



**NORTH CAROLINA  
PUBLIC STAFF  
UTILITIES COMMISSION**

May 5, 2023

Ms. A. Shonta Dunston, Chief Clerk  
North Carolina Utilities Commission  
4325 Mail Service Center  
Raleigh, North Carolina 27699-4300

**Re: Docket No. E-2, Sub 1311 – Application of Duke Energy Progress, LLC for a Certificate of Public Convenience and Necessity to Construct a 9.5 MW Solar Photovoltaic Generating Facility in Buncombe County, North Carolina**

Dear Ms. Dunston:

Attached for filing on behalf of the Public Staff in the above-referenced docket is the public version of the testimony of Jeff Thomas, Engineer with the Energy Division of the Public Staff – North Carolina Utilities Commission.

By copy of this letter, I am forwarding a copy of the redacted version to all parties of record by electronic delivery. Confidential information is located on pages 7 and 11-12 of the testimony. The confidential version will be provided to those parties that have entered into a confidentiality agreement.

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Ms. Shonta A. Dunston, Chief Clerk  
May 5, 2023  
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Sincerely,

Electronically submitted

/s/ Lucy E. Edmondson  
Chief Counsel

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/s/ Anne M. Keyworth  
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Attachments

**CERTIFICATE OF SERVICE**

I certify that a copy of this Testimony has been served on all parties of record or their attorneys, or both, in accordance with Commission Rule R1-39, 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 5th day May, 2023.

Electronically submitted  
/s/ Anne M. Keyworth  
Staff Attorney

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-2, SUB 1311

In the Matter of  
Application of Duke Energy Progress, )  
LLC, for a Certificate of Public )  
Convenience and Necessity to construct )  
a Solar Generating Facility in Buncombe )  
County, North Carolina )

**TESTIMONY OF  
JEFF THOMAS  
PUBLIC STAFF –  
NORTH CAROLINA  
UTILITIES COMMISSION**

**May 5, 2023**

1 **Q. Please state your name, business address, and present**  
2 **position.**

3 A. My name is Jeff Thomas. My business address is 430 North  
4 Salisbury Street, Dobbs Building, Raleigh, North Carolina. I am an  
5 engineer with the Energy Division of the Public Staff – North Carolina  
6 Utilities Commission.

7 **Q. Briefly state your qualifications and duties.**

8 A. My qualifications and duties are included in Appendix A.

9 **Q. What is the purpose of your testimony?**

10 A. The purpose of my testimony is to present to the Commission the  
11 Public Staff's analysis and recommendations on Duke Energy  
12 Progress, LLC's (DEP or the Company) Application for a Certificate  
13 of Public Convenience and Necessity (CPCN) for a proposed 9.5-  
14 megawatt (MW)<sup>1</sup> solar photovoltaic (PV) facility (the Asheville Facility  
15 or the Facility) in Buncombe County, North Carolina.

16 **Q. How is your testimony organized?**

17 A. My testimony first presents a summary of the application and exhibits  
18 (Application) as filed by DEP. I then present the results of the Public

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<sup>1</sup> All references to MW refer to nameplate alternating current (AC), unless otherwise stated.

1 Staff's investigation and conclude with recommendations to the  
2 Commission.

3 **Q. Please summarize your recommendations to the Commission.**

4 A. Based upon the Public Staff's investigation of the Application, review  
5 of the Commission's March 28, 2016 Order Granting Application in  
6 Part, with Conditions, and Denying Application in Part in Docket No.  
7 E-2, Sub 1089, concerning the Western Carolinas Modernization  
8 Project (WCMP Order);<sup>2</sup> the Commission's April 20, 2021 Order  
9 Issuing Certificate of Public Convenience and Necessity with  
10 Conditions in Docket No. E-2, Sub 1257, concerning DEP's  
11 proposed Woodfin Solar Facility (Woodfin Order); the Commission's  
12 December 30, 2022 Order Adopting Initial Carbon Plan and  
13 Providing Direction for Future Planning in Docket No. E-100, Sub 179  
14 (Carbon Plan Order); and review of DEP's recent WCMP updates,  
15 the Public Staff believes that the Asheville Facility is needed only  
16 insofar as the Commission continues to believe that the WCMP

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<sup>2</sup> In the WCMP Order, in response to DEP's plans to build up to 15 MW of solar generation at the Asheville Plant and a minimum of 5 MW of utility-scale storage in the DEP-West region, the Commission stated that:

The Commission commends the work that DEP has begun in engaging Asheville community leaders to work collaboratively on load reduction measures. The Commission shall require DEP to continue to update it on these efforts, along with its efforts to site solar and storage in the western region. As to solar and storage, the Commission expects DEP to file as soon as practicable the CPCN to construct at least 15 MW of solar at the Asheville Plant or in the Asheville region. The Commission further urges DEP to move forward in a timely manner with the 5 MW storage project in the Asheville region.

WCMP Order at 38.

