

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. EMP-110, SUB 0)
)
In the Matter of)
Application of Sumac Solar LLC for a)
Certificate of Public Convenience and)
Necessity to Construct an 80-MW)
Solar Facility in Bertie County, North)
Carolina)

DOCKET NO. EMP-111, SUB 0)
)
In the Matter of)
Application of Sweetleaf Solar LLC)
for a Certificate of Public)
Convenience and Necessity to)
Construct a 94-MW Solar Facility in)
Halifax County, North Carolina)

**PUBLIC STAFF’S MOTION
FOR LEAVE TO FILE
JOINT SUPPLEMENTAL
TESTIMONY**

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 484-MW Solar Facility in)
Washington County, North Carolina)

NOW COMES THE PUBLIC STAFF – North Carolina Utilities Commission,
by and through its Executive Director, Christopher J. Ayers, and respectfully seeks
leave to file the Joint Supplemental Testimony of Jay B. Lucas and Evan D.
Lawrence in the above-captioned dockets. In support thereof, the Public Staff
shows the following:

1. This matter relates to the requests for approval of Certificates of Public Convenience and Necessity (CPCNs) for solar photovoltaic facilities by Sumac Solar LLC (Sumac Solar), Sweetleaf Solar LLC (Sweetleaf Solar), and Macadamia Solar LLC (Macadamia Solar) (together the Applicants), and Macadamia Solar's request for approval of a Certificate of Environmental Compatibility and Public Convenience and Necessity (CECPCN), all of which are in the PJM AD1 cluster and triggered an affected system upgrade on the Greenville-Everetts transmission line in Duke Energy Progress, LLC (DEP) territory.

1. The Public Staff's most recent testimony in the Macadamia proceeding, filed June 29, 2022, recommended approval of the requested CPCN subject to certain conditions. Likewise, the Public Staff's most recent testimony in the Sumac and Sweetleaf proceedings, filed July 29, 2022, recommended approval of the requested CPCNs subject to certain conditions.

2. As discussed in the Public Staff's testimonies in these dockets, Sumac, Sweetleaf, and Macadamia are part of the PJM cluster AD1 and will affect DEP's Greenville-Everetts transmission line, necessitating affected system upgrades.

3. On August 12, 2022, witness Donna Robichaud filed supplemental reply testimony on behalf of Sumac and Sweetleaf. Her supplemental reply testimony stated that Macadamia is negotiating an Affected System Operating Agreement (ASOA) with DEP for the construction of the necessary upgrades to

the Greenville-Everetts transmission line at approximately \$150,000, and that Macadamia is seeking to expedite the upgrades at a cost of approximately \$1.6 million. She further stated that the final ASOA is not expected to provide for reimbursement of either the \$150,000, or the \$1.6 million in expediting fees to Macadamia.

4. On August 15, 2022, Macadamia filed a letter in EMP-119, Sub 0 explaining that, “Macadamia is in the process of negotiating an ASOA for construction of the [Greenville-Everetts transmission line upgrade], which would not provide for reimbursement of any affected system upgrade costs paid by Macadamia.”

5. The new information regarding Macadamia’s attempts to expedite the transmission line upgrades was first raised with the Public Staff through communications with the applicants on July 28, 2022. Later, through responses to discovery received from the applicants on August 24, 2022, and responses to discovery received from DEP on August 26, 2022, the Public Staff gained more information regarding these expediting fees.

6. The Public Staff believes that the potential for an ASOA between Macadamia and DEP containing fees for the expediting of affected system upgrades necessitates the revision of its recommendations in the Sumac, Sweetleaf, and Macadamia dockets.

7. In light of this recent development, the Public Staff believes it is necessary to file supplemental testimony revising its recommendations on the applications in these dockets.

WHEREFORE, the Public Staff respectfully requests that the Commission grant the Public Staff leave to file the joint supplemental testimony of Jay B. Lucas and Evan D. Lawrence.

Respectfully submitted this the 30th day of August 2022.

PUBLIC STAFF
Christopher J. Ayers
Executive Director

Lucy Edmondson
Chief Counsel

Electronically submitted
s/ Robert Josey
Staff Attorney

s/ Nadia Luhr
Staff Attorney

s/ William E. H. Creech
Staff Attorney

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CERTIFICATE OF SERVICE

I certify that a copy of this Motion has been served on all parties of record or their attorneys, or both, by United States mail, first class or better; by hand delivery; or by means of facsimile or electronic delivery upon agreement of the receiving party.

This the 30th day of August 2022.

