

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-2, SUB 1300

In the Matter of:)	
)	DIRECT TESTIMONY OF
Application of Duke Energy Progress, LLC)	JUSTIN C. LAROCHE
For Adjustment of Rates and Charges Applicable)	FOR DUKE ENERGY
to Electric Service in North Carolina and)	PROGRESS, LLC
Performance-Based Regulation)	

OFFICIAL COPY

Oct 06 2022

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND ADDRESS.

A. My name is Justin C. LaRoche. My business address is 400 South Tryon Street, Charlotte, North Carolina 28202.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Duke Energy Corporation (“Duke Energy”) as a Director of Renewable Development.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.

A. I have a bachelor’s degree in Accounting from the University of North Carolina Belk College of Business and a master’s degree in business administration from the University of South Carolina Darla Moore School of Business. I began my career with Duke Energy in 2008 as an intern where I supported initiatives within corporate finance, energy efficiency and regulated renewables. From 2010 to 2012, I served as a project manager within the grid modernization group, after which I returned to regulated renewables in 2012. Since 2014, I have been supporting and leading Duke Energy’s renewable investments in solar and wind facilities throughout our regulated service territory.

Q. WHAT ARE YOUR DUTIES AS DIRECTOR OF RENEWABLE DEVELOPMENT?

A. I am responsible for the development of new renewable facilities, including solar and wind, on behalf of Duke Energy’s regulated utilities, including Duke Energy Progress, LLC (“DEP” or the “Company”). I am responsible for

1 conducting solar development activities including project siting, land
2 acquisition, resource assessment, permitting, obtaining interconnection rights,
3 project layout and design, and arranging contracts for engineering, procurement
4 and construction services, as well as originating, structuring, and executing
5 transactions to acquire rights to existing solar development projects from third-
6 party developers.

7 **Q. HAVE YOU TESTIFIED BEFORE THE NORTH CAROLINA**
8 **UTILITIES COMMISSION (“COMMISSION”) IN ANY PRIOR**
9 **PROCEEDINGS?**

10 A. No.

11 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**
12 **PROCEEDING?**

13 A. My testimony addresses (i) two solar development projects – the 2026 Solar
14 Investment Project and the Asheville Solar Project – that DEP has identified
15 and included in the proposed multiyear rate plan (“MYRP”) filed with the
16 Commission; and (ii) DEP’s request for a 35-year depreciable life for the solar
17 projects included in the proposed MYRP and for future DEP solar facilities.

18 **Q. DOES YOUR TESTIMONY INCLUDE EXHIBITS?**

19 A. Yes. LaRoche Exhibit 1 includes the project forecasted in-service dates,
20 description and scope, cost estimates, and reason for the solar projects included
21 in DEP’s proposed MYRP.

1 **Q. WAS THIS EXHIBIT PREPARED BY YOU OR UNDER YOUR**
2 **DIRECTION AND SUPERVISION?**

3 A. Yes. LaRoche Exhibit 1 was prepared under my supervision.

4 **II. MYRP SOLAR INVESTMENTS**

5 **Q. PLEASE DESCRIBE THE SOLAR PROJECTS INCLUDED IN DEP’S**
6 **PROPOSED MYRP.**

7 A. DEP’s proposed MYRP includes two solar investments: The 2026 Solar
8 Procurement Program Investment (“2026 Solar Investment”) and the Asheville
9 Plant Solar Project (“Asheville Solar”). Consistent with the requirements of
10 Commission Rule R1-17B(d)(2)j.(i)-(iii), LaRoche Exhibit 1 details the reason,
11 scope, and timing of each proposed project, including the projected in-service
12 month and year. In addition, Witness Kathryn Taylor Exhibits 1 and 2 detail
13 information required by Commission Rule 1-17B(d)(2)j.(iii)-(vi). The
14 remainder of my testimony supplements the information outlined in those
15 exhibits.

