

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. EMP-119, SUB 0
DOCKET NO. EMP-119, SUB 1

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. EMP-119, SUB 0)	
)	
In the Matter of)	
Application of Macadamia Solar, LLC for)	
a Certificate of Public Convenience and)	
Necessity to Construct a Merchant Plant)	
Solar Energy Facility in Washington)	
County, North Carolina)	ORDER GRANTING
)	CERTIFICATES OF PUBLIC
DOCKET NO. EMP-119, SUB 1)	CONVENIENCE AND NECESSITY
)	
In the Matter of)	
Application of Macadamia Solar, LLC for a)	
Certificate of Environmental Compatibility)	
and Public Convenience and Necessity to)	
Construct Transmission Line in)	
Washington County, North Carolina)	

HEARD: September 6, 2022, at 1:00 p.m., in Commission Hearing Room 2115, Dobbs Building, 430 North Salisbury Street, Raleigh, North Carolina 27603

BEFORE: Chair Charlotte A. Mitchell, Presiding; and Commissioners Kimberly W. Duffley and Daniel G. Clodfelter.

APPEARANCES:

For Macadamia Solar, LLC:

Ben Snowden and Jonathan L. Taggart, Fox Rothschild, LLP, 434 South Fayetteville Street, Suite 2800, Raleigh, North Carolina 27601

For the Using and Consuming Public:

Robert B. Josey, Nadia L. Luhr, William E.J. Creech, Public Staff – North Carolina Utilities Commission, 4326 Mail Service Center, Raleigh, North Carolina 27699-4300

BY THE COMMISSION: On August 30, 2021, Macadamia Solar, LLC (Macadamia or Applicant) filed an application for a Certificate of Public Convenience and Necessity (CPCN), pursuant to N.C. Gen. Stat. § 62-110.1 and Commission Rule R8-63, for the construction of a solar photovoltaic (PV) facility with a capacity of 484 MW (Facility) in Washington County, North Carolina in Docket No. EMP-119, Sub 0 (Facility CPCN Application). On the same date, Macadamia prefiled the direct testimony of Kara Price and Donna Robichaud in support of the Facility CPCN Application.

On September 13, 2021, Macadamia filed an application for a Certificate of Environmental Compatibility and Public Convenience and Necessity (CECPCN), pursuant to N.C. Gen. Stat. § 62-101, 62-102, and 62-104 and Commission Rule R8-62, to construct an approximately 6.53-mile 230 kV Transmission Line to allow interconnection of the Facility to the existing 230 kV Trowbridge Substation operated by Virginia Electric and Power Company, d/b/a Dominion Energy North Carolina (DENC) in Docket No. EMP-119, Sub 1 (Transmission Line CECPCN Application and, together with the Facility CPCN Application, the Applications). On the same date, Macadamia prefiled the direct testimony of Amanda Corll, Kara Price, Donna Robichaud, and Robert Turnbull in support of the Transmission Line CECPCN Application.

On September 9, 2021, the Public Staff filed a Notice of Completeness stating that it had reviewed the Facility CPCN Application as required by Commission Rule R8-63(d) and considered it to be complete. In addition, the Public Staff requested that the Commission issue a procedural order.

On September 15, 2021, the Commission issued an Order Scheduling Public Hearing, Requiring Public Notice and Requiring Clearinghouse Review for the Transmission Line CECPCN Application.

On September 24, 2021, the Commission issued an Order Consolidating Dockets, Scheduling Hearings, Requiring Filing of Testimony, Establishing Procedural Guidelines, and Requiring Public Notice (Procedural Order) that scheduled hearings, established a procedural schedule, and directed the Applicant to publish notice of the Applications once a week for four successive weeks. That order required Macadamia to answer certain questions regarding, among other things, the presence and amount of Network Upgrade costs or Affected System costs, interconnection studies, and the output of the proposed Facility.

On October 14, 2021, the Commission issued an Order Amending Public Notice that included additional information regarding how to register to speak at the remote public witness hearing. The Commission directed Macadamia to publish the amended Public Notice for the remaining public notice period.

On October 19, 2021, Macadamia filed a letter notifying the Commission of a mutual agreement between Macadamia and the Public Staff to extend certain discovery deadlines contained in the Procedural Order.

On October 20, 2021, Macadamia filed the supplemental prefiled direct testimony of witness Robichaud.

On October 21, 2021, the North Carolina Department of Administration (NC DOA), through the State Clearinghouse, filed a letter in Docket No. EMP-119, Sub 1 indicating that the Department of Cultural Resources had requested additional information regarding the CECPCN Transmission Line application.

On October 25, 2021, Macadamia filed Affidavits of Publication evidencing publication of the Public Notice in the Roanoke Beacon in Washington County on September 29, October 6 and 13, 2021, and the amended Public Notice on October 20, 2021.

On October 29, 2021, the Commission issued an Order Canceling Public Witness Hearing.

On November 1, 2021, the NC DOA filed a letter indicating that the State Clearinghouse had reviewed the environmental impact information for the Facility under the provisions of the North Carolina Environmental Policy Act (NCEPA) and had determined that no further review action was necessary for compliance with NCEPA.

On November 23, 2021, the Public Staff filed the testimony of witness Jay B. Lucas with some confidential portions.

On December 10, 2021, Macadamia filed the prefiled rebuttal testimony of witnesses Robichaud and Corll and witness Sami Abdulsalam.

On January 4, 2022, Macadamia filed a Consent Motion to Continue Hearing. Macadamia stated in that Motion that it expected to receive a retooled System Impact Study (SIS) for the AD1 Cluster late in January 2022 and an Affected System Study (if necessary) approximately 30 days after that. Macadamia argued that it would be efficient and appropriate to delay the expert witness hearing, then scheduled for January 25, 2022, to allow sufficient time for the studies to be completed and for the parties to provide supplemental testimony if necessary.

On January 5, 2022, the Commission issued an Order Granting Consent Motion to Continue Hearing.

On May 25, 2022, Macadamia filed the second supplemental prefiled testimony and exhibits of witnesses Robichaud and Corll. Witness Robichaud's supplemental testimony included a confidential exhibit.

On June 1, 2022, Macadamia filed a Consent Motion for Procedural Schedule.