1 Order is dispositive in the determination of need.<sup>3</sup> The Facility is  
2 significantly more expensive than solar facilities located elsewhere  
3 in DEP's system, particularly in DEP-East, and the Public Staff has  
4 concerns that the capital for this Facility and DEP's interconnection  
5 resources could be more effectively allocated elsewhere to meet the  
6 carbon reduction requirements of S.L. 2021-165, Section 5 (HB 951)  
7 at least cost.

8 If the Commission believes the WCMP alone is sufficient to support  
9 the need for this Facility, the Public Staff recommends approval of  
10 the CPCN. If the Commission no longer believes the WCMP is  
11 sufficient to support the need for the Facility, then the Public Staff  
12 recommends the Commission deny the CPCN and direct DEP to  
13 remove the Facility from the Carbon Plan baseline and competitively  
14 procure the shortfall, potentially in DEP-East, and to wheel the power  
15 to DEP-West if necessary.

16 **I. CPCN APPLICATION**

17 **Q. Please describe the CPCN Application.**

18 A. DEP filed its Application in this docket on January 23, 2023, pursuant  
19 to N.C. Gen. Stat. § 62-110.1 and Commission Rule R8-61,  
20 requesting Commission authorization to construct the Facility. The

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<sup>3</sup> In Commissioner Clodfelter's concurrence, he found the WCMP to be "dispositive, though only just barely so." See Woodfin Order at 18.

1 Application is supported by the testimony and exhibits of DEP  
2 witness Justin LaRoche.

3 **Q. Did the Public Staff find the Application, as initially filed, to be**  
4 **complete?**

5 A. No, the Application that was filed on January 23, 2023, was not  
6 complete. The Application provided information satisfying most of the  
7 requirements of N.C.G.S. § 62-110.1 and Commission Rule R8-61.  
8 However, Commission Rule R8-61(b)(4)(iv) requires a description of  
9 risk factors related to construction and operation of the Facility and a  
10 verified statement as to whether the facility will be capable of  
11 operating in the lowest temperature that has been recorded in the  
12 area. This information was omitted from the Application.

13 The Company agreed with the Public Staff that this information was  
14 omitted and provided the missing information in a supplemental filing  
15 on April 26, 2023. With this new information, the Public Staff finds  
16 the Application complete.

17 In addition, on March 24, 2023, the State Clearinghouse filed  
18 comments indicating that no further State Clearinghouse review  
19 action is needed for compliance with the North Carolina  
20 Environmental Policy Act.



1 **Q. Please describe the proposed Facility.**

2 A. DEP proposes to build a 9.5 MW AC / 12.8 MW DC fixed-tilt solar PV  
3 generation facility on DEP-owned land at the site of the  
4 decommissioned Asheville coal-fired generation facility, with 40% to  
5 60% of the Facility to be located on closed coal ash landfills. The  
6 Facility would be located adjacent to the currently operating Asheville  
7 natural-gas-fired combined cycle (CC) plant, and DEP has estimated  
8 that the Facility will come online in September 2025. The current  
9 design does not require ballasted racking as was used at the facility  
10 approved in the Woodfin Order (Woodfin Facility); however, the  
11 portion located on the coal ash landfill area will require a novel  
12 mounting technology that will be integrated with the closure turf  
13 covering. DEP estimates that the facility will produce approximately  
14 19,575 megawatt-hours (MWh) in its first year, reflecting a capacity  
15 factor of 23.5%.<sup>4</sup> DEP proposes to interconnect the Facility to its  
16 transmission system through the existing transmission switching  
17 station on site, requiring no additional land rights or permitting to  
18 install the interconnection facilities.

19 **Q. What is the estimated cost of the Facility?**

20 A. DEP estimates that the project capital cost will be approximately  
21 \$24.3 million and has estimated the NC retail in-service cost of

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<sup>4</sup> These figures differ slightly from the figures contained in the Application due to minor errors discovered by DEP during the discovery process.

1 approximately \$15.2 million, utilizing a production plant allocation  
2 factor of 62.56%. This equates to a system capital cost of \$2,468 per  
3 kW AC, excluding \$854,000 of Allowance for Funds Used During  
4 Construction (AFUDC). DEP estimates annual non-capital costs  
5 (including operating costs, property taxes, and insurance) to be  
6 **[BEGIN CONFIDENTIAL]** [REDACTED]  
7 [REDACTED] **[END CONFIDENTIAL]**. Average  
8 operational expenses over the life of the project are estimated to be  
9 **[BEGIN CONFIDENTIAL]** [REDACTED] **[END**  
10 **CONFIDENTIAL]**.