16 **Q. PLEASE EXPLAIN HOW THE COMPANY SELECTED THE SOLAR**
17 **PROJECTS TO BE INCLUDED IN THE PROPOSED MYRP.**

18 A. DEP examined the solar pipeline to identify discrete and identifiable solar
19 projects that would go into service within the first MYRP rate period. This
20 included consideration of the solar investments that will result from the 2022
21 Carolinas Carbon Plan (“Carbon Plan”),¹ the 2022 Solar Procurement Program

¹ *Duke Energy Carolinas, LLC and Duke Energy Progress, LLC’s Verified Petition for Approval of Carbon Plan*, Docket No. E-100, Sub 179 (May 16, 2022).

1 (“2022 SP Program”) Request for Proposals (“RFP”),² and DEP’s Western
2 Carolinas Modernization Project (“WCMP”)³ commitments. In addition,
3 DEP’s most recent integrated resource plans (“IRPs”), filed with the
4 Commission and the Public Service Commission of South Carolina, also
5 identified the need for new solar resources to reliably serve DEP’s projected
6 customer load.

7 **Q. PLEASE IDENTIFY THE PRIMARY LEGISLATIVE AND**
8 **REGULATORY DRIVERS IMPACTING DEP’S SOLAR PROJECTS.**

9 A. As I mentioned previously, DEP’s most recent IRPs filed in North Carolina and
10 South Carolina identified the need for new solar resources to reliably serve
11 DEP’s projected customer load and is a key driver. Additionally, North Carolina
12 Session Law 2021-165, signed into law on October 13, 2021 (“HB 951”), is a
13 key driver of the 2026 Solar Investment Project. HB 951 requires that DEP and
14 Duke Energy Carolinas, LLC (collectively the “Companies”) take all
15 reasonable steps to achieve 70% carbon emission reductions by 2030 and
16 carbon neutrality in North Carolina by 2050. Specifically, HB 951 provides
17 that 55% of all new solar generation under a proposed carbon plan is to be
18 “supplied from solar energy facilities that are utility-built or purchased by the
19 utility from third parties and owned and operated and recovered on a cost-of-
20 service basis by the soliciting electric public utility.” Session Law 2021-165 §

² 2022 Solar Procurement Request for Proposals for New Solar Resources, Docket Nos. E-2, Sub 1297 and E-7, Sub 1268 (June 1, 2022) (“2022 SP Program RFP”).

³ See *Order Granting Application in Part, With Conditions, and Denying Application in Part*, Docket No. E-2, Sub 1089 (Mar. 28, 2016) (“WCMP Order”).

1 (1).2.b.⁴ The 2026 Solar Investment Project aligns directly with Carbon Plan
2 solar targets. Importantly, all Carbon Plan portfolios assume significant
3 expansion of solar in the Carolinas.⁵ A portion of these resources are expected
4 to be located within DEP's service territory. The Companies initiated the 2022
5 SP Program to procure these new solar resources specifically identified as being
6 needed in 2026 in the Carbon Plan.

7 Preceding HB 951 and the Carbon Plan was DEP's WCMP, which was
8 approved by the Commission in its March 28, 2016 *Order Granting Application*
9 *in Part, With Conditions, and Denying Application in Part* ("WCMP Order").
10 The WCMP included solar and storage resources to be sited in DEP's western
11 territory. The Asheville Solar Project directly relates to and is a commitment
12 stemming from DEP's WCMP.

⁴ The remaining 45% of all new solar generation procured under the Carbon Plan shall be supplied through the execution of PPAs with third parties pursuant to which the electric public utility purchases solar energy, capacity, and environmental and renewable attributes from solar energy facilities owned and operated by third parties that are 80 megawatts-alternating current or less that commit to allow the procuring electric public utility rights to dispatch, operate, and control the solicited solar energy facilities in the same manner as the utility's own generating resources ("Controllable PPA resources").