On June 14, 2022, the Commission issued an Order Scheduling Hearing and the Filing of Testimony. In that Order, the Commission scheduled the evidentiary hearing in the consolidated matter for September 6, 2022, in the Commission Hearing Room.

On June 29, 2022, the Public Staff filed the supplemental testimony and exhibit of witness Lucas recommending approval of Macadamia's CPCN and CECPCN requests, subject to conditions.

On July 6, 2022, the NC DOA, through the State Clearinghouse, filed additional comments in Docket No. EMP-119, Sub 1, the CECPCN Transmission Line proceeding, indicating that no further review was necessary for compliance with the NCEPA.

On July 13, 2022, Macadamia filed the second supplemental prefiled reply testimony of witness Robichaud, which included a confidential exhibit.

On July 25, 2022, the Public Staff filed a Consent Motion for Procedural Order in Docket Nos. EMP-119, Subs 0 and 1, EMP-110, Sub 0, and EMP-111, Sub 0. Docket No. EMP-110, Sub 0 concerns the Application of Sumac Solar LLC (Sumac) for a CPCN to construct a 120 MW solar facility in Bertie County, North Carolina. Docket No. EMP-111, Sub 0 concerns the Application of Sweetleaf Solar (Sweetleaf) to construct a 94 MW solar facility in Halifax County, North Carolina. The Public Staff proposed a procedural schedule for the applicants in the four proceedings, to which all the applicants had agreed. The Public Staff noted that all the proposed facilities are in the PJM AD1 cluster and trigger an Affected System upgrade on the Everetts – Greenville transmission line in Duke Energy Progress, LLC (DEP) territory (the DEP Upgrade). The Public Staff noted that Geenex Solar, LLC (Geenex Solar) has primary responsibility for the development of all three projects. Sumac and Sweetleaf were formerly owned by Geenex Solar but were subsequently acquired by EDF Renewables Development, Inc. (EDF). Geenex Solar owns Macadamia but is partnering with EDF in the development of that project and EDF has an option to acquire the Macadamia Facility. The Public Staff noted that there was also overlap in the expert witnesses providing testimony in all three CPCN dockets. The Public Staff asserted that, given the relationship between the Applicants and the overlap in witnesses, it made sense to hold all three CPCN hearings on September 6, 2022. The Public Staff's proposed schedule set deadlines for the filing of supplemental testimony and supplemental reply testimony in Docket Nos. EMP-110, Sub 0 and EMP-111, Sub 0.

On August 5, 2022, the Commission issued an Order Accepting Testimony, Requiring Further Testimony, and Scheduling Hearings in Docket Nos. EMP-110, Sub 0 and EMP-111, Sub 0. That order accepted supplemental testimony filed in Docket Nos. EMP-110, Sub 0 and EMP-111, Sub 0; set a date for the filing of supplemental reply testimony in those dockets; scheduled the expert witness hearing in Docket No. EMP-110, Sub 0 to immediately follow the expert witness hearing in Docket No. EMP-119, Subs 0 and 1 on September 6, 2022; and scheduled the expert witness hearing in Docket No. EMP-111, Sub 0 to immediately follow the hearing for Docket No. EMP-110, Sub 0.

On August 15, 2022, Macadamia filed a letter with two confidential attachments providing an update regarding an Affected System Operating Agreement (ASOA) with DEP pursuant to which DEP would construct the DEP Upgrade. Macadamia stated that it was in the process of negotiating an ASOA for the DEP Upgrade, which would not provide for reimbursement of any Affected System Upgrade costs paid by Macadamia. Macadamia stated that DEP planned to rebuild the Everetts – Greenville 230 kV line for reliability reasons due to the age and condition of the line. The incremental cost for accommodating the interconnection of Macadamia and the other AD1 projects was \$350,000. However, Macadamia stated, DEP had indicated that it would not complete the work until 2026 or 2027 unless an interconnection customer paid to expedite it. Macadamia asserted that because an in-service date in 2026 or later would adversely affect the economics of the AD1 projects, Macadamia was negotiating an ASOA with DEP that would expedite the work to 2025 at a cost of approximately \$1.6 million in addition to the cost of the reconductoring. The August 15 letter also stated that on August 9, 2022, DEP had provided Macadamia an executable ASOA providing for completion of the DEP Upgrade by December 31, 2025. The draft ASOA estimated an incremental cost of \$150,000 for the reconductoring of the Everetts – Greenville 230 kV line and expediting costs of \$1,615,000 for a total cost of \$1,765,000. The draft ASOA did not provide for any reimbursement of those costs to Macadamia and would not impose any costs on DEP ratepayers. Macadamia stated that DEP had indicated that it would file the final ASOA with the Federal Energy Regulatory Commission (FERC) for approval and that Macadamia or Geenex Solar would file in support to the ASOA. Macadamia was optimistic that FERC would find an ASOA not providing for reimbursement just and reasonable under the circumstances.

Macadamia included updated LCOT calculations based on the cost estimates in the draft ASOA. For the DEP Upgrade, Macadamia calculated a revised levelized cost of transmission (LCOT) of \$0.05/MWh if all projects in the AD1 cluster that benefitted from the upgrade are considered and \$0.07/MWh if only Macadamia is considered.

On August 12, 2022, Sumac and Sweetleaf filed supplemental reply testimony of witness Robichaud.

On August 18, 2022, Macadamia filed a Consent Motion to Excuse Witnesses Corll and Abdulsalam from the expert witness hearing scheduled for September 6, 2022.

On August 24, 2022, the Commission issued an Order Excusing Witnesses from Expert Witness Hearing that excused witnesses Corll and Abdulsalam from appearance at the hearing and accepted their prefiled testimony and exhibits into the record.

