

PREFILED SUPPLEMENTAL TESTIMONY OF  
WHITNEY RUBIN  
ON BEHALF OF AMERICAN BEECH SOLAR LLC

NCUC DOCKET NO. EMP-108, SUB 0

INTRODUCTION

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

A. My name is Whitney Rubin. I am a Development Manager with BayWa r.e. Solar Projects, LLC (“BayWa Solar”) at 17901 Von Karman Avenue, Suite 1050 in Irvine, CA 92614.

**Q. ARE YOU THE SAME WHITNEY RUBIN WHO CAUSED TO BE FILED PREFILED DIRECT TESTIMONY IN THIS MATTER ON JANUARY 27, 2020?**

A. I am.

**Q. WHAT IS THE PURPOSE OF THIS SUPPLEMENTAL DIRECT TESTIMONY?**

A. My testimony is intended to provide additional information in response to the Commission’s June 22, 2020, *Order Requiring Additional Testimony*, which directed the Applicant to file additional testimony addressing issues related to interconnection costs and the Applicant’s plans to sell the energy and capacity generated by the Project.

**Q. PLEASE DESCRIBE ALL INTERCONNECTION STUDIES RECEIVED FOR THE PROPOSED FACILITY.**

A. As indicated in my prefiled direct testimony, the American Beech Solar project has two positions in the PJM interconnection queue, each of which corresponds to a portion of the planned 110 MW capacity of the project. PJM conducts system impact studies for interconnection requests in clusters, with two clusters being studied every year. Eighty megawatts (MW) of the capacity of American Beech was studied in the AC1 cluster (Queue Position AC1-098/AC1-099).

Eighty megawatts MW of the capacity of American Beech was studied in the subsequent (AC2) cluster (Queue Position AC2-083/AC2-084). Note that this while this second queue position studied a capacity of 80 MW, American Beech at this time plans to construct (and has sought a CPCN for) only 30 MW of this capacity, bringing the total capacity of the planned project to 110 MW as indicated in the Application and my Prefiled Direct Testimony.

As indicated in my prefiled testimony, 80 MW of the 110 MW of capacity reflected in the Application was studied in the AC1 queue positions and 30 MW was studied in the AC2 queue positions. AC1-098/099 shares the same point of interconnection and was studied as a single project. AC2-083/084 also shares the same point of interconnection and was studied as one project.

American Beech has received the following studies:

- Queue Positions AC1-098/099:
  - Feasibility Study Report for PJM Interconnection Request – Queue Position AC1-098 (May 2017) (Attachment A)
  - Feasibility Study Report for PJM Interconnection Request – Queue Position AC1-099 (May 2017) (Attachment B)
  - Generation Interconnection System Impact Study Report for PJM Interconnection Request – Queue Position AC1-098/AC1-099 (Nov. 2017) (Attachment C)
  - Revised Generation Interconnection System Impact Study Report for PJM Interconnection Request – Queue Position AC1-098/AC1-099 (Jan. 2020) (Attachment D)
  - Generation Interconnection Facility Study Report for PJM Interconnection Request – Queue Position AC1-098/AC1-099 (Jan. 2020) (Attachment E)

• Queue Positions AC2-083/084:

- Generation Interconnection Feasibility Study Report for PJM Interconnection Request – Queue Position AC2-083/084 (Sept. 2017) (Attachment F)
- Generation Interconnection System Impact Study Report for PJM Interconnection Request – Queue Position AC2-083/AC2-084 (Aug. 2018) (Attachment G)

Note that because PJM uses a cluster study process, the results of a System Impact Study (“SIS”) for a particular cluster – both in terms of required Upgrades and in terms of the allocation of costs for those upgrades – may change dramatically as other projects withdraw from the queue. Thus, it may be difficult for a project to have a firm idea of what its upgrade costs will be until it actually receives an Interconnection Service Agreement (“ISA”), which is generally delivered along with an updated System Impact Study and a Facilities Study Report.