⁵ Appendix I - Solar, Carolinas Carbon Plan (May 16, 2022) at 1 <https://starw1.ncuc.gov/NCUC/ViewFile.aspx?Id=0f3bac67-2d25-4480-beaf-12c93804691b> ("As of December 31, 2021, approximately 4,350 megawatts ("MW") of utility-scale solar is connected to the [DEC] and [DEP] systems," and this amount "will need to at least double over the next 8 years (2022-2030), adding approximately 5,980 to 7,930 MW of incremental solar, which will cause the total solar to grow to as much as 10,350 to 12,300 MW."). Specifically, the Carbon Plan calls for a minimum of 3.8 GWs of new solar capacity by year end 2030 (Portfolio 2), and 6.8 GWs on the high end (Portfolio 1), to meet these carbon reduction targets. Portfolio 3 calls for 3.8 GWs of new solar by year end 2030 and Portfolio 4 calls for 4.3 GWs. Five of the six Carbon Plan portfolios specifically call for at least 750 MWs of new solar resources by December 31, 2026. DEP and DEC filed supplemental modeling portfolios - Portfolios 5 and 6 - based on recommendations by the Public Staff and the NCUC, as a part of the Carbon Plan's Direct Testimony and Exhibits. See *Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's Carbon Plan Direct Testimony and Exhibits*, Docket E-100, Sub 179 (Aug. 19, 2022). Portfolios 1, 3, and 4 call for 750 MWs by year end 2026, Portfolio 2 calls for 375 MWs.

1 **A. 2026 SOLAR INVESTMENT PROJECT**

2 **Q. PLEASE ADDRESS THE NEED FOR THE 2026 SOLAR INVESTMENT**
3 **PROJECT [R1-17B(d)(2)j(i)].**

4 A. The 2026 Solar Investment Project aids DEP in achieving the solar procurement
5 goals outlined in the 2022 SP Program along with the commitments and
6 objectives associated with prudent utility planning and the Carbon Plan.

7 **Q. DOES THE 2026 SOLAR INVESTMENT PROJECT OFFER**
8 **PROJECTED OPERATING BENEFITS?**

9 A. No quantified projected operating benefits were identified for the proposed
10 project. The specific benefits for the 2026 Solar Investment Project are
11 detailed further in LaRoche Exhibit 1.

12 **Q. HOW DID THE COMPANY DEVELOP THE COSTS ASSOCIATED**
13 **WITH THE 2026 SOLAR INVESTMENT PROJECT?**

14 A. The cost estimate was developed using the same methodology and approach as
15 used in the Carbon Plan. The Carbon Plan utilized capital cost estimates
16 developed by a third-party consultant, Guidehouse. Guidehouse is a leading
17 global provider of consulting services to the public and commercial markets
18 with broad capabilities in management, technology, and risk consulting.
19 Guidehouse provides forward-looking capital cost estimates based on market
20 report information on recent utility-scale solar deployments in the United
21 States, including pricing data from tier-1 solar panel manufacturers,
22 assumptions on system size, design, and geographic location. Guidehouse
23 provides cost estimate forecasts on a semi-annual basis and the Carbon Plan

1 utilized the Fall 2021 Forecast. Duke Energy benchmarked the Guidehouse
2 cost forecasts against other industry sources such as National Renewable
3 Energy Laboratory (“NREL”), U.S. Energy Information Administration
4 (“EIA”), Lawrence Berkley National Laboratory, and Electric Power Research
5 Institute (“EPRI”) for reasonableness. To get a complete cost estimate, Duke
6 Energy added estimates for interconnection costs, owner’s costs, and network
7 upgrade costs to the Guidehouse numbers based on historical information.

