

**BEFORE THE
PUBLIC SERVICE COMMISSION
OF MARYLAND**

**IN THE MATTER OF THE APPLICATION
OF ONEENERGY BAKER POINT SOLAR,
LLC FOR A CERTIFICATE OF PUBLIC
CONVENIENCE AND NECESSITY TO
CONSTRUCT A 9.0 MW SOLAR
PHOTOVOLTAIC GENERATING FACILITY
IN FREDERICK COUNTY, MARYLAND**

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CASE NO: 9399

**DIRECT TESTIMONY
OF
DE ANDRE T. WILSON
ON BEHALF OF THE STAFF
OF THE
PUBLIC SERVICE COMMISSION OF MARYLAND**

May 6, 2016

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1 **INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. My name is De Andre T. Wilson. My business address is 6 St. Paul Street, Baltimore,
4 Maryland 21202.

5
6 **Q. What is your occupation?**

7 A. I am employed by the Public Service Commission of Maryland (“Commission”) as an
8 Electrical Distribution Engineer in the Commission’s Engineering Division.

9
10 **Q. Please describe your educational background and professional experience.**

11 A. I hold a Bachelor of Science degree in Electrical Engineering from Morgan State
12 University, Baltimore, Maryland. I worked as a Research Engineer at several
13 engineering laboratories engaged in research and development in the area of
14 microelectronic power device and circuit design, where my responsibilities consisted of
15 researching and gathering current-voltage characteristic property data for various
16 elements to generate 3-D mix mode models and predictive analysis reports. I have over
17 five years experience as an Engineering Assistant and Project Manager with Verizon
18 Virginia Inc. (“Verizon”). My responsibilities included managing, planning, and
19 designing fiber optic network infrastructure projects used to deploy telephone and cable
20 services over a fiber optic cable network. I also oversaw Verizon’s acquisition of Rights-
21 Of-Way (“ROW”) permitting from local municipalities throughout its Northern Virginia
22 service territory. I joined the Commission in June 2012.

23
24 **Q. Have you previously testified before the Commission?**

25 A. Yes. I testified before the Commission in Case No. 9298, which involved the June 29,
26 2012 Derecho storm outages; Case No. 9308, a case associated with Hurricane Sandy;
27 Case No. 9299, a rate case involving Baltimore Gas and Electric Company; Case No.
28 9336, a rate case involving Potomac Electric Power Company; and Case No. 9392, which

1 involved the request for a CPCN by Ibis Solar, LLC for a 6.0 MW solar generating
2 facility in Somerset County, Maryland.

3
4 **Q. What is the purpose of your testimony?**

5 A. The purpose of my testimony is to discuss the effect that the proposed project will have
6 on the reliability and stability of the electric system serving the State of Maryland, which
7 are two factors the Commission is required to consider prior to issuing a Certificate of
8 Public Convenience and Necessity (“CPCN”) pursuant to § 7-207 of the Public Utilities
9 Article of the Annotated Code of Maryland.

10
11 **SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS**

12 **Q. Please summarize your conclusions and recommendations in this proceeding.**

13 A. After reading the testimony of the Company’s witnesses and performing my own
14 analysis, I am recommending that the Commission:¹

15 (1) Grant a CPCN to OneEnergy Baker Point Solar, LLC for a 9.0 MW solar
16 generating facility;

17 (2) Require that the distribution Interconnection Service Agreement with The
18 Potomac Edison Company or a statement that The Potomac Edison Company
19 does not require a separate Interconnection Service Agreement for this project be
20 filed with the Commission prior to construction;

21 (3) Require that OneEnergy Baker Point Solar, LLC, its successors and assigns, be
22 required to provide a sixty (60) day written notice to the Commission of any non-
23 wholesale electricity sale to a Maryland retail electric customer and comply with
24 all regulations regarding such sale including obtaining any requisite
25 Interconnection Service Agreement(s) to deliver electricity into the respective

¹ The Responses of OneEnergy Baker Point Solar, LLC to Staff Data Request No. 1 are included with this testimony for inclusion in the record of this proceeding.