For example, the SIS for AC1-098/099 delivered in November 2017 allocated the project [REDACTED] in costs for New System Upgrades and Contributions to Previously Identified Upgrades (also referred to as “System Reinforcement Upgrades” in the study). Attachment C at 3, 6. However, a revised SIS for AC1-098/099 issued in January 2020 allocated to the project only [REDACTED] for such upgrades. Attachment D at 3, 5. Although the August 2018 SIS for AC2-083/084 allocates [REDACTED] [REDACTED] [REDACTED] [REDACTED] in similar Upgrades to Phase II of the project (*see* Attachment G at 3, 6), the Applicant anticipates a significant reduction in allocated costs when the revised SIS for AC2-083/084 is released along with the Facility Study Report and an ISA for the project is issued. In

any event, as previously discussed, those costs will be paid by the Applicant and will not be reimbursed.

As discussed in my direct testimony, American Beech received an executable ISA for AC1-098/99 on January 6, 2020 (Attachment H). The ISA provides the terms and conditions under which the first 80 MW of the Project will interconnect. The estimated Direction and Non Direct Connection Network Upgrade charges for the Project are [REDACTED]. The estimated Attachment Facility charges are [REDACTED] for a total estimated cost of [REDACTED] not including New System and Previously Identified Upgrades, which total only [REDACTED] as discussed above. The Project will fund the entire cost of these upgrades and does not expect to receive reimbursement of those costs from PJM, Dominion, or Dominion's ratepayers.

An amendment to the Interconnection Service Agreement adding Phase II of the project (which was assigned PJM Queue No. AC2-083/84) is expected by August 30, 2020. Additional costs, if any, solely for the New System Upgrades and Previously Identified Upgrades will be identified in the Facilities Study. As both AC1-098/099 and AC2-083/084 were modeled by PJM as one project sharing the same POI, the Applicant does not anticipate significant additional Direct Costs and Attachment Facility costs for Phase II beyond those allocated in the Phase I ISA.

In addition to the studies referenced above, PJM conducted (at the Applicant's request) an optional "sensitivity study" to determine whether the project could come fully in service prior to the completion of certain PJM Baseline Upgrades, designated b2990 and b3121. A sensitivity study is an optional study that analyzes certain assumptions specified by the Interconnection

Customer. PJM did not release any documentation reflecting the results of the sensitivity study, but simply informed American Beech that: (a) upgrade b2290 has already been completed; and (b) b3121 “is no longer required for AC1-098/099 to go in service.” A sensitivity study is also underway for AC2-083/084.

**Q. DO YOU EXPECT TO RECEIVE ANY FURTHER INTERCONNECTION STUDIES?**

A. Yes. American Beech expects to receive the Interconnection Service Agreement for AC2-083/84, along with a Facilities Study and updated SIS, by August 30, 2020. However, PJM recently issued a delay notice stating it might take until as late as November 2020 to complete the study. In addition, American Beech expects to receive an Interim Deliverability Study for AC1-098/AC1-099 on or around August 25, 2020. This study is discussed further below.

**Q. PLEASE CALCULATE THE LEVELIZED COST OF TRANSMISSION (LCOT) FOR ANY REQUIRED TRANSMISSION SYSTEM UPGRADES OR MODIFICATIONS FOR THE PROJECT.**

A. Based on the current ISA, the LCOT for the Network Upgrades required for AC1-098/AC1-099 is [REDACTED] Details of the calculations and assumptions are included in Attachment I. It is important to note that this calculation is based on only the 80 MW capacity corresponding to AC1-098/099 and includes only the Network Upgrade costs identified for that queue position. None of these costs will be reimbursed to American Beech or borne by ratepayers.

**Q. ARE YOU AWARE OF ANY SYSTEM OTHER THAN THE STUDIED SYSTEM THAT IS OR WILL BE AFFECTED BY THE INTERCONNECTION OF THE PROJECT? IF SO, EXPLAIN THE IMPACT AND BASIS.**

112           A.     Yes. The updated System Impact Study for AC1-098/099 indicates that if projects  
113 in the AC1 cluster were interconnected, power flow from these projects could contribute to an  
114 overload on the Duke Energy Progress (“DEP”) Battleboro – Rocky Mount 115 kV line, which is  
115 just on the Duke side of the “seam” between DEP’s service territory and Dominion / PJM. *See*  
116 Attachment D at 5, 14. According to the SIS, reconductoring of that line would need to be  
117 completed before American Beech and other projects identified in the AC1 cluster could be fully  
118 deliverable to PJM. The ISA also states that “Except as determined through an interim  
119 deliverability study for a particular Delivery Year . . . the Customer Facility under this ISA cannot  
120 come fully in service prior to the completion of the Duke Energy Process upgrade reconductoring  
121 the Battleboro – Rocky Mount 115 kV line.” Attachment H, Schedule F.