8 **Q. ARE THE COST PROJECTIONS FOR EQUIPMENT, ENGINEERING,**
9 **AND CONSTRUCTION OF THE PROPOSED 2026 SOLAR**
10 **INVESTMENT PROJECT PRUDENT AND REASONABLE?**

11 A. Yes.

12 **Q. WHAT IS THE ESTIMATED SCHEDULE FOR THE 2026 SOLAR**
13 **INVESTMENT PROJECT [R1-17B(d)(2)j(iii)]?**

14 A. The 2026 Solar Investment Project will be selected in the 2022 SP Program.
15 The Commission will approve the 2022 SP Program targeted procurement
16 volume by November 1, 2022. Step 1 evaluations are slated to be completed at
17 the end of November 2022 and early winners may be announced at this stage.
18 Step 2 evaluations are slated to be completed in May 2023 and remaining
19 winning projects selected by May 11, 2023. Following bid awards, Utility
20 Ownership Track winners will execute a letter of intent by June 14, 2023.
21 Awarded bids are anticipated to be placed in-service between late 2025 and late
22 2026 with the projects comprising the 2026 Solar Investment Project to be
23 placed in-service by September 1, 2025. The 2022 SP Program had robust

1 participation—a total of 45 projects were submitted under the Utility
2 Ownership Track.

3 **Q. HOW WILL DEP EVALUATE BID PROPOSALS AND SELECT**
4 **PROJECTS AS PART OF THE 2022 SP PROGRAM?**

5 A. As outlined in the 2022 SP Program RFP, DEP will evaluate each bid and rank
6 bids based on a combination of economic and non-economic criteria.⁶ The RFP
7 defined the criteria and guidance for each aspect, economic and non-economic,
8 including the scoring sheet that will be used to facilitate the evaluations.

9 Non-economic scoring criteria include facility permitting, financing
10 experience, technical development and operational experience, historically
11 underutilized businesses, development risks, technology risks, and social
12 objectives and environmental factors. Economic scoring and evaluation is
13 based on calculating each bid's levelized cost of energy ("LCOE") over a 30-
14 year analysis period on a dollar per megawatt hour basis.

15 **B. ASHEVILLE SOLAR PROJECT**

16 **Q. PLEASE DESCRIBE THE ASHEVILLE SOLAR PROJECT.**

17 A. The Asheville Solar Project is a 9.5 MW solar photovoltaic electric generator
18 anticipated to be placed in-service by September 2025. The project is sited at
19 the DEP Asheville Generating Plant site located in Buncombe County, North
20 Carolina, and will occupy a portion of the decommissioned coal plant site, the
21 coal ash basin, and the new landfill.

⁶ 2022 SP Program RFP at 15.

1 **Q. PLEASE ADDRESS THE NEED FOR THE ASHEVILLE SOLAR**
2 **PROJECT [R1-17B(d)(2)j(i)].**

3 A. This project is one component of the WCMP, which was approved by the
4 Commission in the WCMP Order. In the WCMP Order, the Commission
5 emphasized its expectation that DEP would honor its commitment to develop
6 new solar generation in the Asheville area unequivocally instructing the
7 Company as follows: “As to solar and storage, the Commission expects DEP to
8 file as soon as practicable the [Certificate of Public Convenience and Necessity
9 (“CPCN”)] to construct least 15 MW of solar at the Asheville Plant or in the
10 Asheville region.”⁷ The Asheville Solar Project directly contributes 9.5 MWs
11 of solar towards the commitment specificized by the Commission in the WCMP
12 Order.

13 **Q. DOES THE ASHEVILLE SOLAR PROJECT OFFER PROJECTED**
14 **OPERATING BENEFITS?**

15 A. No quantified projected operating benefits were identified for the proposed
16 project. The specific benefits for the Asheville Solar Project are detailed
17 further in LaRoche Exhibit 1.

18 **Q. HOW DID THE COMPANY DEVELOP THE COSTS ASSOCIATED**
19 **WITH THE ASHEVILLE SOLAR PROJECT?**

20 A. The Company used operational experience and knowledge to develop internal
21 cost estimates. The cost estimate includes the cost to construct the facility, such
22 as engineering, procurement, and construction costs (“EPC”), major equipment,

⁷ WCMP Order at 38.