1 distribution systems of Maryland electric companies such as The Potomac Edison
2 Company;

3 (4) Require that OneEnergy Baker Point Solar, LLC, its successors and assigns,
4 provide written notice of any change in ownership of all, or any portion of the
5 Project, at least thirty (30) days prior to the closing date of any sale to a third
6 party. The written notice should include, but not be limited to the identity of the
7 third party, contact information by which the new and current owner may receive
8 any Commission inquiries, the proposed effective date of any change in
9 ownership, and documentation that demonstrates the capability of the prospective
10 owner to operate and maintain the project and to perform in accordance with the
11 conditions of any CPCN issued in this proceeding; and

12 (5) Include any additional conditions proposed by the other State agencies having
13 jurisdiction in this proceeding.

14
15 **TESTIMONY**

16 **Q. Who is the applicant in this case?**

17 A. OneEnergy Baker Point Solar, LLC (“OneEnergy Baker Point” or “Baker Point Solar”) is
18 the applicant requesting a CPCN in this case. OneEnergy Baker Point is a wholly owned
19 subsidiary of OneEnergy Inc. D/B/A OneEnergy Renewables (“OneEnergy
20 Renewables”). OneEnergy Renewables’ main offices are located in Seattle, Washington.
21 OneEnergy Renewables develops utility-scale renewable energy projects throughout
22 North America.

23
24 **Q. Please describe the Project identified in the application.**

25 A. OneEnergy Baker Point is requesting a CPCN to construct a 9.0 megawatt (“MW”) solar
26 generating facility (“Baker Point”) which will include approximately 14,117 solar PV
27 modules, a racking system, direct current (“DC”) to alternating current (“AC”) power

1 inverters, medium-voltage transformers, control and distribution cabinets, a medium-
2 voltage collection system, project switch gear, and other equipment necessary to
3 interconnect to the electric grid.
4

5 Baker Point Solar would be located on a 56-acre portion of a 60.75-acre parcel
6 approximately 4 miles northwest of the Town of Woodsboro and 12 miles north of
7 Frederick, Maryland at 12331 Old Frederick Road, Thurmont, Maryland 21788. The
8 property contains a farm complex consisting of an occupied residential dwelling, garage,
9 barn, and several storage buildings in a rural area surrounded by primarily agricultural
10 fields used for annual crop production. The property owner and the Applicant have
11 entered into a long-term lease in order to accommodate the project site.
12

13 The property is located in the Upper Potomac River tributary basin and situated within
14 the Upper Monocacy River Watershed. The Monocacy River is a tributary to the
15 Potomac River and eventually the Chesapeake Bay. The site primarily consists of
16 agricultural fields and does not contain forest cover or specimen and champion trees as
17 defined by Maryland Natural Resources Article Section 5-1601. Jurisdictional waters of
18 the United States and waters of the State are present in the form of an unnamed tributary
19 to the Monocacy River and adjoining palustrine emergent and farmed wetlands which
20 were identified by Triad Engineering, Inc. and verified by the Maryland Department of
21 the Environment (“MDE”) and the United States Army Corps of Engineers (“US ACE”).
22 Aside from these areas, there are no known sensitive or critical habitat areas at the site.
23

24 **Q. Please describe the process by which generators are connected to the regional**
25 **transmission system.**

26 A. The Regional Transmission Organization responsible for assessing transmission system
27 reliability and stability in Maryland is PJM Interconnection, LLC (“PJM”). A potential
28 interconnection customer, such as OneEnergy Baker Point, must comply with the PJM
29 Open Access Transmission Tariff (“OATT”), as approved by the Federal Energy
30 Regulatory Commission (“FERC”), and must become a PJM member.

1 PJM organizes generation interconnection requests into clusters, or queues, for the
2 purpose of identifying required transmission system improvements. Upon the receipt of
3 an interconnection request, PJM conducts sequential studies, provided the potential
4 customer meets certain requirements to retain its queue position. The studies are
5 dependent on other projects within the geographic area. The studies performed by PJM
6 are the Feasibility Study, the Impact Study, and the Facilities Study. The studies are
7 intended to determine what system enhancements are necessary to accommodate the
8 interconnecting generator and maintain the reliability and stability of the transmission
9 system. PJM and the transmission owner, in this case First Energy Corporation/The
10 Potomac Edison Company, require OneEnergy Baker Point to assume the financial
11 responsibility for any required upgrades to the distribution or transmission system. The
12 Potomac Edison Company (“PE” or the “Company”) retail electric customers that reside
13 in the State of Maryland will not have any role, obligation, responsibility, or cost in
14 interconnection of the project to the PJM or PE electric systems.