122           Is the Applicant’s understanding that PJM and Duke previously identified a potential  
123 overload on this DEP line in connection with the AB2 cluster. The SIS states that the overload  
124 on this line was “initially cause by prior Queue positions with additional contribution to  
125 overloading by this project.” Attachment D at 13. This concern is also reflected in an Affected  
126 System Study conducted by DEP for the AB2 cluster in December 2016 (Attachment J), which  
127 identified an overload on the Rocky Mount-Battleboro 115 kV line and estimated that it would  
128 cost approximately \$15 million to complete the reconductoring of the line. The Applicant does  
129 not know whether the results of that study remain valid as to the AB2 cluster projects.

130           However, even if the upgrade to DEP’s system were not already required by prior-queued  
131 projects, neither American Beech nor any other single project in the AC1 or AC2 cluster would be  
132 the “first to cause” the need for the upgrade. A subsequent Affected System Study completed in  
133 May 2020 for PJM Cluster AC1 (Attachment K) also identified an overload on the Rocky Mount-  
134 Battleboro line associated with five AC1 cluster projects (AC1-034, AC1-086, AC1-098/099,

AC1-189, and AC1-208), and estimated a cost of \$23,204,593 and a completion date of Dec. 31, 2022 for the reconductoring project. If the upgrade were constructed, responsibility for the upgrade would be allocated among the projects in the AC1 cluster, and possibly additional projects in the AC2 and/or subsequent clusters. The Applicant is unaware of whether and to what extent the costs of such an upgrade would be borne by transmission customers or by ratepayers of DEP and/or PJM.

**Q. CAN AMERICAN BEECH ACHIEVE COMMERCIAL OPERATION WITHOUT THE COMPLETION OF THIS UPGRADE TO DEP'S SYSTEM?**

A. To the best of the Applicant's knowledge, there is no current plan for reconductoring DEP's Rocky Mount-Battleboro 115 kV line. Because American Beech hopes to come online prior to completion of the upgrade, the project has requested an interim deliverability study from PJM.

The Interim Deliverability Study is intended to determine the capability of the existing transmission system to accommodate the output of the project, prior to the construction of any Upgrades identified in interconnection studies. An Interim Deliverability Study might, for example, indicate that until required upgrades are constructed, only some of the planned capacity of the project can be accommodated at certain times or under certain contingency conditions.

There will be separate deliverability study results for AC1-098/099 and AC2-083/084. Results of those studies are expected to be completed by August 25, 2020.

**Q. DOES THE FACILITY PROPOSE TO SELL ITS ENERGY AND CAPACITY TO A DISTRIBUTION UTILITY REGULATED BY THE COMMISSION?**

A. No.

157           **Q.     DOES THE FACILITY PROPOSE TO SELL ITS ENERGY AND**  
158 **CAPACITY TO A DISTRIBUTION UTILITY NOT REGULATED BY THE**  
159 **COMMISSION BUT SERVING RETAIL CUSTOMERS IN NORTH CAROLINA?**

160           A.     No.

161           **Q.     DOES THE FACILITY PROPOSE TO SELL ITS ENERGY AND**  
162 **CAPACITY TO A PURCHASER WHO IS SUBJECT TO A STATUTORY OR**  
163 **REGULATORY MANDATE WITH RESPECT TO ITS ENERGY SOURCING?**

164           A.     Not at this time. If American Beech’s current negotiations with a commercial  
165 energy offtaker (discussed below) are unsuccessful, then American Beech may explore the  
166 possibility of selling energy to a compliance buyer and will update the Commission in that event.