On August 30, 2022, the Public Staff filed a Motion for Leave to File Joint Supplemental Testimony in Docket Nos. EMP-110, Sub 0, EMP-111, Sub 0, and EMP-119, Sub 0 requesting permission to file the joint supplemental testimony of witnesses Lucas and Evan D. Lawrence in those dockets. The Public Staff asserted that the potential for an ASOA between Macadamia and DEP providing for fees for the expediting of Affected System Upgrades necessitated the filing of supplemental testimony

revising the Public Staff recommendations in the dockets. The Public Staff also filed the supplemental testimony. The Public Staff noted that FERC would have to approve an ASOA between DEP and Macadamia (or DEP and Sumac or Sweetleaf). The Public Staff expressed the concern that if FERC were to rule that the modification to the ASOA's reimbursement provision is not just and reasonable, then DEP's ratepayers would ultimately pay for the upgrades, which would be especially unfair and problematic in this instance because the additional fee to expedite the required work on DEP's system is not necessary for the three facilities to interconnect. The Public Staff recommended that the Commission not issue CPCNs for Macadamia, Sumac, or Sweetleaf until FERC issues a decision on the ASOA. If FERC rules that the expediting fee is reimbursable by DEP's customers, the Public Staff recommended denial of the CPCNs. If the three applicants elect not to expedite the DEP Upgrade or if FERC rules that the fee to expedite is not subject to reimbursement, the Public Staff recommended that the Commission grant the CPCNs, subject to conditions the Public Staff had recommended earlier in the proceedings in each of the dockets.

On September 2, 2022, the Public Staff filed a letter in all three CPCN dockets indicating that the Public Staff and the Applicants had come to an agreement in these dockets. The Applicants had agreed not to seek expedited construction of the DEP Upgrade. In return, the Public Staff recommended that the Commission accept the Public Staff's joint supplemental testimony and approve the CPCN applications for the Applicants, foregoing any conditions on the certificates that may prevent the Applicants and DEP from executing an ASOA providing for reimbursement of the estimated \$150,000 to construct the incremental Network Upgrades on the Everetts – Greenville line. The Public Staff included affidavits of representatives for the Applicants affirming that the Applicants would not seek expedited construction on the Network Upgrades.

Also on September 2, 2022, the Commission issued an Order Accepting Supplemental Testimony and Providing Questions to be Answered at Hearings (September 2 Order) in Docket Nos. EMP-110, Sub 0, EMP-111, Sub 0, and EMP-119, Subs 0 and 1. In that order, the Commission granted the Public Staff's motion and accepted the joint supplemental testimony of the Public Staff witnesses Lucas and Lawrence into each respective docket. Based on that testimony and the record as a whole, the Commission directed the Applicants and the Public Staff to produce witnesses at the September 6, 2022 hearings to provide testimony in each respective docket addressing specific questions that the Commission recited in the order.

On September 6, 2022, the Commission convened the hearing for Docket No. EMP-119, Subs 0 and 1 in Commission Hearing Room 2115 at 1:00 p.m. as scheduled. Upon opening the hearing, the Chair noted that the parties had waived cross-examination of each other's witnesses and that the witnesses were being presented solely to answer the questions the Commission posed in its September 2 Order. Because the issues those questions addressed are common among the three dockets, the Commission consolidated the proceedings in Docket Nos. EMP-110, Sub 0; EMP-111, Sub 0; and EMP-119, Subs 0 and 1, solely to receive testimony on the Commission questions. The Commission noted that a copy of the transcript of the consolidated hearing would be

placed in all three dockets and that the Commission would issue a subsequent order in each respective docket accepting into the record the testimony and exhibits of the parties' witnesses the Applicants had filed in each docket.

At the hearing, Applicant witness Robichaud testified that Macadamia had sought to expedite the DEP Upgrade because a delay in achieving commercial operation would increase project risk related to site control, zoning approvals, inflation, and changes in marketability. Witness Robichaud further testified regarding Macadamia's efforts to engage with FERC regarding DEP's calculation of costs to expedite work on the DEP Upgrade and regarding the potential for FERC approval of an ASOA that does not provide for reimbursement of Affected System costs or the costs for expediting those costs. Witness Robichaud asserted that uncertainty about Macadamia's CPCN would complicate Macadamia's obtaining funding for interconnection obligations due in the fall, which was one reason Macadamia had agreed with the Public Staff not to seek expediting of the upgrade work so that the Commission could issue a CPCN before those obligations are due. Witness Robichaud informed the Commission that because costs to expedite the work would not be part of the ASOA, it was more likely that Sumac would sign the ASOA. Sumac had originally been assigned responsibility for the upgrade, but Macadamia, being larger, was economically better able to bear the increased costs of expediting the upgrade. Without those costs, witness Robichaud stated, Sumac could more easily absorb the cost of the DEP upgrade and would likely execute the ASOA.

On September 8, 2022, the Public Staff filed a letter and late-filed Exhibit 1 with the Commission. The exhibit included emails between the Public Staff and DEP wherein DEP's counsel provided information regarding questions the Commission had posed to the Public Staff at the evidentiary hearing. DEP stated that it had discovered the overload on the Everetts – Greenville line approximately two years before first discussing the overload in the Affected System study report for the PJM AD1 cluster published in April 2021. As made clear in late-filed Exhibit 1, DEP has not presented the overload to the North Carolina Transmission Planning Collaborative (NCTPC) or its Transmission Advisory Group. However, discussion of the DEP Upgrade will be included in the next NCTPC plan, after FERC makes a decision regarding the ASOA.

On September 8, 2022, the Commission issued an Order Accepting Testimony and Requiring Proposed Orders in Docket No. EMP-119, Subs 0 and 1, wherein the Commission received all witnesses' prefiled testimony, exhibits, and affidavits into the record to the extent they had not already been received and required proposed orders on or before 30 days from the notice of the transcript of the consolidated hearing held on September 6, 2022.

On October 19, 2022, the Public Staff and Macadamia filed proposed orders in these dockets.

Also on October 19, 2022, the Applicants in Docket Nos. EMP-110, Sub 0, EMP-111, Sub 0, and EMP-119, Subs 0 and 1 filed with the Commission an ASOA between Sumac and DEP. The Applicants also filed the ASOA with FERC. The ASOA

provides for the construction of the DEP Upgrade at a cost of approximately \$150,000. DEP filed the ASOA unexecuted because, as DEP explains, it is current litigating, on appeal to the Court of Appeals, D.C. Circuit, FERC's decision to require DEP to provide reimbursement to the customer under the ASOA.