11 DEP estimates that customer rates in the first year of operation will  
12 increase by 0.02% due to the Facility. The Asheville Facility is  
13 included in rate year two of DEP's proposed Multi-Year Rate Plan  
14 (MYRP) in Docket No. E-2, Sub 1300, with an in-service date of  
15 September 2025; so whether the Facility is completed or not, its cost  
16 will be included in DEP's rates beginning in October 2024, assuming  
17 approval of DEP's proposed MYRP.<sup>5</sup>

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<sup>5</sup> In DEP's proposed MYRP, the Public Staff recommended that the in-service date of the Asheville Facility be delayed until March 2026, putting the project in rate year three – meaning that DEP ratepayers would not see the project reflected in rates until October 2025. See testimony of Public Staff witness Jeff Thomas, filed on March 27, 2023, at 16. Further, the Agreement and Stipulation of Partial Settlement between DEP and the Public Staff, filed April 26, 2023, adopts witness Thomas' recommended in-service date of March 2026, at 10.

1 **Q. How does DEP demonstrate the need for the Facility?**

2 A. DEP describes the Facility as a “key component” of the WCMP and  
3 states that it presents a unique opportunity to work with the local  
4 community as a result of the WCMP Order. DEP states that the  
5 Facility and the Hot Springs microgrid<sup>6</sup> help meet its commitment to  
6 construct at least 15 MW of solar generation in the Asheville region.  
7 The 2 MW Hot Springs Microgrid, the 5 MW Woodfin Facility,<sup>7</sup> and  
8 the 10 kW Mount Sterling microgrid represent approximately 7.01  
9 MW of solar capacity in the region; the Asheville Facility would bring  
10 that total to 16.51 MW.

11 In addition, DEP states that the Facility is consistent with the public  
12 policies of North Carolina, specifically those enumerated in S.L.  
13 2007-397 (Senate Bill 3) and will contribute to achieving the carbon  
14 reduction targets established by HB 951. DEP also states that the  
15 facility is consistent with the Company’s 2020 Integrated Resource  
16 Plan (IRP), which included an update on the WCMP that referenced  
17 the Asheville Facility and co-located energy storage with an  
18 anticipated in-service date of 2024.<sup>8</sup> The Company further states that

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<sup>6</sup> Approved in Docket No. E-2, Sub 1185, consisting of a 2 MW solar PV facility and a 4.4 MW battery.

<sup>7</sup> The Woodfin Facility is expected to come online in September 2023.

<sup>8</sup> See DEP’s 2020 IRP, filed in Docket No. E-2 Sub 165, at 383.

1 the Asheville Facility was included as “baseline solar generation” in  
2 its 2022 proposed Carbon Plan.

3 **II. Public Staff’s Investigation**

4 **Q. Does the Public Staff find DEP’s statement of need to be**  
5 **satisfactory?**

6 A. No. Consistent with the Public Staff’s position in the Woodfin docket,  
7 the Public Staff believes that DEP’s sole reliance upon the WCMP  
8 Order is inadequate for justifying the Facility as proposed. In addition,  
9 given the high cost of the Facility, the Public Staff has concerns about  
10 the necessity of locating this project in DEP-West territory. The  
11 Public Staff continues, in this docket, to have many of the same  
12 concerns expressed by the Public Staff in the Woodfin docket.<sup>9</sup>  
13 However, the Commission’s Woodfin Order gave dispositive weight  
14 to the WCMP and approved that project, in part, due to the Woodfin  
15 Facility’s consistency with the expectation contained in the WCMP  
16 Order that 15 MW of solar would be built in the region.<sup>10</sup>

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<sup>9</sup> See the Direct Testimony of Public Staff witness Thomas in Docket No. E-2, Sub 1257.

<sup>10</sup> Woodfin Order at 9.

1 **Q. Is it the Public Staff's position that new solar generation is not**  
2 **needed in DEP's service territories?**

3 A. No. In fact, the Public Staff supported the procurement of thousands  
4 of MW of solar and solar plus storage capacity in the Carbon Plan  
5 proceedings and has been working diligently with DEP and Duke  
6 Energy Carolinas, LLC (DEC and, together with DEP, Duke or the  
7 Companies), to successfully design and implement renewable  
8 energy competitive procurements to achieve the emission reduction  
9 targets, at least cost, compliant with the Carbon Plan Order. The  
10 Companies need a significant amount of solar energy to meet the  
11 carbon reduction requirements of HB 951; however, this legislation  
12 requires that it be acquired in a least-cost manner. Less expensive  
13 options are available to the Company than this proposed facility.

14 **Q. What are the Public Staff's primary concerns with the Asheville**  
15 **Facility?**

16 A. The Public Staff is concerned about the high cost of the facility. In  
17 addition, power flows into DEP-West have steeply declined since the  
18 Asheville CC Plant came online, particularly during daylight hours  
19 when solar in DEP-East is overproducing and must be exported or  
20 curtailed. In short, the Public Staff is not convinced that the Facility  
21 is needed in DEP-West, nor that ratepayers would benefit from solar  
22 energy at such a cost premium.