1 labor, interconnection and associated permitting and development costs. DEP
2 believes an internal cost estimate is appropriate for the Asheville Solar Project
3 as opposed to the approach used for the 2026 Solar Investment Project. Given
4 that the Asheville Solar Project is a product of the WCMP rather than the
5 Carbon Plan, a project-specific cost estimating approach is most appropriate as
6 it considers the specific design of the project. On the other hand, the estimation
7 approach employed for the Carbon Plan focuses more on generic solar projects
8 and includes certain project design assumptions.

9 **Q. WHAT IS THE ESTIMATED SCHEDULE FOR THE ASHEVILLE**
10 **PLANT SOLAR FACILITY [R1-17B(d)(2)j(iii)]?**

11 A. DEP plans to submit applications for the CPCN and county permitting for
12 approval in 2023. DEP plans to select the EPC contractor and secure major
13 equipment later in 2023. Construction is anticipated to begin in mid-2025 and
14 the project is anticipated to be placed in-service by September 2025 and used
15 and useful in Rate Year 2.

16 **C. OTHER COST FACTORS**

17 **Q. WHAT DEPRECIABLE LIFE WILL THE COMPANY UTILIZE FOR**
18 **THE FUTURE SOLAR MYRP PROJECTS?**

19 A. For the future solar projects included in the proposed MYRP, DEP seeks to
20 utilize a 35-year life. Consistent with Commission Rule R1-17B(d)(2)j.(iv),
21 Taylor Exhibit 2 includes a 35-year depreciable life for the solar projects
22 included in the proposed MYRP.

1 **Q. WHY IS THE COMPANY PROPOSING A 35-YEAR DEPRECIABLE**
2 **LIFE FOR FUTURE SOLAR ASSETS AND THE TWO MYRP**
3 **PROJECTS?**

4 A. The 35-year expected life is consistent with the Company's current design,
5 procurement, and operational outlook for future solar facilities. DEP's revised
6 design criteria for new solar facilities specify a 35-year overall life expectancy.
7 The Company's operational experience and planned O&M practices for these
8 new facilities are intended to support the 35-year life.

9 **Q. HOW DOES THE 35-YEAR DEPRECIABLE LIFE DESIGN CRITERIA**
10 **SUPPORT THE COMPANY'S REQUEST?**

11 A. DEP will construct new solar facilities consistent with the revised
12 specifications. For example, DEP will design major equipment like racking
13 systems and cabling to provide for the 35-year life expectancy.

14 **Q. DO THE PROJECTED COSTS INCLUDE CONTINGENCY?**

15 A. Yes. Contingency is an essential component of a comprehensive and
16 transparent cost estimate. As such, an industry standard assumption of 4% is
17 included in the cost estimate.

18 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

19 A. Yes.

DUKE ENERGY PROGRESS
MYRP PROJECTS
DOCKET NO. E-2 Sub 1300

Line No.	MYRP Project Name	FERC Function	Project Forecasted In:		Reason for the MYRP Project	Total Project Amount (System)		
			Service Date	MYRP Project Description & Scope		Projected In-Service Costs	Projected Annual Net O&M	Projected Installation O&M
1	Asheville Plant Solar	Other Production Plant in Service	Sep-25	Asheville Plant Solar (9.5 MWs) achieving in-service September 1, 2025	Meets the solar development requirements established in the Western Carolinas Grid Modernization Project CPCN proceeding, encourages carbon reduction through utility scale solar energy, and meets new solar generation resources established in IRP.	\$ 25,723,329	\$ 118,750	\$ -
2	2026 Solar Investment	Other Production Plant in Service	Sep-25	Procurement of 82 MWs achieving in-service September 1, 2025	Meets new solar generation resources established in IRP, encourages carbon reduction through utility scale solar energy, and supports the solar procurement targets established for the 2022 Solar Procurement RFP.	\$ 124,639,796	\$ 1,025,000	\$ -
TOTALS						\$ 150,363,125	\$ 1,143,750	\$ -