FINDINGS OF FACT

1. Macadamia Solar, LLC (Macadamia) is a North Carolina Limited Liability Company with its principal place of business in Charlotte, North Carolina. Macadamia Solar is owned by Geenex Solar, LLC, a solar developer based in Charlotte, North Carolina. Geenex Solar is a Delaware limited liability company. Both Macadamia Solar and Geenex Solar are wholly owned subsidiaries of Geenex Holding, LLC.

2. In compliance with N.C.G.S. § 62-110.1 and Commission Rule R8-63, Macadamia filed with the Commission an application for a CPCN authorizing the construction of the Facility to be built on approximately 5,543.6 acres of privately owned land outside Plymouth in Washington County. The proposed Facility will be located at and around the intersection of Highway 32 and Highway 99 outside Plymouth, North Carolina.

3. In compliance with N.C.G.S. § 62-101 *et seq.* and Commission Rule R8-62, Macadamia filed with the Commission an application for a CECPCN authorizing the construction of approximately 6.53 miles of 230 kV Transmission Line between the Facility's substation located at the project site and the Trowbridge Substation operated by DENC.

4. The Applications have met all requirements for publication of notice.

5. Macadamia is financially and operationally able to undertake the construction and operation of the Facility.

6. The Facility is a solar energy facility and will interconnect to the grid operated by DENC. It has been assigned interconnection request numbers of AD1-074 (300 MW), AD1-075 (75 MW) and AD1-076 (109 MW). Construction of the Facility is anticipated to begin in or around the fourth quarter of 2023, with an expected commercial operation date for the Facility in the fourth quarter of 2025.

7. The Facility's nameplate generating capacity will be up to 484 MW, with anticipated gross capacity of approximately 486 MW and anticipated generation of 1237 GWh per year.

8. The Facility will generate renewable energy credits (RECs) that could be used by electric power suppliers to meet the requirements of the renewable energy and energy efficiency portfolio standards in North Carolina, in other jurisdictions having similar standards, or for purposes of meeting voluntary corporate environmental standards.

9. On October 21, 2021, NC DOA, through the State Clearinghouse, requested additional information on behalf of the Department of Cultural Resources regarding the Transmission Line. On July 6, 2022, NC DOA, through the State Clearinghouse concluded that no further State Clearinghouse review action on Macadamia's part was needed for compliance with the NCEPA for the Transmission Line.

10. On November 1, 2021, the NC DOA filed a letter indicating that the State Clearinghouse had reviewed the environmental impact information for the Facility under the provisions of the NCEPA and had determined that no further review action was necessary for compliance with the NCEPA.

11. The 6.53-mile 230 kV Transmission Line will allow interconnection of the proposed Facility to an existing substation owned by DENC.

12. The Transmission Line CECPCN Application meets the requirements of N.C.G.S. § 62-102.

13. The Applicant has carried its burden of proof under N.C.G.S. § 62-105(a) through substantial, competent evidence showing that:

- a) the proposed transmission line is necessary to satisfy the reasonable needs of the public for an adequate and reliable supply of electricity;
- b) when compared with reasonable alternative courses of action, construction of the transmission line in the proposed location is reasonable, preferred, and in the public interest;
- c) the costs associated with the proposed transmission line are reasonable;
- d) the impact that the proposed transmission line will have on the environment is justified considering the state of available technology, the nature and economics of the alternatives, and other material considerations; and
- e) the environmental compatibility, public convenience and necessity require the construction of the transmission line.

14. It is in the public interest, reasonable, and appropriate to grant the Transmission Line CECPCN.

15. Macadamia does not have an executed Interconnection Service Agreement (ISA). There are six shared Network Upgrades for the interconnection of the Facility to the PJM International (PJM) system for which Macadamia is allocated all or a portion of the costs. The allocated PJM Network Upgrade costs for Macadamia are \$71.5 million. Macadamia will not receive any reimbursement from ratepayers for the cost of those

upgrades. Macadamia calculates the LCOT based on the allocated cost of PJM Network Upgrades to be \$2.75/MWh.

16. Macadamia and other projects in the PJM AD1 cluster contribute to an overload on the DEP portion of the Everetts – Greenville 230 kV tie-line between DENC and DEP. During the pendency of this proceeding DEP made plans to rebuild the Everetts – Greenville 230 kV line for reliability reasons, due to the age and condition of the line. The cost of the incremental upgrades for the PJM AD1 cluster to allow interconnection of the AD1 projects is estimated at \$150,000. Under the agreement that Macadamia and the Public Staff reached, Macadamia is not seeking to expedite the work, and the Public Staff recommends that the Commission approve Macadamia's CPCN application subject to certain conditions. Sumac has entered an ASOA with DEP providing for the construction of the upgrades at an estimated cost of \$150,000. The ASOA provides that the Affected System Network Upgrades shall be funded by the customer (Sumac).

17. FERC must approve the ASOA for it to become effective because the provision forgoing reimbursement deviates from article 11.4 of DEP's pro forma Large Generator Interconnection Procedures (LGIA). According to Section 205 of the Federal Power Act, DEP must justify that deviation from the pro forma LGIA as just and reasonable. At this time, FERC has not approved nor disapproved the ASOA between Sumac and DEP.

18. The LCOT for the incremental Affected System Upgrades to allow interconnection of the AD1 cluster projects is \$0.05/MWh if one considers all projects in the AD1 cluster that benefit from the upgrades; if one considers only Macadamia, the LCOT is \$0.07/MWh.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 1-4

These findings of fact are essentially informational, procedural, and jurisdictional in nature and are not in dispute. These findings are supported by the Applications and the testimony of Macadamia witnesses Price, Robichaud, Corll, and Turnbull.

A copy of the Limited Liability Company Articles of Organization for Macadamia Solar, LLC filed with the State of North Carolina Department of the Secretary of State on April 15, 2015, was filed in the docket on August 30, 2021, as an exhibit to the Facility CPCN and Transmission Line CECPCN Applications.

An examination of the Applications and testimony and exhibits of Macadamia's witnesses confirms that the Applicant has complied with all filing requirements of the law and Commission rules associated with applying for a certificate to construct a merchant plant and a certificate to construct a Transmission Line in North Carolina.