- 1 **Q. Please elaborate on the cost premium associated with the**  
2 **Facility.**
- 3 A. The Public Staff believes that DEP could build a larger facility in DEP-  
4 East for the same cost as the Asheville Facility, which is estimated  
5 to cost approximately \$2,500 per kW and has a levelized cost of  
6 energy (LCOE) of **[BEGIN CONFIDENTIAL]** [REDACTED] **[END**  
7 **CONFIDENTIAL]** over its 35-year life. In contrast, the 2026 Solar  
8 Investment project in DEP's MYRP, which is an 82 MW winning  
9 project from the 2022 Solar Procurement<sup>11</sup> located in DEP-East and  
10 anticipated to come online in September 2025, is expected to cost  
11 \$1,694 per kW<sup>12</sup> with an approximate LCOE of **[BEGIN**  
12 **CONFIDENTIAL]** [REDACTED] **[END CONFIDENTIAL]** over its 35-  
13 year life. Absent the WCMP Order, DEP would likely procure solar  
14 capacity in its eastern region at a significant discount to the Asheville  
15 Facility.

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<sup>11</sup> See Supplemental Testimony of DEP witness LaRoche, filed on February 13, 2023, in Docket No. E-2, Sub 1300, at 4.

<sup>12</sup> See Supplemental Exhibit 1 to DEP witness LaRoche's Supplemental Testimony, filed on February 13, 2023, in Docket No. E-2, Sub 1300. The 2026 Solar Investment project in line 1 is \$135.6 million for 80 MW, which equates to \$1,694 per kW.

1 **Q. How does the LCOE of the Asheville Facility compare to the**  
2 **Solar Reference Cost used in the 2022 Solar Procurement**  
3 **process?**

4 A. The Solar Reference Cost is used to evaluate whether the  
5 Companies should procure more or less than the 1,200 MW target in  
6 the 2022 Solar Procurement. If the average bid price is less than the  
7 Solar Reference Cost, additional capacity will be procured, and vice  
8 versa. The cost is calculated based on a solar facility coming online  
9 in 2026, includes the impact of the Inflation Reduction Act, and  
10 includes transmission system impacts.

11 The Solar Reference Cost for a utility-owned asset is **[BEGIN**  
12 **CONFIDENTIAL]** [REDACTED]  
13 [REDACTED] **[END CONFIDENTIAL]**.

14 **Q. How does the LCOE of the Asheville Facility compare to the**  
15 **Company's avoided costs?**

16 A. The Company provided its forecasted 25-year avoided cost rate to  
17 evaluate potential Competitive Procurement of Renewable Energy  
18 (CPRE) projects selected through the 2022 Solar Procurement

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<sup>13</sup> See Attachment A to the Notice of Correction to Preliminary Carbon Plan Solar Reference Cost, filed on June 22, 2022, in Docket Nos. E-2, Sub 1297, and E-7, Sub 1268.

1 process. For DEP, this rate for transmission-connected solar is  
 2 \$62.86 per MWh.<sup>14</sup>

3 **Q. How does the cost of the Asheville Facility compare to similar**  
 4 **projects in other regions?**

5 A. The Public Staff reviewed the 2022 Lawrence Berkeley National  
 6 Laboratory (LBNL) Utility-Scale Solar report (LBNL Report), which  
 7 provides a detailed list of projects completed across the country for  
 8 benchmarking.<sup>15</sup> The report provides data on the cost of solar  
 9 projects on a national and regional scale, as well as broken out by  
 10 factors such as system size and technology. The Public Staff  
 11 compared the Asheville Facility cost to two key metrics: (1) the  
 12 installed cost of solar between 5-20 MW; and (2) the installed price  
 13 in the Southeast (non-ISO) region. The capital cost of the Asheville  
 14 Facility is 49% greater than the capital cost of projects between 5  
 15 and 20 MW that were installed in 2021, and 98% greater than  
 16 projects in the southeast region that were installed in 2021.

17 *Table 1: Comparison of capital costs (\$ per kW). LBNL values, which are provided in 2021*  
 18 *dollars, have been adjusted to 2022 dollars.*

| Asheville<br>(excluding<br>AFUDC) | LBNL Report: 2021<br>Projects between 5-20<br>MW | LBNL Report: 2021<br>Projects in the<br>Southeast |
|-----------------------------------|--|---|
| \$ 2,468                          | \$ 1,653   | \$ 1,245  |

<sup>14</sup> See DEC's and DEP's 2022 SP Additional CPRE Program Avoided Cost Cap, filed on December 15, 2022, in Docket No. E-2, Sub 1159.

<sup>15</sup> Bolinger, Mark, Joachim Seel, Cody Warner, and Dana Robson. Utility-Scale Solar Data Update: 2022 Edition. Accessible at: <https://emp.lbl.gov/utility-scale-solar>.