Electronically submitted
/s/ Robert Josey
Staff Attorney

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. EMP-110, SUB 0

In the Matter of
Application of Sumac Solar LLC for)
a Certificate of Public Convenience)
and Necessity to Construct an 80-)
MW Solar Facility in Bertie County,)
North Carolina)

DOCKET NO. EMP-111, SUB 0)

In the Matter of)
Application of Sweetleaf Solar LLC)
for a Certificate of Public)
Convenience and Necessity to)
Construct a 94-MW Solar Facility in)
Halifax County, North Carolina)

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 484-MW Solar Facility)
in Washington County,)
North Carolina)

**JOINT SUPPLEMENTAL
TESTIMONY OF
JAY B. LUCAS AND
EVAN D. LAWRENCE
PUBLIC STAFF –
NORTH CAROLINA
UTILITIES COMMISSION**

1 **Q. MR. LUCAS, PLEASE STATE YOUR NAME AND ADDRESS.**

2 A. My name is Jay B. Lucas. My business address is 430 North Salisbury Street,
3 Raleigh, North Carolina.

4 **Q. WHAT IS YOUR POSITION WITH THE PUBLIC STAFF?**

5 A. I am the Manager of the Electric Section – Operations and Planning in the Public
6 Staff's Energy Division.

7 **Q. MR. LAWRENCE, PLEASE STATE YOUR NAME AND ADDRESS FOR THE
8 RECORD.**

9 A. My name is Evan D. Lawrence. My business address is 430 North Salisbury Street,
10 Raleigh, North Carolina.

11 **Q. WHAT IS YOUR POSITION WITH THE PUBLIC STAFF?**

12 A. I am an engineer with the Electric Section – Operations and Planning in the Public
13 Staff's Energy Division.

14 **Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL TESTIMONY?**

15 A. The purpose of our supplemental testimony is to present new information that has
16 become available since we last filed testimony in these three dockets and to make
17 recommendations to the North Carolina Utilities Commission (Commission) on the
18 applications filed for certificates of public convenience and necessity (CPCNs) for
19 construction of three solar photovoltaic generating facilities. The three applications

1 and date of latest Public Staff testimony in each docket are detailed in the table
2 below:

Docket No.	Applicant	Date of Latest Public Staff Testimony
EMP-110, Sub 0	Sumac Solar LLC (Sumac)	7-29-2022
EMP-111, Sub 0	Sweetleaf Solar LLC (Sweetleaf)	7-29-2022
EMP-119, Sub 0	Macadamia Solar, LLC (Macadamia)	6-29-2022

3 The three applicants listed above plan to build their facilities and interconnect to
4 transmission lines owned by Virginia Electric and Power Company, d/b/a Dominion
5 Energy North Carolina (DENC). Because DENC is part of PJM Interconnection,
6 L.L.C. (PJM), the Applicant is required to enter into an interconnection service
7 agreement with both DENC and PJM. The three facilities are part of PJM cluster
8 AD1 and are the only facilities in this cluster that will affect transmission owned by
9 Duke Energy Progress, LLC (DEP). On June 8, 2022, DEP released the second
10 revision of the affected system study report for cluster AD1, showing that the three
11 facilities will affect the Greenville-Everetts 230-kV transmission line. DEP plans to
12 replace this line due to its aging components at an expense of \$19.8 million, but
13 the replacement is not attributable to any generators interconnecting in PJM. DEP
14 originally estimated the cost of incrementally reconductoring its portion of this line
15 to accommodate the three facilities (DEP Upgrade) as \$350,000, but later reduced
16 this cost to \$150,000, as stated in a letter filed by Macadamia on August 15, 2022,
17 in Docket No. EMP119, Sub 0 (Macadamia's August 15 Letter).

1 Q. PLEASE EXPLAIN THE EVENTS THAT HAVE OCCURRED SINCE THE
2 PUBLIC STAFF FILED TESTIMONY ON THE DATES LISTED ABOVE.

3 A. On July 13, 2022, Macadamia witness Donna Robichaud filed second
4 supplemental testimony as allowed by the Commission's Order Scheduling
5 Hearing and the Filing of Testimony issued on June 4, 2022. This order also
6 scheduled a hearing for Macadamia to be held on September 6, 2022.

7 On August 5, 2022, the Commission issued its Order Accepting Testimony,
8 Requiring Further Testimony, and Scheduling Hearings (August 5 Order) for
9 Sumac and Sweetleaf. The August 5 Order accepted an earlier request by the
10 Public Staff to hold the hearings for Sumac and Sweetleaf immediately following
11 the previously scheduled hearing for Macadamia. The three dockets have
12 substantially similar witnesses and issues. The August 5 Order also allowed
13 Sumac and Sweetleaf to file supplemental reply testimony on or before August 12,
14 2022.

15 On August 12, 2022, the witness for Sumac and Sweetleaf, Donna Robichaud,
16 filed supplemental reply testimony on behalf of Sumac and Sweetleaf. Her
17 testimony discussed the revised affected system study completed on June 8, 2022,
18 the status of the affected system operating agreement (ASOA), negotiations with
19 DEP, an updated levelized cost of transmission (LCOT) calculation, and the
20 recommendation in the July 29, 2022, testimony of Public Staff witness Lawrence.