15
16 **Q. Please describe the Feasibility Study.**

17 A. Computer modeling of the electric system is used by PJM to evaluate the feasibility of
18 new generation with respect to compliance with the North American Electric Reliability
19 Corporation (“NERC”) Regional Reliability Council, Reliability First’s reliability and
20 stability criteria. Short circuit calculations are performed to ensure that circuit breaker
21 capacities are not exceeded. This report identifies direct connection requirements and
22 network impacts. Once the Feasibility Study is completed, a Feasibility Report is issued.
23 In order to maintain its queue position, the applicant must then execute an Impact Study
24 Agreement.

25
26 **Q. Please describe the Impact Study.**

27 A. The Impact Study is a continuation of the Feasibility Study with the inclusion of more
28 detailed analyses. Capacity Resources are evaluated for load deliverability and generation
29 deliverability. Load deliverability is a measure of the ability to transfer power to the load
30 in a particular sub-area. Generator deliverability is a measure of the ability to export

1 generation from a sub-area. Stability is evaluated for critical contingencies. Short circuit
2 calculations are performed, taking into consideration all elements of the regional plan, to
3 ensure that circuit breaker capacities are not exceeded. In order to maintain the queue
4 position, the applicant then must execute a Facilities Study Agreement (“FSA”).² By
5 executing the Facilities Study Agreement, the potential interconnection customer retains
6 the assigned priority in the PJM queues.

7
8 **Q. Can you explain what is meant by a Capacity Resource?**

9 A. A Capacity Resource has the right to schedule both capacity and energy deliveries at a
10 point of interconnection into PJM markets, pursuant to a bilateral contract or through
11 participation in the PJM capacity market. A capacity resource can provide both capacity
12 and energy to load serving entities to meet their load obligation, pursuant to the PJM
13 Reliability Assurance Agreement that is binding on all PJM members.

14
15 **Q. Are other studies or agreements required as part of the generator interconnection
16 process?**

17 A. In general any generator seeking to interconnect to the PJM transmission system would
18 be required to complete the Feasibility, Impact, and Facilities studies and execute the
19 study agreements described above.

20 The general interconnection protocol is that upon completion of the Facilities Study a
21 project is tendered an Interconnection Service Agreement (“ISA”) among and between
22 the project, PJM, and the transmission owner that is filed with the FERC. The ISA
23 describes the requirements for the physical and operational interconnection of the project
24 to the grid, direct connection requirements, and network upgrades and their cost. The
25 document may also specify requirements related to the operation and maintenance of the
26 system enhancements. The specifications are dependent upon the standards of the local

² A Facilities Study is an engineering study conducted by the Transmission Provider which describes the modifications required to be made to its system in order to safely interconnect the Generator to PJM’s electric system. A Facilities Study Agreement provides the results of this study, estimated cost responsibility, and milestone dates that the Applicant must meet in order to retain its queue position with PJM.

1 transmission owner. However, most of the system enhancements have already been
2 identified during the course of the PJM studies, since the local transmission owner
3 participates in the PJM studies. It is important for the generation owner and the
4 transmission owner to agree on how the interface should operate. This greatly reduces the
5 risk of failure and, thereby, improves safety and reliability for the local area grid.

6 The Construction Service Agreement (“CSA”) identifies terms and conditions, and
7 coordinates construction activities for completion of identified attachment facilities and
8 network transmission upgrades with the transmission owner, which in this instance is PE.
9 The cost of the attachment facilities and transmission system network upgrades are the
10 responsibility of Baker Point Solar, which is requesting to interconnect. This agreement
11 completes the interconnection process for a new generator to participate in the PJM
12 market.