1 **Q. How does the cost of the Facility impact the LCOE of the entire**  
2 **WCMP portfolio of projects?**

3 A. During the Woodfin evidentiary hearing, Commissioner Clodfelter  
4 posed a series of questions asking whether the cost of that facility –  
5 which the Public Staff also found to be excessive – would push the  
6 overall WCMP project portfolio above avoided cost. A high-level  
7 analysis of the LCOE of the entire WCMP portfolio suggests that the  
8 impact of the Asheville Facility is minor and that the entire WCMP  
9 portfolio of solar and storage projects, inclusive of the Asheville CC,  
10 is likely below the Company's most recent estimate of its 25-year  
11 avoided costs, with or without the Asheville Facility.

12 **Q. Are there any benefits associated with locating the Facility at**  
13 **the proposed location?**

14 A. Yes. Locating the Facility at the site of the retired Asheville coal  
15 generation facility qualifies the facility for increased tax benefits  
16 associated with the Inflation Reduction Act.<sup>16</sup> This classification as  
17 an energy community qualifies the facility for a 10% increase to the  
18 production tax credit; assuming that the prevailing wage and  
19 apprenticeship standards are met, the Asheville Facility may qualify

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<sup>16</sup> According to guidance released on April 4, 2023, in Notice 2023-29 by the United States Internal Revenue Service, Buncombe County qualifies as an "energy community" due to its retired coal generation facility. A full list of eligible counties can be found in Appendix C to Notice 2023-29, accessible at: <https://www.irs.gov/newsroom/irs-issues-guidance-on-eligibility-requirement-for-energy-communities-for-the-bonus-credit-program-under-the-inflation-reduction-act>.

1 for a production tax credit of approximately \$30 per MWh for the first  
2 10 years of operation. The Public Staff's calculation of the Facility's  
3 LCOE already includes the impact of this tax credit and the energy  
4 community status.

5 The Facility's utilization of the existing transmission interconnection  
6 facilities also provides certain benefits, as described previously.  
7 These interconnection facilities will be shared with the Lake Julian  
8 battery storage project, which will be described in more detail below.  
9 While locating a generation facility at the site of a retired fossil  
10 generation facility can, in some situations, allow for expedited  
11 interconnection study requests through a surplus interconnection  
12 request<sup>17</sup> or a generation replacement request,<sup>18</sup> it does not appear  
13 that DEP utilized these processes to study the Asheville Facility.

14 **Q. What is the need for energy and capacity in DEP-West?**

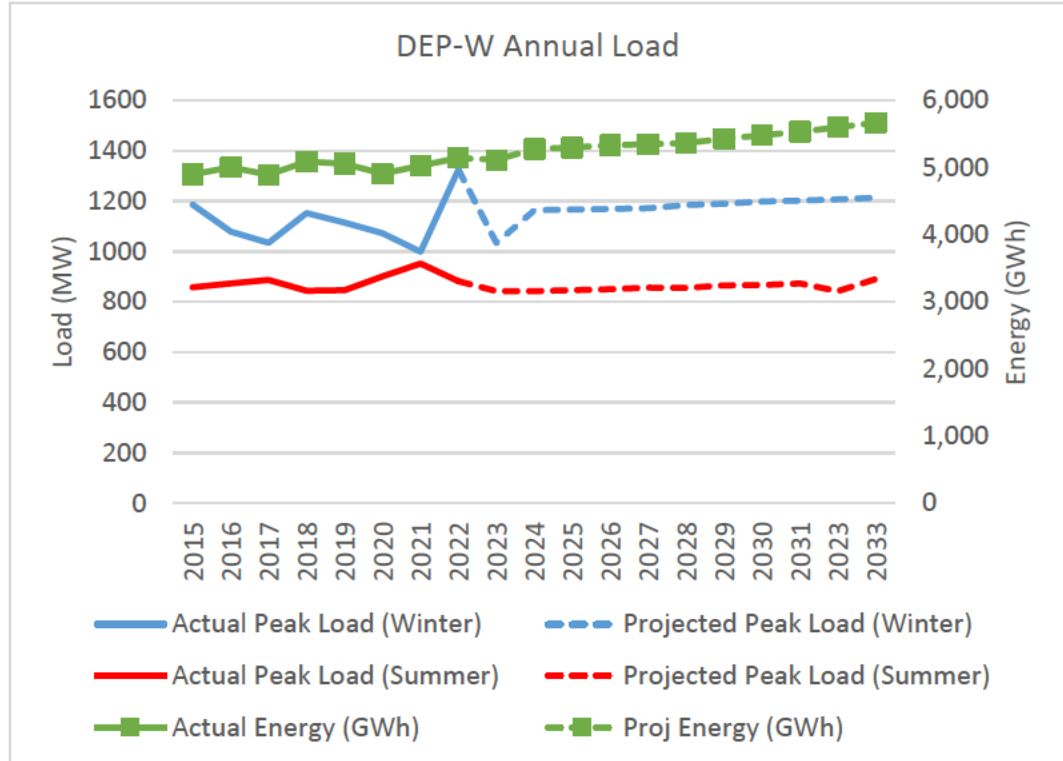
15 A. Figure 1 below shows historical and projected peak loads and energy  
16 demand over the period 2015 to 2031 for DEP-West. There is clearly  
17 a trend of increasing peaks and energy consumption over time.  
18 Historically, the winter peak load has been approximately 28% higher  
19 than the summer peak load, and over the next ten years, that spread

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<sup>17</sup> Defined in section 4.3 of Duke Energy's Large Generator Interconnection Procedures.