21 In Macadamia's August 15 Letter, it explained that, "Macadamia is in the process
22 of negotiating an ASOA for construction of the DEP Upgrade, which would not

1 provide for reimbursement of any affected system upgrade costs paid by
2 Macadamia.” DEP does not anticipate completing the DEP Upgrade until 2026 or
3 2027. However, Macadamia stated that it desires to have the DEP Upgrade
4 expedited and completed in 2025 to make the three facilities more economically
5 viable. DEP now estimates the incremental cost of the DEP Upgrade to be
6 \$150,000 and the cost of expediting it to be \$1,615,000. Macadamia further stated:

7 Given recent rulings from FERC on other affected system operating
8 agreements, representatives of Macadamia have also met with
9 FERC staff to discuss the nonreimbursability provisions of the draft
10 ASOA. Macadamia is optimistic that FERC will find an ASOA not
11 providing for reimbursement just and reasonable under the
12 circumstances.

13 **Q. PLEASE EXPLAIN FURTHER WHY THE APPLICANTS REQUESTED THAT**
14 **THE DEP UPGRADE BE EXPEDITED.**

15 A. A letter from the three applicants to the Public Staff, attached as **Joint**
16 **Confidential Exhibit 1**, dated July 28, 2022, stated in part:

17 **[BEGIN CONFIDENTIAL]**

18 
19
20
21

22 **[END CONFIDENTIAL]**

23 On August 18, 2022, the Public Staff sent Data Request No. 5 to Macadamia, and
24 Macadamia responded on August 24, 2022. This response is attached as **Joint**
25 **Confidential Exhibit 2**. The Public Staff asked how the recently passed Inflation
26 Reduction Act impacted the need to have the Macadamia facility operational in

1 2025. Macadamia's subsequent response [BEGIN CONFIDENTIAL] [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 [REDACTED]
6 [REDACTED] [END CONFIDENTIAL]

7 **Q. WHICH ENTITY WILL BE PAYING FOR THE AFFECTED SYSTEM UPGRADE**
8 **COSTS?**

9 A. At this time, Macadamia is seeking to negotiate an ASOA with DEP even though
10 the costs have been formally assigned to Sumac. As discussed above, the ASOA
11 that Macadamia is seeking to negotiate would not have a provision requiring that
12 DEP would have to reimburse Macadamia for affected system costs. Similarly,
13 Sumac has stated that it would not seek reimbursement of such costs. While the
14 Public Staff is unaware of any intentions to do so, Sweetleaf could also elect to
15 execute the ASOA, if it decided to do so.

16 **Q. MACADAMIA AND SUMAC HAVE STATED THAT THEY WOULD PAY FOR**
17 **THE DEP UPGRADE, INCLUDING THE FEE TO EXPEDITE, AND NOT SEEK**
18 **REIMBURSEMENT. DOES THE PUBLIC STAFF HAVE ANY CONCERNS?**

19 A. Yes. FERC must approve the ASOA for it to become effective because the
20 provision forgoing reimbursement deviates from article 11.4 of DEP's *pro forma*
21 Large Generator Interconnection Procedures (*pro forma* LGIA). Under Section 205
22 of the Federal Power Act, DEP must justify that the deviation from the *pro forma*

1 LGIA is just and reasonable.¹ If FERC rules here, as it did on the American Beech
2 ASOA, that the modification to the ASOA's reimbursement provision is not just and
3 reasonable, then DEP's ratepayers would ultimately pay for those upgrades.
4 Reimbursement from ratepayers in this situation would be especially problematic
5 because the additional fee to expedite the required work on the DEP system is not
6 necessary for any of the three facilities to interconnect.

7 **Q. WHAT ARE THE COMPONENTS OF DEP'S FEE TO EXPEDITE THE**
8 **UPGRADE?**

9 A. In response to a Public Staff data request, DEP explained its fee to expedite the
10 upgrade. The response is attached as **Joint Exhibit 3**.

11 **Q. WHAT IS THE PUBLIC STAFF'S POSITION ON THE FEE TO EXPEDITE THE**
12 **DEP UPGRADE?**

13 A. As evidenced in **Joint Confidential Exhibit 2**, the DEP Upgrade would be
14 expedited by one year in order to provide more cost certainty for the three facilities.
15 Expediting the DEP Upgrade is not necessary for the three facilities to
16 interconnect, and the extra fees for expediting the work should not be borne by
17 DEP's ratepayers.

¹ *Order Rejecting Affected System Operator Agreement*, 177 FERC ¶ 61,001, at P 32 (2021).