13 Capacity Injection Rights (“CIRs”) are awarded to a project based on satisfactory
14 completion of milestones and requirements contained in the various agreements. CIRs
15 quantify the power that a project is permitted to deliver into PJM at a specified location,
16 enabling a project to participate in PJM’s capacity market. CIRs are unit-specific and
17 granted in a quantity commensurate with the megawatt (“MW”) size identified in a
18 generator’s interconnection request and ISA. CIRs allow the project to participate in
19 PJM as a capacity resource.

20
21 **Q. What is the current status and queue position of the Project?**

22 A. OneEnergy Baker Point has a generator interconnection queue number of AA1-109,
23 having submitted an interconnection request to PJM on October 31, 2014 with a proposed
24 in-service date no later than the 4th Quarter 2016. PJM initiated the interconnection study
25 process and completed the Feasibility Study in February 2015. The Impact Study was
26 completed in November 2015. PE determined that a Facilities Study will not be
27 necessary due to the simplicity of the interconnection and the fact that the project will not
28 have transmission system impacts. On December 31, 2015, PJM filed an executed ISA
29 with the FERC, under section 205 of the Federal Power Act and part 35 of the regulations

1 of the FERC, between OneEnergy Baker Point, PJM, and The Potomac Edison Company.
2 FERC granted the request by letter on January 22, 2016.

3
4 **Q. How will the Project be connected to the PJM transmission system?**

5 A. Baker Point Solar would interconnect to the PJM system through PE's subtransmission
6 system facilities, and, therefore, requires an Interconnection Service Agreement to that
7 effect with PE. The interconnection to the local grid would be undertaken by tapping
8 directly into PE's 34.5kV subtransmission circuit Catoctin-Carroll-Monocacy (Catoctin-
9 Troutville Junction Section) 2.07 miles southeast of the Company's Catoctin Substation.
10 To insure safety and reliability of the electric system, PE will be constructing protection
11 equipment including a recloser, load-break air switches, and communications equipment
12 that will allow the Company to isolate the solar project during certain contingencies on
13 the grid. Baker Point Solar would be responsible for all costs of the interconnection
14 upgrades identified in the interconnection studies. PE customers will not bear
15 responsibility for any cost or work associated with the upgrades.

16 The design and construction of all facilities to complete the interconnection would be the
17 responsibility of the FERC regulated transmission segment of PE. In addition,
18 OneEnergy Baker Point will be required to install telemetering and telemetry equipment
19 to provide revenue metering and real-time data to PJM in accordance with the OATT,
20 and to design and install relaying and metering to comply with PE's transmission
21 standards.

22
23 **Q. What are the interconnection and transmission network upgrade facilities and costs
24 identified in the Facilities Interconnection Study?**

25 A. The Feasibility and System Impact studies did not identify a need for any new
26 transmission system reinforcements or transmission network upgrades. The estimated

1 cost required for attachment of the project to PE's system is approximately \$302,100 with
2 construction contingencies,³ all of which will be paid by OneEnergy Baker Point Solar.

3
4 **Q. Why is the stability analysis important for new projects seeking to interconnect in**
5 **PJM?**

6 A. Stability is a measure of the transmission system's ability to recover from changes to its
7 normal operation. Large or sudden changes in load or generation output can have
8 significant impacts on transmission system operations resulting in voltage collapse or
9 cascading outages. Stability Analysis takes into consideration the responses of the
10 generator to requests for changes in real (MWs) and reactive power (MVARs) output.⁴

11
12 **Q. Have the effects of the Project on the reliability and stability of the electric system in**
13 **Maryland been determined?**

14 A. Prior to operation, OneEnergy Baker Point will be required to comply with PE's and
15 PJM's interconnection requirements and complete the requisite facility upgrades and
16 milestones specified in the ISA. The project's compliance with this agreement would
17 assure no adverse impact to the reliability and stability of the electric transmission
18 system. The additional generation capability of the project would be of benefit to
19 Maryland and the PJM system.

20
21 **Q. Why are you recommending CPCN conditions regarding reliability and**
22 **transmission system stability?**

³ Generation Interconnection Feasibility Study Report for PJM Generation Interconnection Request Queue Position AA1-109, November 2015.