State statutes require that the summary of a Transmission Line CECPCN application be published within 10 days of the filing of the application.¹ The Commission's orders of September 15, 2021, in Docket No. EMP-119, Sub 1 and of September 24 and October 14, 2021, in EMP-119, Subs 0 and 1 set out the requirements for publication of notices of both applications. The Applicant filed Affidavits of Publication demonstrating timely and adequate compliance with the requirements.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 5

The evidence supporting this finding of fact is in the Facility CPCN Application and the testimony of Macadamia witness Price. This finding is not disputed by any party.

Geenex Solar, LLC, a Delaware limited liability company with its principal place of business in Charlotte, North Carolina, owns Macadamia. Macadamia and Geenex Solar are wholly owned subsidiaries of Geenex Holding, LLC. Witness Price testifies that Macadamia is funding the development of the Facility through readily available funds and a credit facility provided by a specialty lender. Witness Price further states that Geenex Solar expects to sell Macadamia to EDF Renewables Development, Inc. (EDF), a subsidiary of EDF Renewables, Inc. Both EDF and EDF Renewables, Inc. are subsidiaries of EDF Renewables S.A., itself a 99.99%-owned indirect subsidiary of Electricite de France S.A. EDF builds projects on-balance sheet, some of which have capital costs exceeding \$500 million. Successful construction of EDF projects is not contingent on third party capital. Alternatively, Geenex Solar and a partner will obtain a short-term construction loan from a third-party lender such as a commercial bank. Witness Price states that during construction, Geenex Solar will work with its chosen partner to raise tax equity, additional cash equity, and long-term debt. Once the project becomes operational, Geenex Solar will replace the short-term construction loan with proceeds from long-term debt and tax equity.

Geenex Solar has been developing solar facilities in the southeastern U.S. since 2012 and has more than 50 solar PV facilities in various stages of development in North Carolina, Virginia, Kentucky, Ohio, and Indiana. It has an aggregate pipeline of more than seven gigawatts (GW) of additional projects in the United States, most of which interconnect with PJM.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 6-8

The evidence supporting these findings of fact is in the Applications, and particularly in Exhibits 2 and 3 to the Facility CPCN Application, the testimony of Macadamia witness Robichaud, and the testimony of Public Staff witness Lucas.

According to the Applications and the testimony of Macadamia witness Robichaud, the Facility will be located on approximately 5,543.6 acres of privately-owned land outside Plymouth in Washington County, North Carolina. Macadamia included a site map of the

¹ N.C.G.S. § 62-102(c).

proposed project area as an exhibit with the Facility CPCN Application and a map of the Transmission Line Corridor, with alternate routes marked, as an exhibit with the Transmission Line CECPCN Application.

The Transmission Line described in the Transmission Line CECPCN Application will interconnect the proposed Facility to the transmission grid via an existing 230 kV Trowbridge Substation operated by DENC. As Macadamia describes in its Applications, the Facility will include 34.5 kV underground collector cables that route to the Facility's Substation. The principal function of the Facility's Substation is to increase the voltage of the collector circuits from 34.5 kV to 230 kV. The proposed Transmission Line will connect the Facility Substation and transmit the electric output of the Facility to the DENC Trowbridge Station.

According to the CPCN Facility Application and the testimony of witness Robichaud, Macadamia has three positions in the PJM queue, with a total maximum facility output of 484 MW. Queue No. AD1-074 represents a total maximum facility output of 300 MW, AD1-075 represents 75 MW, and AD1-076 represents 109 MW. All three queue positions are behind the same point of interconnection (POI), and PJM has studied them as a single combined Facility.

The CPCN Facility Application, in describing the need for the proposed Facility, notes that Macadamia anticipates contracting for the sale of energy, capacity, and Renewable Energy Credits (RECs) through PJM. Geenex Solar has prior experience with its partners and investors in securing offtake in the PJM market and expects power purchase from the PJM market in the southeast United States to remain strong.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 9-10

The evidence supporting these findings of fact is in the Applications and the State Clearinghouse comments filed between October 21, 2021, and July 6, 2021.

Regarding the Facility, the NC DOA, through the State Clearinghouse, filed a letter in the docket on October 29, 2021, that included comments made in review of the Application by several North Carolina state agencies including various divisions of the Department of Environmental Quality, the Department of Agriculture, the Department of Public Safety, the Department of Transportation, and the Department of Natural and Cultural Resources. The NC DOA determined that because of the nature of the comments, no further State Clearinghouse review action on Macadamia's part was necessary for compliance with the NCEPA.

Regarding the Transmission Line, the NC DOA, through the State Clearinghouse, filed a letter in the docket on October 21, 2021, that included comments made in review of the Application by several North Carolina state agencies including various divisions of the Department of Environmental Quality, the Department of Public Safety, the Department of Transportation, and the Department of Natural and Cultural Resources. The letter indicated that the North Carolina Department of Cultural Resources had

requested additional information about the proposed Transmission Line. Specifically, the Department requested that the Applicant conduct an archaeological survey to identify any archaeological sites that may be destroyed by the construction. On July 6, 2022, the NC DOA, through the State Clearinghouse, filed a letter that included additional comments from the Department of Natural and Cultural Resources, State Historic Preservation Office, indicating that the Architectural Survey Report submitted by Macadamia had indicated that there are no historic above-ground properties within the Area of Potential Effects and that no historic buildings or structures will be affected by the line. The NC DOA determined that no further State Clearinghouse review action on Macadamia's part was necessary for compliance with the NCEPA.

Considering the foregoing, the Commission concludes that Macadamia has complied with the NCEPA and that the Act does not prohibit or impede issuance of either certificate of authority. However, the Commission notes that the Macadamia Facility is also subject to the North Carolina Department of Environmental Quality's (NCDEQ's) permitting requirements under N.C.G.S. §§ 143-215.115-125. The Facility and associated Transmission Line shall be constructed and operated only after Macadamia receives all necessary environmental or other permits and approvals, including any necessary permits under N.C.G.S. §§ 143-215.115-125.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 11-14

The evidence supporting these findings of fact is in the Transmission Line CECPCN Application and its attached Schedules and Exhibits, the testimony of Macadamia witnesses Corll, Price, Robichaud, and Turnbull, and the testimony of Public Staff witness Lucas. Further, Macadamia filed a detailed environmental report with the Transmission Line CECPCN Application. The environmental report satisfies the requirements of N.C.G.S. § 62-102 and Commission Rule R8-62.