1 **Q. WHAT IS THE PUBLIC STAFF'S RECOMMENDATION?**

2 A. The Public Staff believes that the Commission should not issue CPCNs for the
3 three facilities until FERC has issued a decision on the ASOA. If any of the
4 applicants seek to expedite the DEP Upgrade and FERC rules that fee is
5 reimbursable by DEP's customers, the Commission should deny the CPCN(s).
6 However, if the applicants elect to not expedite the DEP Upgrade, or if FERC rules
7 that the fee to expedite the necessary work is not subject to reimbursement, the
8 Public Staff believes the Commission should grant the CPCNs, subject to the
9 conditions recommended in Public Staff witness Lawrence's Second
10 Supplemental Testimony and Lucas' Supplemental Testimony filed in the above-
11 captioned dockets.

12 **Q. DOES THIS CONCLUDE YOUR JOINT SUPPLEMENTAL TESTIMONY?**

13 A. Yes, it does.



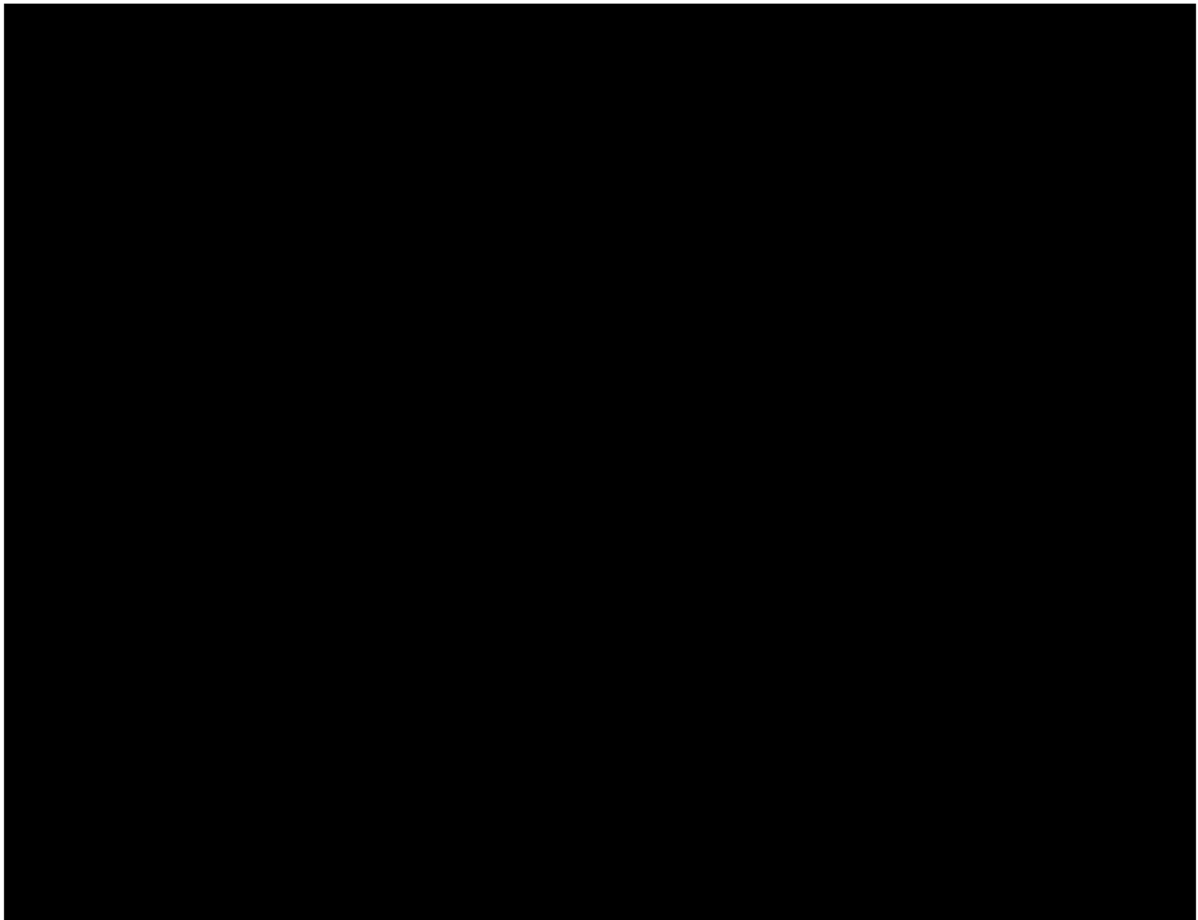
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July 28, 2022

Robert B. Josey
Public Staff
North Carolina Utilities Commission
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Raleigh, NC 27699-4300