<sup>18</sup> Defined in section 4.9 of Duke Energy's Large Generator Interconnection Procedures.

1 is expected to increase to 35%, indicating a greater need for  
2 resources that can meet the winter peak in the early morning hours.



3

Figure 1: DEP-West Peak Load and Energy Consumption

4

5 To put this growth in perspective, I compared the growth projections  
6 in DEP-West to the DEP region as a whole. Generally, DEP-West is  
7 growing faster, as shown in Table 2 below. DEP-West's projected  
8 winter and summer peak loads are projected to grow faster than  
9 DEP, as well as projected total energy consumption. DEP-West's  
10 projected winter peak load is projected to grow at four times the rate  
11 of all of DEP, while the summer peak load growth is similar in both  
12 regions.

1  
2

Table 2: Comparison of historic and projected Compound Annual Growth Rates (CAGR) for peak load and energy consumption.

|  | DEP-W | DEP   |
|--|-------|-------|
| Historic Peak Load (2016 -2021)            | -1.5% | -2.3% |
| Projected Winter Peak Load (2023 - 2033)   | 1.6%  | 0.4%  |
| Projected Summer Peak Load (2023 - 2033)   | 0.6%  | 0.6%  |
| Historic Energy Consumption (2016-2021)    | 0.1%  | -0.7% |
| Projected Energy Consumption (2023 - 2033) | 1.0%  | 0.4%  |

- 3 **Q. Is the Facility paired with energy storage to meet winter peak**  
4 **demand?**
- 5 A. Yes. While not specifically mentioned in the Application, the MYRP  
6 includes a 17 MW, four-hour battery to be installed at the retired  
7 Asheville coal plant in support of the WCMP.<sup>19</sup> This Lake Julian  
8 battery energy storage system (Lake Julian BESS) is anticipated to  
9 come online in March 2025, six months prior to the Asheville Facility,  
10 and both resources will share a point of interconnection and a main  
11 power transformer, which will result in some cost savings for the  
12 overall project. The Lake Julian BESS will be dispatched to provide  
13 capacity and energy arbitrage benefits, as well as ancillary services  
14 to the bulk power system. However, the Lake Julian BESS benefits

<sup>19</sup> See Supplemental Exhibit 1, line 4, to DEP witness Tompson and Shearer's Supplemental Testimony, filed on February 13, 2023, in Docket No. E-2, Sub 1300.

1 are not necessarily contingent upon being co-located with the  
2 Asheville Facility.

3 **Q. Is the Lake Julian BESS the only planned MYRP energy storage**  
4 **facility located in DEP-West?**

5 A. No. The MYRP identifies two other battery storage projects in DEP-  
6 West. The Craggy BESS is a planned 30.5 MW, two-hour battery  
7 anticipated to come online in March 2026, and the Riverside BESS  
8 is a 4.6 MW, one-hour battery anticipated to come online in August  
9 2024. Approximately 35% of the existing and planned 150 MW of  
10 energy storage in the Company's MYRP is located in DEP-West.

11 **Q. The WCMP Order also emphasized DEP's commitment to**  
12 **energy efficiency (EE) and demand-side management (DSM). Is**  
13 **DEP utilizing these programs to reduce demand?**

14 A. It is unclear whether DEP-West has adopted EE and DSM at a higher  
15 rate than DEP as a whole, as the Company stated in response to  
16 discovery that the level of tracking necessary to make this  
17 determination is not available. While DEP has certainly implemented  
18 EE and DSM programs for its customers, the Public Staff reviewed  
19 annual WCMP progress reports and reports on stakeholder  
20 engagement from 2018 through 2023<sup>20</sup>, filed in Docket No. E-2, Sub

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<sup>20</sup> Filed in Docket No. E-2, Sub 1089, on March 28, 2018; March 29, 2019; March 30, 2020; March 29, 2021; March 28, 2022; and March 24, 2023.

1 1089, and did not find any mention of specific programs implemented  
2 or measured savings achieved through EE and DSM. Due to this lack  
3 of information, it is unclear to what extent the need for the Facility  
4 could be met or reduced through an increased emphasis on EE and  
5 DSM measures in DEP-West.