Under N.C.G.S. § 62-101(a), only a public utility may obtain a certificate to construct a new transmission line, except an entity may obtain a certificate to construct a new transmission line solely for the purpose of providing interconnection of an electric generation facility. Because Macadamia is not a public utility, it may only obtain a CECPCN to provide interconnection to its generation facility. The CECPCN for Macadamia's proposed Transmission Line is conditioned on Macadamia's maintaining the CPCN for the proposed Facility.

The Commission concludes that the Applicant has complied with N.C.G.S. § 62-102(a) and Commission Rule R8-62 and has entered evidence and testimony into the record demonstrating that it has met its burden of proof for construction of the proposed Transmission Line under N.C.G.S. § 62-105.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 15-18

The evidence supporting these findings of fact is in the Facility CPCN Application, the testimonies of Macadamia witness Robichaud and Public Staff witnesses Lucas and

Lawrence, the August 15, 2022 letter Macadamia filed in the dockets, the September 2, 2022 letter that the Public Staff filed in Docket No. EMP-119, Sub 0, and the ASOA between Sumac and DEP that Macadamia filed in the docket on October 19, 2022.

N.C.G.S. § 62-110.1(a) provides that no generating facility may be constructed without first obtaining from the Commission a certificate that that public convenience and necessity requires, or will require, such construction. N.C.G.S. § 62-110.1(e) provides further that “no certificate shall be granted unless the Commission has approved the estimated construction costs and made a finding that the construction will be consistent with the Commission’s plan for expansion of electric generating capacity.” Commission Rule R8-63(b)(3) also requires a merchant plant application to include a description of the need for the facility in the “state and/or region.” This requirement is an outgrowth of the 1991 Empire Power Company case in Docket No. SP-91, Sub 0. In 2001, the Commission initiated a generic proceeding in Docket No. E-100, Sub 85, to consider changes in the certification requirements for merchant plants. As impetus for its Order, the Commission cited the Energy Policy Act of 1992, which encouraged independent power production and competition in the wholesale power market through the creation of exempt wholesale generators and the ability of the FERC to issue wheeling orders requiring utilities to allow access to their transmission grids for wholesale power transactions.² Further, the Commission cited FERC Order 2000 as “encouraging the formation of regional transmission organizations which would operate interconnected transmission systems, reduce the cost of transmitting power to more distant markets, and further enhance wholesale competition.”³ In the E-100, Sub 85, Order, the Commission ordered the Public Staff to file a proposal for certification requirements for merchant plants.⁴ In its proposal, the Public Staff recommended that the Commission address in its proceeding how the public convenience and necessity for an IPP would be demonstrated “when the facility is intended in whole or in part to serve:

...

- b. Load outside of North Carolina, on varying bases and for varying duration.”⁵

In its Order adopting the certification rule, the Commission stated:

It is the Commission’s intent to facilitate, and not to frustrate, merchant plant development. Given the present statutory framework, the Commission is not in a position to abandon any showing of need or to create a presumption

² Order Initiating Further Proceedings, *Investigation of Certification Requirements for New Generating Capacity in North Carolina*, No. E-100, Sub 85, at 3 (N.C.U.C. Feb. 7, 2001).

³ *Id.*

⁴ *Id.*

⁵ Public Staff’s Initial Comments, *Investigation of Certification Requirements for New Generating Facilities*, No. E-100, Sub 85, at 8 (N.C.U.C. Jan. 10, 2000).

of need. However, the Commission believes that a flexible standard for the showing of need is appropriate.

Order Adopting Rule, *Investigation of Certification Requirements for New Generating Facilities*, No. E-100, Sub 85, at 7 (N.C.U.C. May 21, 2001).

Although previously emphasized in the Order adopting the certification rule, the Commission emphasizes again that the analysis of whether the public convenience and necessity requires the construction of a specific merchant facility is flexible and, to this end, must focus on the facts and circumstances presented by the application and, additionally, must evolve as North Carolina's electric system evolves. Thus, while it remains the case that it is not the Commission's intent to frustrate merchant plant development, it also remains the Commission's obligation to determine whether granting an application for a CPCN is in the public interest.⁶

In fulfilling these obligations imposed by statute and rule, the Commission has determined, in the context of CPCN applications for merchant plant facilities, that "it is appropriate for the Commission to consider the total construction costs of a facility, including the cost to interconnect and to construct any necessary transmission Network Upgrades, when determining the public convenience and necessity of a proposed new generating facility."⁷

The Commission also has determined that "the use of the levelized cost of transmission (LCOT) provides a benchmark as to the reasonableness of the transmission Network Upgrade cost associated with interconnecting a proposed new generating facility."⁸

In explaining its analysis of these issues, the Commission has explained that "the very reason the CPCN statute was enacted was to stop the costly overexpansion of facilities to serve areas that did not need them"⁹ and has noted, based on policies established explicitly in N.C.G.S. § 62-2, that the "legislature intends the Commission to

⁶ See Order Granting Certificate, *Application of Rowan Generating Company, LLC, for a Certificate of Public Convenience and Necessity to Construct a Generating Facility in Rowan County, North Carolina*, No. EMP-3, Sub 0, at 8 (N.C.U.C. Oct. 12, 2001) (stating that the Commission is "mindful that issues regarding the appropriate amount of merchant plant generation in the State remain to be decided.").

⁷ See Order Denying Certificate of Public Convenience and Necessity for Merchant Plant Generating Facility, *In the Matter of Application of Friesian Holdings, LLC for a Certificate of Convenience and Necessity to Construct a 70-MW Solar Facility in Scotland County, North Carolina*, No. EMP-105 Sub 0, at 6 (N.C.U.C. June 11, 2020).