****CONFIDENTIAL****

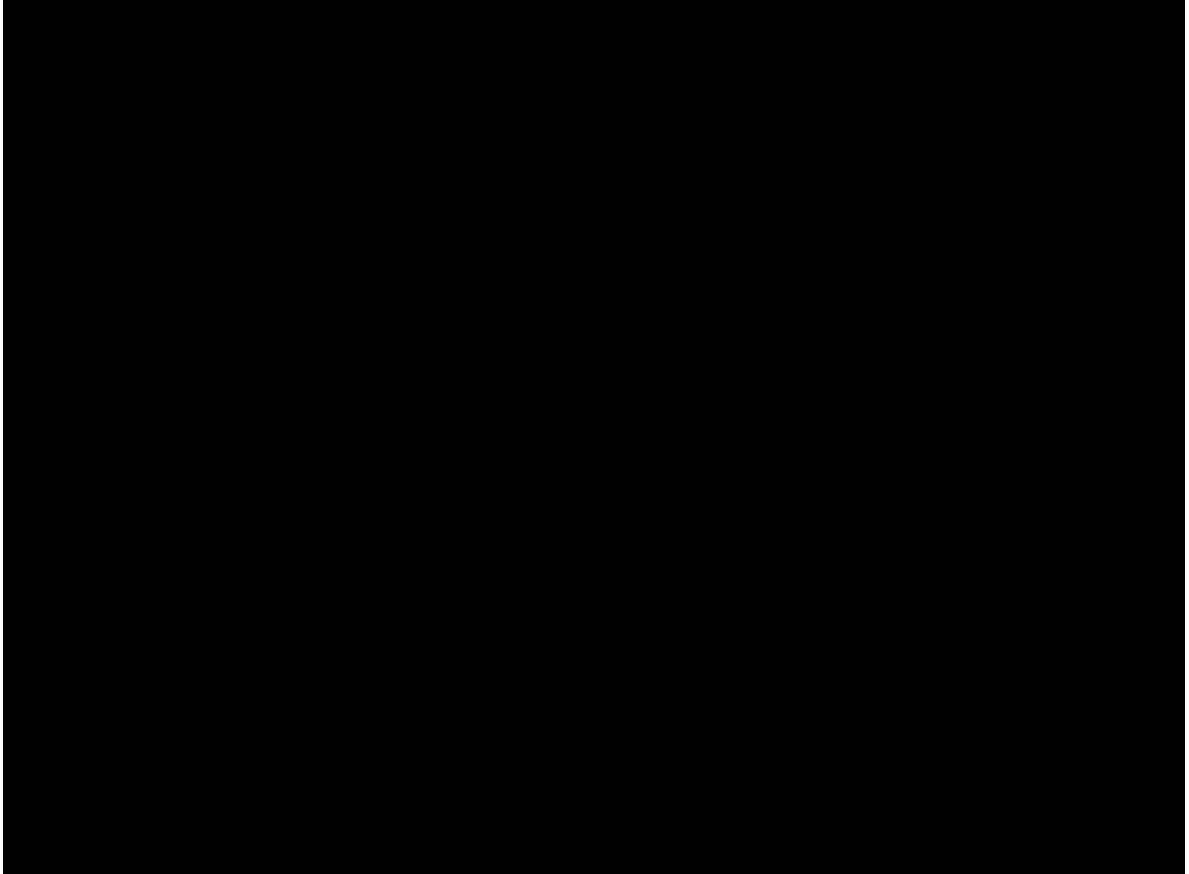


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Nevada New Jersey New York **North Carolina** Pennsylvania South Carolina Texas Washington



Mr. Robert B. Josey, Public Staff
Page Two
July 28, 2022



Sincerely,

A handwritten signature in blue ink that reads 'Benjamin L. Snowden'.