6 **Q. Given the growing load in DEP-West, should DEP seek to locate**  
7 **more solar generation in the region?**

8 A. An analysis of hourly power imports and exports shows that prior to  
9 the Asheville CC coming online in early 2020, DEP-West has  
10 traditionally been reliant upon power imports to meet local demand;  
11 however, these imports have significantly decreased in recent years  
12 with the operation of the Asheville CC, as shown in Figure 2. DEP-  
13 West is still reliant on imports, with imports increasing in the fall and  
14 spring relative to the summer and winter. This is likely due to  
15 maintenance on the Asheville CC, lower demand in the DEP-East  
16 region, and relatively high production from solar facilities in DEP-  
17 East. In addition, DEP has notified the Public Staff of a Transmission  
18 Service Request (TSR) that would provide for an additional 100 MW  
19 of firm point-to-point transmission service from DEP-East to DEP-  
20 West, which is needed in cases where load exceeds generation  
21 resources in the DEP-West region or in the case of a generator  
22 outage.

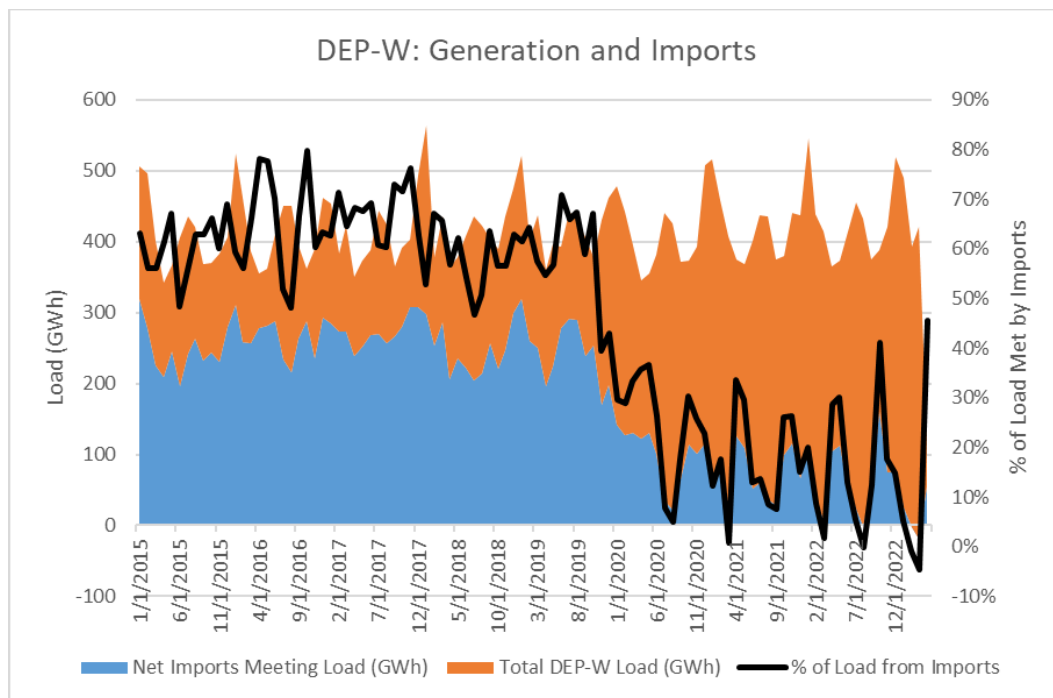


Figure 2: DEP-West load, net imports, and percent of load met from imports, 2015 – 2022.

1            Taken together, the facts that DEP is currently seeking to increase  
 2            its transmission transfer capability between DEP-East and DEP-  
 3            West, existing generation in the area coupled with planned energy  
 4            storage projects will provide additional capacity, and winter peak  
 5            load is growing much faster than summer peak load, lead the Public  
 6            Staff to believe that, although the Asheville Facility would contribute  
 7            to meeting DEP-West’s load, it is likely unnecessary to meet DEP-  
 8            West’s load at this time.

1 **Q. Are DEP and DEC considering any changes to system**  
2 **operations that might further obviate the need for the Facility in**  
3 **DEP-West?**

4 A. Yes. In the Companies' proposed Carbon Plan, they proposed to  
5 consolidate their system operations,<sup>21</sup> effectively merging the three  
6 Balancing Authorities of DEP-West, DEP-East, and DEC.<sup>22</sup> The  
7 Companies state that the combined system operations can lead to  
8 myriad benefits:

9 Overall, consolidated operations provide a number of  
10 customer benefits, including lowering reserve  
11 requirements, improving dispatch efficiencies,  
12 reducing carbon dioxide ("CO2") emissions, and  
13 allowing more solar generation to serve our customers.  
14 Combining into a single balancing authority to manage  
15 load and resources produces savings annually for  
16 customers, helps accommodate expanded levels of  
17 variable renewable energy resources, substantially  
18 reduces forced solar curtailment, and eliminates  
19 several hundred annual combustion turbine starts that  
20 increase fleet maintenance costs.<sup>23</sup>

21 Further, the Companies have stated that a merger of DEP and DEC  
22 will provide these same benefits and would be the most  
23 straightforward solution to resolving both existing and potential future  
24 rate increases.<sup>24</sup> Combined system operations, and an eventual

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<sup>21</sup> See Appendix R to the Companies' proposed Carbon Plan.

