition to jobs, Fern also brings workforce development. Geenex, Fern's development partner, has also created the Center for Energy Education, a non-profit organization that provides education on renewable energy. The Center for Energy Education plans to offer local workforce development programs through a partnership with Edgecombe Community College and other organizations.

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<sup>10</sup> *Id.*

The Center for Energy Education also provides educational resources on renewable energy for local students and teachers. The Center plans to host camp programs for local students to engage them with solar energy production. The Center has held two-day teacher workshops for local teachers at Phillips Middle School, which is in close proximity to the Facility, to provide teachers with tools to teach their students about solar energy generation. With these efforts, Fern anticipates bringing positive community benefits to Edgecombe County while also generating renewable power to meet the region's increasing demand.

**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](mailto:Chris.Ayers@psncuc.nc.gov)

Elizabeth Culpepper  
NC Public Staff - Legal Division  
[Elizabeth.culpepper@psncuc.nc.gov](mailto:Elizabeth.culpepper@psncuc.nc.gov)

NC Public Staff- Legal Division  
4326 Mail Service Center  
Raleigh, NC 27599

This the 27th day of November, 2018.

/s/ \_\_\_\_\_

Benjamin L. Snowden

OFFICIAL COPY

Nov 27 2018