⁸ *Id.*

⁹ *Id.* at 17. See also *State ex rel. Utils. Comm'n v. High Rock Lake Ass'n*, 97 N.C. App. 138, 140-41, 245 S.E.2d 787, 790 (1978); *State ex rel. Utils. Comm'n v. Empire Power Co.*, 112 N.C. App. 265, 280, 435 S.E.2d 553, 561 (1993).

encourage cost-efficient siting of generation facilities, and thus that the Commission has the authority to consider all costs borne as a result of that siting decision.”¹⁰

In this instance, Macadamia provides a total cost for the construction of the Facility in a confidential exhibit to the Facility CPCN Application and a total cost for the construction of the Transmission Line in a confidential exhibit to the Transmission Line CECPCN Application. According to the second supplemental reply testimony of Macadamia witness Robichaud, the total cost of PJM Network Upgrades PJM assigns to Macadamia is \$71.5 million. In her second supplemental testimony, Macadamia witness Robichaud states that Macadamia expects to receive a Facilities Study Report, an Interconnection Services Agreement (ISA), and a Construction Service Agreement in December 2022. Macadamia expects those agreements to identify with more precision the cost and timing of the PJM Network Upgrades required for Macadamia but will not change the nature of those upgrades. Sixty days after receiving the ISA, Macadamia must provide security and execute the ISA to remain in the queue.

In its August 15, 2022 letter providing updates on a draft ASOA, Macadamia stated that DEP had decided to rebuild the Everetts – Greenville 230 kV line for reliability reasons due to the age and condition of the line. The incremental cost of using a larger conductor for that rebuild, as required to accommodate the interconnection of Macadamia and other AD1 projects (Sumac and Sweetleaf), as estimated in the Affected System Study, was \$350,000. At the time of the letter, Macadamia was negotiating an ASOA with DEP providing for the completion of the DEP Upgrade at an incremental cost of \$150,000. On October 19, 2022, Sumac, Sweetleaf, and Macadamia filed in their respective EMP dockets an ASOA between Sumac and DEP that provided for the construction of the upgrades for \$150,000.

Under the applicable regulatory paradigm, Macadamia will bear all costs associated with the interconnection of the Facility to the PJM system, including costs associated with the Transmission Line and with the Network Upgrades on the PJM system. Additionally, Macadamia will bear all costs associated with the construction of the generating Facility. The Applicant provides that the LCOT for the PJM Network Upgrades is \$2.75/MWh, a data point not contested by the Public Staff. Macadamia, rather than North Carolina ratepayers, will bear those costs.

Macadamia also provides the LCOT for the Affected Systems Costs in its August 15, 2022 letter. According to Macadamia’s calculations, the LCOT for the DEP Upgrade is \$0.05/MWh if one considers all projects in the AD1 cluster benefitting from the upgrade, and \$0.07/MWh if one considers only Macadamia. Even with uncertainty regarding the ultimate resolution of the question of reimbursement of Affected Systems Costs to an interconnection customer, the low LCOT for this upgrade weighs favorably in the Commission’s decision.

¹⁰ *Id.* at 17-18.

In its analysis of public convenience and necessity in the context of merchant generating facilities, the Commission has considered the long-term energy and capacity needs in the State and region, as well as system reliability concerns.

Based on the history of the ASOA process regarding the PJM AC1 cluster and the uncertainty of the outcome of pending litigation regarding the question of reimbursement for Affected System upgrades, the Commission is not persuaded that the issue regarding who bears DEP Affected System costs and what costs Macadamia may at some point have to bear, is resolved.

However, the Commission is persuaded by the evidence in the record that even if Macadamia were to bear the entirety of these costs, the LCOT for the Facility is not unreasonable and not significantly higher than the LCOT for facilities for which the Commission has granted a CPCN in the past.¹¹ In view of the total cost of the Facility, including the PJM Upgrades and the DEP Affected System costs, the Commission concludes that the siting of the Applicant's Facility in this area is not inconsistent with the Commission's obligation under N.C.G.S. § 62-110.1(d) for the provision of "reliable, efficient, and economical service" in the state.

The Commission notes that the Applicant has not executed a contract for the Facility's output as of the date of this Order. It has provided evidence through witness Robichaud's direct testimony regarding Geenex Solar's experience with solar power development and offtake in the PJM market and the long-term offtake prospects for renewable energy, renewable energy credits, and ancillary services generated by the Facility. The Commission has given some weight to evidence and testimony contemplating sale to an offtaker in PJM.

The Facility CPCN Application, particularly Exhibit 3, and testimonies of Macadamia witness Robichaud and Public Staff witness Lucas indicate that the Facility may help meet increases in peak energy requirements forecasted in Dominion's more recent Integrated Resource Plan, as well as contribute to meeting increases in peak load growth forecasted for PJM.

As noted in Exhibit 3 to the Facility CPCN Application, on May 1, 2020, Dominion filed a 15-year Integrated Resource Plan (IRP) which almost quadruples the amount of solar in its planned generation portfolio, from 440 MW in its 2019 IRP to 15,900 MW. At the time of the Application, Dominion had also issued a request for proposal soliciting bids for up to 1,000 MW of solar and onshore wind generation, consistent with Virginia state policy affirming the growing importance of renewable energy generation in passing the Grid Transformation and Security Act of 2018. Also, on March 6, 2020, the Virginia General

¹¹ See Order Issuing Certificate for Merchant Generating Facility, *Application of Oak Trail Solar, LLC, for a Certificate of Public Convenience and Necessity to Construct a 100 MW Solar Facility in Currituck County, North Carolina*, No. EMP-114, Sub 0 (N.C.U.C. Oct. 8, 2021) and Order Granting Certificates and Accepting Registration, *Application of Timbermill Wind, LLC, for a Certificate of Public Convenience and Necessity to Construct a Merchant Plan Wind Energy Facility in Chowan County, North Carolina, and Registration as a New Renewable Energy Facility*, No. EMP-118, Sub 0 (N.C.U.C. May 4, 2022).

Assembly passed Virginia SB 851, dramatically increasing the need for solar power facilities in Virginia by requiring Dominion and Appalachian Power Company to supply 30 percent of their power from renewable sources by 2030 and to close all carbon-emitting power plants by 2045 (Dominion) and 2050 (Appalachian). In Macadamia's view, these laws ensure a strong market for renewable resources in PJM territory for the lifetime of the proposed Facility.