<sup>22</sup> The North American Electric Reliability Corporation (NERC) refers to these three Balancing Authorities as CPLW, CPLE, and DUK, respectively.

<sup>23</sup> See the direct testimony of Company witnesses Peeler and Bateman, filed August 21, 2022, in Docket No. E-100, Sub 179, at 5.

<sup>24</sup> *Id.* at 5-6.



1 merger of DEC and DEP, would eliminate wheeling charges between  
2 DEP-East and DEP-West and allow for more economic integration  
3 of less expensive solar located anywhere in the combined system  
4 footprint.

5 **Q. If DEP did not build the Asheville Facility, would complying with**  
6 **HB 951 be more difficult?**

7 A. No. DEP and DEC are currently procuring thousands of MW of new  
8 solar resources in alignment with the Carbon Plan Order.  
9 Approximately 1,200 MW will be procured between DEC and DEP in  
10 the 2022 Solar Procurement, and the Commission directed the  
11 Companies to collectively procure an additional 2,350 MW over the  
12 next two years in the 2023 Solar Procurement and 2024 Solar  
13 Procurement cycles. All this solar capacity will be competitively  
14 procured, ensuring that the transition to carbon neutrality outlined in  
15 HB 951 comes at the least possible cost. To the Public Staff's  
16 knowledge, the Woodfin Facility and the Asheville Facility are the  
17 only non-competitively procured utility-scale solar that either DEC or  
18 DEP plans to build. Both of these projects come at a high-cost  
19 premium relative to solar capacity that might be competitively  
20 procured through existing processes.

1

### III. Public Staff's Recommendations

2 **Q. Please summarize the Public Staff's position on the Application.**

3 A. In sum, the Public Staff's investigation shows that the Asheville  
4 Facility is significantly more expensive than other solar capacity that  
5 could be more cost-effectively procured through a competitive  
6 process in DEP-East, and that the Company has not demonstrated  
7 that the Facility is necessary nor that it is the most cost-effective  
8 option to meet demand and achieve the carbon reduction targets  
9 authorized by HB 951.

10 However, the Public Staff's analysis of the WCMP portfolio suggests  
11 that the Facility will not materially impact the WCMP LCOE and will  
12 not cause the WCMP LCOE to be greater than DEP's avoided costs,  
13 as was considered by the Commission in the Woodfin Order.

14 Therefore, the Public Staff recommends that if the Commission finds  
15 the WCMP dispositive in terms of establishing the need for the  
16 Facility, the Commission should approve the Application, subject to  
17 the conditions outlined below. However, should the Commission no  
18 longer find the WCMP dispositive, the Public Staff recommends that  
19 the Commission deny the Application and direct DEP to continue to  
20 procure solar capacity through its annual competitive procurement  
21 processes, which will ensure the least-cost solar resources for DEP  
22 ratepayers.

1    **Q.    What conditions do you propose, should the Commission grant**  
2           **the CPCN Application?**

3    A.    Should the Commission grant the CPCN, either as filed or under  
4           some other conditions, I recommend that the Commission condition  
5           the CPCN on the following:

6                   1.    That DEP construct and operate the Facility in strict  
7                   accordance with all applicable laws and regulations, including the  
8                   provisions of all permits issued by the North Carolina Department of  
9                   Environmental Quality; and

10                   2.    That issuance of the CPCN does not constitute  
11                   approval of the final costs associated with the construction of the  
12                   facility for ratemaking purposes, and the order is without prejudice to  
13                   the right of any party to take issue with the ratemaking treatment of  
14                   the final costs in a future proceeding.

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

16   A.    Yes.

**QUALIFICATIONS AND EXPERIENCE**

**JEFFREY T. THOMAS**

I graduated from the University of Illinois Champaign-Urbana in 2009, earning a Bachelor of Science in General Engineering. From 2009 to 2015, I worked in various operations management roles for General Electric, United Technologies Corporation, and Danaher Corporation. I left manufacturing in 2015 to attend North Carolina State University, earning a Master of Science degree in Environmental Engineering. At NC State, I performed cost-benefit analysis evaluating smart grid components, such as solid-state transformers and grid edge devices, at the Future Renewable Energy Electricity Delivery and Management Systems Engineering Research Center. My master's thesis focused on electric power system modeling, capacity expansion planning, linear programming optimization, and the effect of various state and national energy policies on North Carolina's generation portfolio and electricity costs.

After obtaining my degree, I joined the Public Staff in November 2017. In my current role, I have investigated and filed testimony in avoided cost determinations, general rate cases and riders, interconnection queue reform, CPCN applications, and integrated resource planning proceedings. I have also worked on the implementation of HB 589 renewable energy programs and the

development of competitive resource solicitations, as well as the initiation and implementation of HB 951's initial Carbon Plan and performance-based ratemaking. I received my Professional Engineering license in North Carolina in April 2020.