Benjamin L. Snowden

Copy to: Nadia L. Luhr
William E. H. Creech

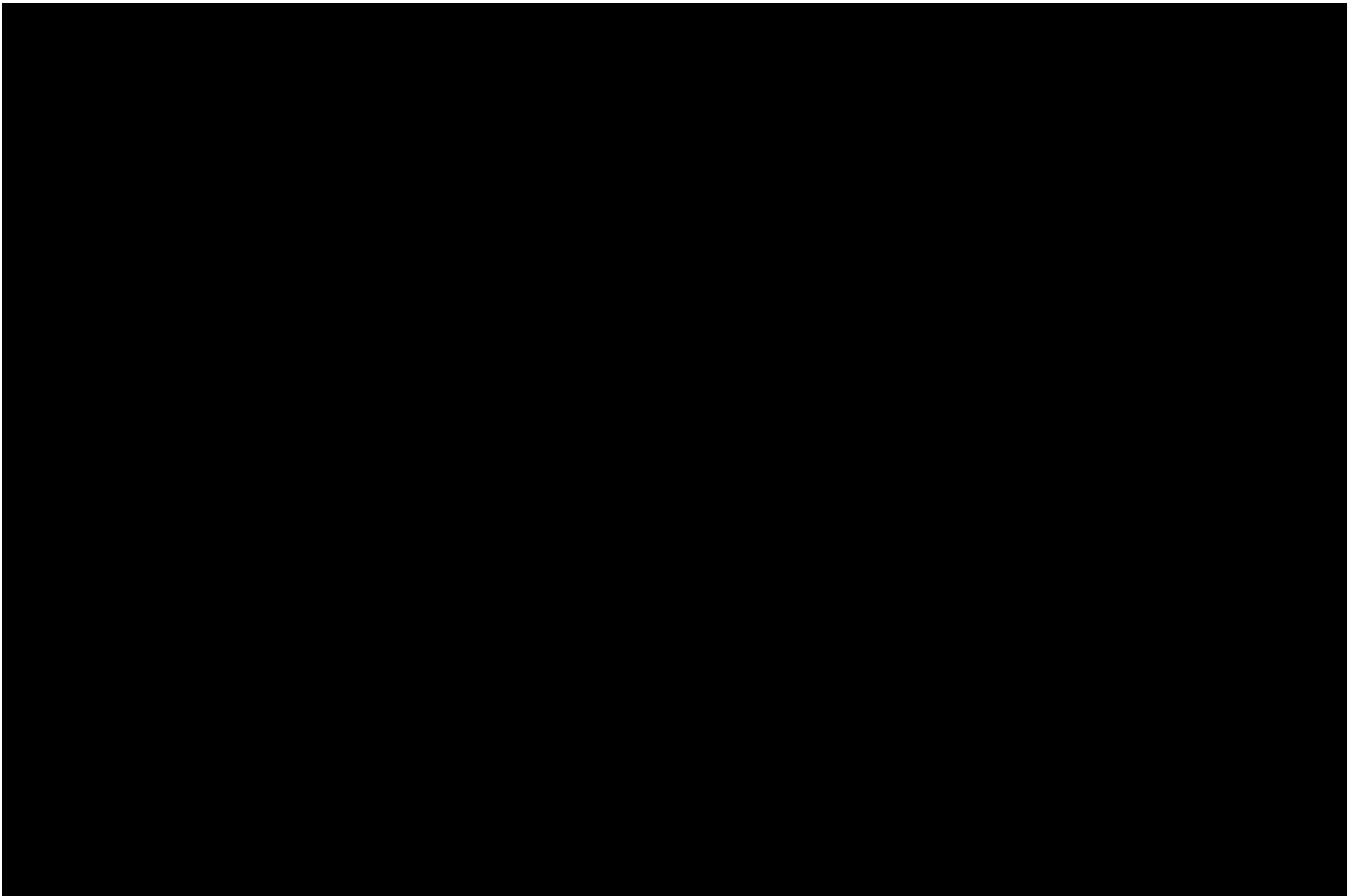
CONFIDENTIAL

Macadamia Solar, LLC
Docket No. EMP-119, Sub 0 and Sub 1
Public Staff Data Request No. 5
Date Sent: August 18, 2022
Response Date: August 24, 2022

Public Staff Legal Contacts:

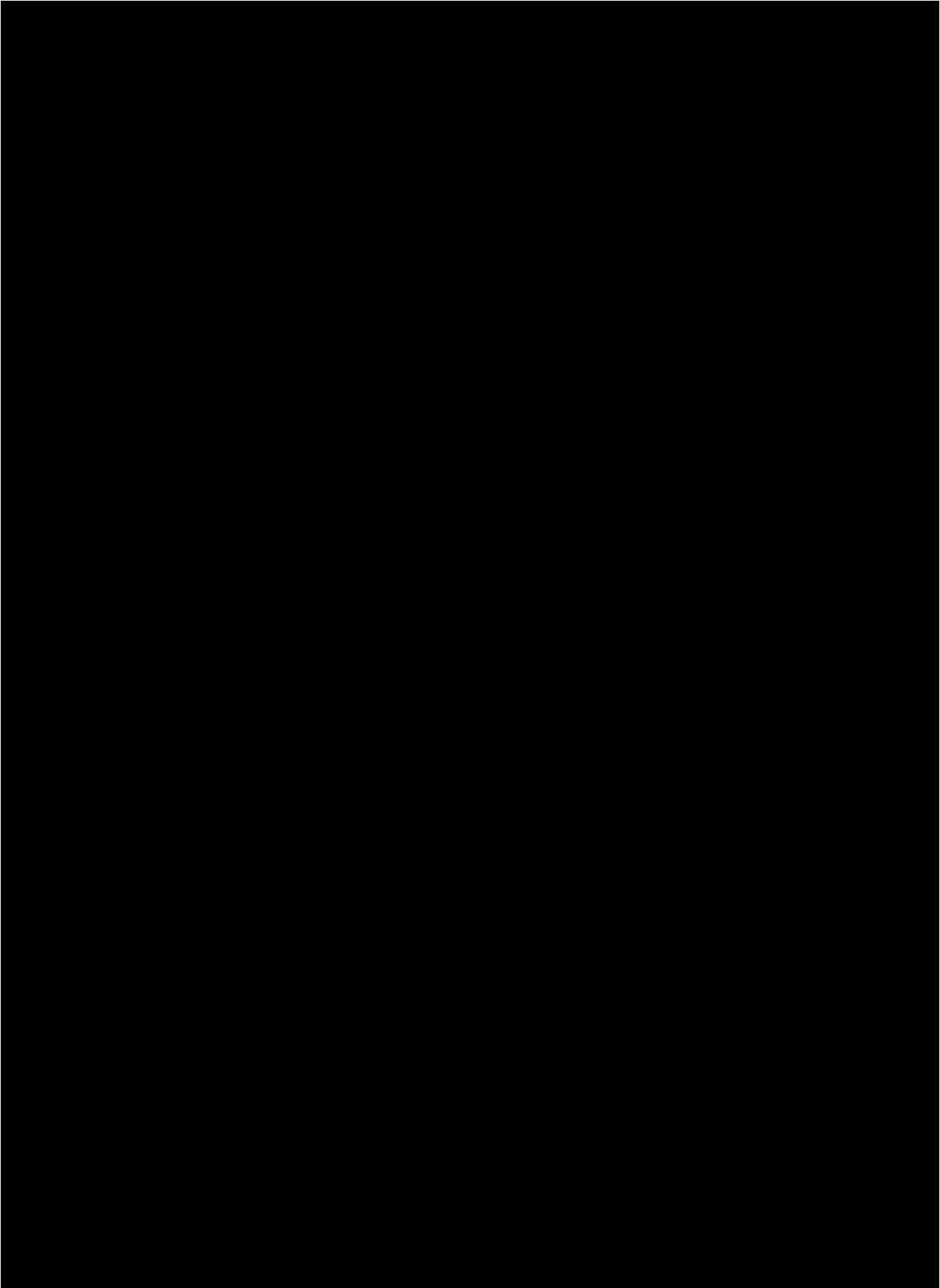
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Aug 30 2022

Duke Energy Progress, LLC Response
Macadamia Solar, LLC

Docket No. EMP-119, Sub 0
Public Staff Data Request No. 1 to Duke Energy Progress, LLC (DEP)
Date Sent: August 25, 2022
Requested Due Date: August 26, 2022

Public Staff Technical Contacts: Jay Lucas
Email: jay.lucas@psncuc.nc.gov

Evan Lawrence
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Phone #: (919) 733-0974
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Please provide any available responses electronically. If in Excel format, include all working formulas.

Topic: Calculation of the Expedited Construction Fee Requested by Macadamia Solar

1. Please provide the methodology for calculating the \$1.612 million Duke estimated it will cost to expedite the construction of the upgrades to the Greenville-Everetts transmission line needed to interconnect Macadamia Solar. Include an itemized list of the costs and any cost assumptions that went into the calculation.
 - A. Please provide the methodology for calculating the \$1.612 million Duke estimated it will cost to expedite the construction of the upgrades to the Greenville-Everetts transmission line needed to interconnect Macadamia Solar.**

Duke Energy Progress, LLC's Response: For background, DEP's current transmission asset management plan that will be included in the multi-year rate plan (to be filed in North Carolina in October 2022) includes a project to rebuild 12 towers and replace two sets of conductors that span 1.87 miles that are at end-of-life ("Upgrade Project");

- Greenville – Aurora 230 kV line
- Greenville – Everetts 230 kV line

The Upgrade Project is estimated to be completed in November 2026 (according to the original schedule without consideration of acceleration). In order to upgrade the double-circuit transmission line, DEP will need to acquire additional ROW, construct 12 new towers with new infrastructure that is parallel to the existing double-circuit transmission line. The estimated cost of the Upgrade Project is \$19.8 million.

Of the total estimated costs of \$19.8 million for the Upgrade Project, there are \$1.4 million of costs (engineering, environmental, and right of way acquisition work in 2023-2024) that are not being expedited because (a) this work falls within the same timeline as anticipated before the Macadamia Solar impact was known or assessed and (b) this work will be conducted on a timeline that is sufficient to meet Macadamia Solar's requested Commercial Operation Date. The details of these estimated costs of work that is not being expedited is included in the Excel spreadsheet entitled "List of Expediting Costs – Confidential" in Cells E19, E20, E23 and E24. Therefore, the resulting estimated costs of the project being expedited to accommodate Macadamia Solar is \$18.4 million (\$19.8M-\$1.4M).