167           **Q.     ARE THERE ANY PPA AGREEMENTS, REC SALE CONTRACTS, OR**  
168 **CONTRACTS FOR COMPENSATION FOR ENVIRONMENTAL ATTRIBUTES FOR**  
169 **THE OUTPUT OF THIS FACILITY?**

170           A.     There are currently no executed agreements to sell the output of the Facility.  
171 American Beech is currently in late-stage negotiations with a specified Commercial and Industrial  
172 (“C&I”) offtaker for the energy provided by the Facility and has signed a Letter of Intent with that  
173 offtaker. That letter of intent has expired due to the passage of time, but the parties are negotiating  
174 an extension letter which the Applicant will file once it has been executed.

175           American Beech is negotiating with a separate C&I customer for the sale of Renewable  
176 Energy Credits (“RECs”) generated by the project. American Beech will supplement its testimony  
177 and provide copies of any Power Purchase or REC sale agreements when they are executed.

178           American Beech intends to sell the capacity provided by the Facility into the PJM Capacity  
179 Auction.



180           **Q.     IS IT FEASIBLE TO EXPECT A PROJECT LIKE AMERICAN BEECH TO**  
181 **ENTER INTO A FULLY-EXECUTED OFFTAKE AGREEMENT PRIOR TO**  
182 **OBTAINING A CPCN?**

183           A.     It is prohibitively difficult and risky to enter into a PPA prior to getting a CPCN.  
184 Offtakers generally require nonrefundable performance assurances (*i.e.*, deposits that are forfeit if  
185 the project does not achieve operation) in PPAs. American Beech cannot reasonably post  
186 nonrefundable security for a PPA prior to having received a CPCN.

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

188           A.     Yes.

**PUBLIC (REDACTED) VERSION**

**NCUC DOCKET NO. EMP-108, SUB 0**

**SUPPLEMENTAL PRE-FILED DIRECT TESTIMONY OF  
WHITNEY RUBIN  
ON BEHALF OF AMERICAN BEECH SOLAR LLC**

**ATTACHMENTS**

A	Feasibility Study Report for PJM Interconnection Request – Queue Position AC1-098 (May 2017) <b>[CONFIDENTIAL]</b>
B	Feasibility Study Report for PJM Interconnection Request – Queue Position AC1-099 (May 2017) (Attachment B) <b>[CONFIDENTIAL]</b>
C	Generation Interconnection System Impact Study Report for PJM Interconnection Request – Queue Position AC1-098/AC1-099 (Nov. 2017) <b>[CONFIDENTIAL]</b>
D	Revised Generation Interconnection System Impact Study Report for PJM Interconnection Request – Queue Position AC1-098/AC1-099 (Jan. 2020) <b>[CONFIDENTIAL]</b>
E	Generation Interconnection Facility Study Report for PJM Interconnection Request – Queue Position AC1-098/AC1-099 (Jan. 2020) <b>[CONFIDENTIAL]</b>
F	Generation Interconnection Feasibility Study Report for PJM Interconnection Request – Queue Position AC2-083/084 (Sept. 2017) <b>[CONFIDENTIAL]</b>
G	Generation Interconnection System Impact Study Report for PJM Interconnection Request – Queue Position AC2-083/AC2-084 (Aug. 2018) <b>[CONFIDENTIAL]</b>
H	Interconnection Service Agreement Among PJM Interconnection, L.L.C. and American Beech Solar LLC and Virginia Electric and Power Company (PJM Queue # AC1-098/AC1-099) (Jan. 2020) <b>[CONFIDENTIAL]</b>
I	LCOT Calculations for American Beech Phase I <b>[CONFIDENTIAL]</b>
J	Generator Interconnection Affected System Study Report, PJM Interconnection Cluster AB2 (Dec. 2016)
K	Generator Interconnection Affected System Study Report, PJM Interconnection Cluster AB2 (Jan. 2020)

**PUBLIC (REDACTED) VERSION**

**CERTIFICATE OF SERVICE**

This is to certify that the undersigned has this day served the foregoing **PREFILED SUPPLEMENTAL TESTIMONY OF WHITNEY RUBIN** upon the following by electronic mail as follows:

*Christopher Ayers, Esq.*  
Executive Director - NC Public Staff  
Chris.Ayers@psncuc.nc.gov

Megan Jost  
NC Public Staff - Legal Division  
megan.jost@psncuc.nc.gov

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

This the 8th day of July, 2020.

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

Benjamin L. Snowden