⁴ Reactive power (MVARs) is energy lost in an alternating current circuit when the voltage and current are not in phase. This energy loss can be recovered by supplying reactive power to the circuit. Reactive power is lost to loads such as motors, transformers, and long transmission lines. Reactive power losses reduce the ability of a transmission system to deliver power. Extreme losses in reactive power can lead to voltage collapse or blackouts.

1 A. The ISA is a crucial document for maintaining the safety, reliability, and stability of the
2 electric transmission system. PJM posts ISA's as a matter of public record on its website.
3 In addition, the ISA will be filed by PJM with the FERC. The FERC approved ISA
4 should be required as a condition of any issuance of a CPCN and be filed with this
5 Commission prior to starting any construction activities.

6 Verification that the required facilities have been completed provides a level of assurance
7 to the Commission, and to the public, that the identified facilities were necessary and in
8 place prior to operation of the project. Certification of installed facilities and any
9 upgrades at the time of generator start-up is requested because the requirements are
10 subject to change, and some upgrades may not be required until after the generation
11 becomes operational. Compliance with the conditions also serves to notify the
12 Commission when the project begins commercial operation.

13
14 **Q. Do you have conditions to offer for inclusion in any CPCN regarding any potential**
15 **sale of electricity or capacity to a Maryland retail customer?**

16 A. History has shown the electric markets can and do change over time. Notwithstanding
17 current market conditions, it is not impossible that Maryland retail electric markets could
18 represent a higher value economic alternative than PJM wholesale markets during the
19 economic life of the Project. A multi-year contract with a retail electric customer located
20 in Maryland could be very attractive. The retail sale of electricity in Maryland by other
21 than an electric company providing standard offer service requires the supplier to be
22 licensed by the Commission prior to commencing any retail sale of electricity.⁵
23 Therefore, any CPCN issued in this proceeding should include a condition requiring that
24 OneEnergy Baker Point, its successors and assigns, file and obtain approval from the
25 Commission to conduct business as an electric retail supplier prior to start of any such
26 retail electric sale in Maryland.

⁵ PUC Article §7-507.

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CONCLUSIONS

Q. What are your conclusions regarding this Project?

A. Renewable energy projects, such as solar and wind farms, have been promoted and mandated by many states. State Renewable Portfolio Standards (“RPS”) require suppliers to utilize renewable resources to serve an increasing percentage of total demand or pay an alternative compliance fee. Maryland’s RPS target is 20 percent by 2022, with 2 percent being supplied by solar generation. The project would contribute toward meeting this goal.

Compliance with the ISA is critical for maintaining the reliability and stability of the electric system. Therefore, it has also been referenced in the proposed CPCN conditions for approval of the project.

Q. What is your recommendation in this matter?

A. Staff recommends that the Commission issue a CPCN to OneEnergy Baker Point Solar, LLC in accordance with the following conditions:

- (1) Grant a CPCN to OneEnergy Baker Point Solar, LLC for a 9.0 MW solar generating facility;
- (2) Require that the distribution Interconnection Service Agreement with The Potomac Edison Company or a statement that The Potomac Edison Company does not require a separate Interconnection Service Agreement for this project be filed with the Commission prior to construction;
- (3) Require that OneEnergy Baker Point Solar, LLC, its successors and assigns, be required to provide a sixty (60) day written notice to the Commission of any non-wholesale electricity sale to a Maryland retail electric customer and comply with all regulations regarding such sale including obtaining any requisite

1 Interconnection Agreement(s) to deliver electricity into the respective distribution
2 systems of Maryland electric companies such as The Potomac Edison Company;

3 (4) Require that OneEnergy Baker Point Solar, LLC, its successors and assigns,
4 provide written notice of any change in ownership of all, or any portion of the
5 Project, at least thirty (30) days prior to the closing date of any sale to a third
6 party. The written notice should include, but not be limited to, the identity of the
7 third party, contact information by which the new and current owner may receive
8 any Commission inquiries, the proposed effective date of any change in
9 ownership, and documentation that demonstrates the capability of the prospective
10 owner to operate and maintain the project and to perform in accordance with the
11 conditions of any CPCN issued in this proceeding; and

12 (5) Include any additional conditions proposed by the other State agencies having
13 jurisdiction in this proceeding.

14

15 **Q. Does this conclude your testimony?**

16 A. Yes.

17