Load for the PJM RTO as a whole, and more specifically for the Dominion power zone, which serves parts of Eastern North Carolina and Virginia, is expected to increase over the next ten to fifteen years for both winter and summer months. Summer peak load in PJM is expected to grow by 0.3% per year over the next ten years, and by 0.2% per year over the next fifteen years. For the Dominion zone, summer peak load is expected to grow by 0.9% per year over the next ten years.

Winter peak load growth in PJM is projected to average 0.3% per year over the next ten-year period, and 0.2% over the next 15 years. Winter peak load growth for the Dominion zone is expected to grow by 0.9% per year over the 10 years, and 0.9% per year over the next nine to fifteen years. The PJM service area of North Carolina has slightly higher projected load growth than Virginia, with an expected average of between 0.5% and 0.9% per year over the next 10 years versus the PJM RTO load growth projections to average between 0.3% summer peak and 0.2% winter peak over the next 10 years.

The Commission observes that the operating and performance characteristics of a solar facility will necessarily be different from those of other renewable resources such as wind generating facilities and will thus contribute to resource diversity and add balance to the generating resource portfolios of the regulated North Carolina utilities and/or those within the PJM region. The Commission considers resource diversity and portfolio balance to support the showing of public convenience and necessity in this case.

The Commission remains concerned that, under the current regulatory paradigm, DEP ratepayers might bear costs associated with generating facilities that are being constructed to meet the need or public policy mandate of off-system customers. The Commission is concerned that North Carolina retail customers are providing an improper subsidy to interconnection customers as well as to those to which the interconnect customer sells its output, which, put simply, is neither just nor reasonable. However, after having carefully considered and weighed the evidence of record in this proceeding, the Commission concludes that granting the Facility CPCN is in the public convenience and necessity.

At the Public Staff recommendation, the certificate will be conditioned in the manner described below to ensure that the Commission is notified of any future material revisions in the cost estimates for the interconnection facilities and Network Upgrades, including Network Upgrades on Affected Systems.

Additionally, for all the reasons explained in this Order and because it is necessary to connect the Facility to the electric system, and subject to the conditions imposed herein,

the construction of the Transmission Line is in the public interest and justified by the environmental compatibility, public convenience, and necessity as required by N.C.G.S. § 62-101 *et seq.*

IT IS, THEREFORE, ORDERED as follows:

1. That a CPCN is hereby granted to Macadamia Solar, LLC, for the construction of a solar energy facility of up to 484 MW to be located in Washington County, North Carolina, subject to the following conditions:

- (i) The Applicant shall construct and operate the Facility in strict accordance with applicable laws and regulations, including any local zoning and environmental permitting requirements;
- (ii) The CPCN shall be subject to Commission Rule R8-63(e) and all orders, rules, and regulations as are now or may hereafter by lawfully made by the Commission;
- (iii) The Applicant shall file with the Commission in this docket any significant revisions in the cost estimates for the construction of the Facility itself, interconnection facilities, Network Upgrades, or Affected System Upgrades, or any other significant change in costs, within 30 days of becoming aware of such revisions;
- (iv) If in the future the Applicant enters into an Affected System Operating Agreement for the construction of Affected System Upgrades, the Applicant shall file a copy of any Affected System Operating Agreement with the Commission at the same time such filing is made at the Federal Energy Regulatory Commission (at least 61 days before construction on the upgrades commences); and
- (v) If at any time the Applicant seeks reimbursement for any interconnection facilities, Network Upgrade Costs, Affected System costs, or other costs required to allow energization and operation of the Facility, the Applicant shall notify the Commission no later than 60 days before seeking reimbursement.

2. That a CECPCN is hereby granted to Macadamia for the construction of an approximately 6.53-mile 230 kV Transmission Line to allow interconnection of the Facility

to the existing 230 kV Trowbridge Substation operated by DENC. The Transmission Line CECPCN shall be effective so long as the Facility CPCN is effective.

ISSUED BY ORDER OF THE COMMISSION.

This the 5th day of January, 2023.

NORTH CAROLINA UTILITIES COMMISSION

A handwritten signature in black ink that reads "Tamika D. Conyers". The signature is written in a cursive style with a large, looping initial "T".

Tamika D. Conyers, Deputy Clerk

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. EMP-119, SUB 0

KNOW ALL PERSONS BY THESE PRESENTS THAT

MACADAMIA SOLAR LLC

1930 Abbott Street
Suite 402
Charlotte, NC 28203

is hereby issued this

CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY PURSUANT TO
N.C. GEN. STAT. § 62-110.1

For a 484 MW solar energy facility

located

on approximately 5,543.6 acres of privately held property in Washington County, North
Carolina,

subject to receipt of all federal and state permits as required by existing and
future regulations prior to beginning construction and further subject to all other orders,
rules, regulations, and conditions as are now or may hereafter be lawfully made by the
North Carolina Utilities Commission.

ISSUED BY ORDER OF THE COMMISSION.

This the 5th day of January, 2023.

NORTH CAROLINA UTILITIES COMMISSION

A handwritten signature in black ink, reading "Tamika D. Conyers". The signature is written in a cursive, flowing style.

Tamika D. Conyers, Deputy Clerk

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. EMP-119, SUB 1

KNOW ALL PERSONS BY THESE PRESENTS THAT

MACADAMIA SOLAR LLC

1930 Abbott Street
Suite 402
Charlotte, NC 28203

is hereby issued this

**CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC CONVENIENCE
AND NECESSITY PURSUANT TO N.C. GEN. STAT. § 62-102**

to construct approximately 6.53 miles of new 230 kV transmission line in Washington County, North Carolina, to allow interconnection of Macadamia Solar's solar energy facility to be constructed in Washington County to the existing Trowbridge Substation operated by Virginia Electric and Power Company, d/b/a Dominion Energy North Carolina

subject to receipt of all federal and state permits as required by existing and future regulations prior to beginning construction and further subject to all other orders, rules, regulations, and conditions as are now or may hereafter be lawfully made by the North Carolina Utilities Commission.

ISSUED BY ORDER OF THE COMMISSION.

This the 5th day of January, 2023.

NORTH CAROLINA UTILITIES COMMISSION



Tamika D. Conyers, Deputy Clerk