In order to expedite the \$18.4 million project to accommodate Macadamia Solar's requested Commercial Operation Date, Duke used a Cost of Funds methodology to calculate the expediting costs needed to expedite the construction of the upgrades to the Greenville-Everetts transmission line needed to accommodate the interconnection of Macadamia Solar to Dominion's transmission system.

The key assumption in the Cost of Funds methodology is that Duke will not finance this project with cash on hand but will need to borrow money to finance the \$18.4 million project. In other words, the methodology calculates the cost of financing (or Cost of Funds, in finance terms) the \$18.4 million project. The steps used to calculate the costs to expedite this project are set forth below.

Calculations:

- Step 1: estimated cost of project is \$18.4 million
- Step 2: calculate number of months needed to expedite the project = 12 months
- Step 3: calculate cost of financing, meaning cost to borrow \$18.4 million now to pay for the project

Start with DEP's weighted average cost of capital which is 8.4%

Divide by 12 months to arrive at a monthly average cost of capital

Result is 0.7%

- Step 4: calculate the cost to expedite, by multiplying 0.7% by cost of project of \$18.4 million

Result is \$1.6 million = costs to expedite the project

B. Include an itemized list of the costs and any cost assumptions that went into the calculation.

Duke Energy Progress, LLC's Response:

Itemized List of Costs

The Upgrade Project: The itemized list of the costs for the Upgrade Project (\$19.8 million) is included in the Excel spreadsheet entitled "List of Expediting Costs – Confidential."¹ See Rows 1-14 and Rows 18-26 Column C of such spreadsheet. In Rows 1-14, Column B shows the individual project ID numbers that comprise the overall Upgrade Project, Column C shows the accounting model used for each project, Columns D-L show estimated spend by year (2022-2027), and Column M shows the total estimated costs per project ID number. Cell M14 shows the total estimated costs for the Upgrade Project.



List%20of%20Expediting%20Costs%20--

The Project to be Expedited: The itemized list of the costs for the Project to be Expedited (\$18.373 million) is included in the Excel spreadsheet entitled "List of Expediting Costs – Confidential." See Rows 19-25 of such spreadsheet. Column B of those rows shows the category of costs being estimated, Column D shows the categories of costs that are being expedited, and Column E identifies any categories of costs that are not being expedited to accommodate Macadamia Solar. Cell D26 shows the total estimated costs for the Project to be Expedited.

The Expediting Costs: The costs to expedite the Project to be Expedited (\$18.373 million) are estimated to be \$1.6 million and are contained in the Excel spreadsheet entitled "DEP-Macadamia ASOA – Cost Support for Expediting Costs." Column A shows the total estimated cost of the Upgrade Project, Column B shows the months needed to the expedite the project, Column C shows DEP's weighted average cost of capital on an annual basis, Column D shows DEP's weighted average cost of capital on a monthly basis, Column E

¹ Duke is seeking confidential treatment of this Excel spreadsheet because it contains labor rates, and loaders for such rates, which Duke considers to be confidential and proprietary. For these reasons, Duke seeks to share this information with NC Public Staff on a confidential basis and seeks all protections to maintain the confidentiality of such information.

shows the cost to of the expedited project each month, and Column F shows the total cost to expedite the project each month. Cell F15 shows the total estimated cost to expedite the Project to be Expedited.



DEP-Macadamia%2
OASOA%20--%20Cos

Cost Assumptions

Assumptions for Project to be Expedited (\$18.373 million):

- **Design & Project Management, Land, Materials, Construction, O&M:**
Rows 19-23:
 - each of these estimates of direct costs include costs of labor and materials
 - these estimates assume acceleration of work for only 1 year, accelerating completion by November 2026 to completion by December 2025
- **Materials:** Row 21: calculate material costs that account for rising inflation by increasing such costs by 3.5% year over year from 2022 to 2025 → calculated expected net present value of inflated costs in 2025 dollars
- **Loadings and AFUDC:** Row 24: this row contains calculations of AFUDC and loadings to calculate the full burdens of the costs in Rows 19-23, calculated according to cost modeling tool (Ecosys)
- **Contingency:** based on the risk ranking of this project according to Duke procedures applicable to projects with a total estimated cost of \$25 million or less, Duke applied a 20% contingency amount to this project

Assumptions for Expediting Costs (\$1.6 million):

- **Acceleration Period:** work would be accelerated for only 1 year (in-service date of Nov. 2026 would be expedited to Dec. 2025)
- **Cost of Funds:** use weighted average cost of capital rate of 8.44% for all years in which work would be performed
 - Weighted average cost of capital rate was the approved rate utilized in the most recent DEP rate case before the NCUC

- Monthly Compounding: assume Cost of Funds rate compounds monthly over the 12-month period (the period of time in which the project is being expedited)

* * * * *