

**BEFORE
THE NORTH CAROLINA UTILITIES COMMISSION**

DOCKET NO. E-2 SUB 1300

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

1 **Q. MR. TOMPSON, PLEASE STATE YOUR NAME AND BUSINESS**
2 **ADDRESS.**

3 A. My name is Graham C. Tompson, and my business address is 410 S.
4 Wilmington Street, Raleigh, North Carolina 27601.

5 **Q. BEFORE INTRODUCING YOURSELF FURTHER, PLEASE**
6 **INTRODUCE THE PANEL.**

7 A. I am appearing on behalf of Duke Energy Progress, LLC (“DEP” or “the
8 Company”) together with Evan W. Shearer on the “Battery Energy Storage
9 Panel.”

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

11 A. I am employed by DEP as a Business Development Manager at Duke Energy
12 Corporation. In my current role, I initiate, sponsor, and justify projects
13 involving battery energy storage and microgrid systems, which are owned and
14 operated by the regulated companies and located in the Carolinas.

15 **Q. MR. SHEARER, PLEASE STATE YOUR NAME AND BUSINESS**
16 **ADDRESS.**

17 A. My name is Evan W. Shearer. My business address is 526 South Church Street,
18 Charlotte, North Carolina 28202.

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

20 A. I am employed by Duke Energy Carolinas, LLC (“DEC”) as Principal
21 Integrated Planning Coordinator, providing planning guidance for both DEP
22 and DEC (collectively, the “Companies”), which are subsidiaries of Duke
23 Energy.

1 **Q. DID THE BATTERY ENERGY STORAGE PANEL PREVIOUSLY**
2 **SUBMIT PRE-FILED DIRECT TESTIMONY IN SUPPORT OF DEP’S**
3 **PERFORMANCE- BASED REGULATION (“PBR”) APPLICATION ON**
4 **OCTOBER 6, 2022?**

5 A. Yes.

6 **Q. WHAT IS THE PURPOSE OF THE PANEL’S SUPPLEMENTAL**
7 **DIRECT TESTIMONY?**

8 A. Pursuant to an agreement reached between the Company and Public Staff,
9 witnesses supporting projects contained in DEP’s Multiyear Rate Plan
10 (“MYRP”) are filing supplemental direct testimony describing updates (based
11 on a set of agreed-upon criteria) to their respective MYRP projects. Our
12 supplemental direct testimony addresses updates associated with the proposed
13 battery energy storage projects included in DEP’s PBR Application. This update
14 also includes the addition of transmission network upgrade costs associated
15 with the storage projects included in DEP’s proposed MYRP.

16 In addition, DEP has estimated standalone storage Investment Tax
17 Credit (“ITC”) amounts for the battery energy storage projects included in
18 DEP’s proposed MYRP Application pursuant to the Inflation Reduction Act
19 (“IRA”). Our testimony supports the ITC assumptions reflected in the
20 corresponding revenue requirement calculations, including the proper exclusion
21 of the network upgrade costs noted previously from those ITC impacts. The
22 Company’s estimated IRA impacts to the updated MYRP revenue requirement
23 are reflected in Witness Kathryn Taylor’s Supplemental Exhibits 3 and 4.

1 **Q. ARE YOU PROVIDING ANY EXHIBITS WITH YOUR**
2 **SUPPLEMENTAL DIRECT TESTIMONY?**

3 A. Yes. Battery Energy Storage Panel Supplemental Exhibit 1 provides updated
4 details regarding each of the Battery Energy Storage MYRP projects supported
5 by our testimony, including projected cost, schedule, scope, and the reason for
6 each project as required by Commission Rule R1-17B(d)(2)j.

7 Battery Energy Storage Panel Supplemental Exhibit 2 compares certain
8 details of MYRP projects to those provided in Meeks/Shearer Exhibit 1, which
9 was filed at the time of the initial PBR Application. Battery Energy Storage
10 Panel Supplemental Exhibit 2 also indicates which criteria makes the proposed
11 change eligible for inclusion in the Company's supplemental MYRP filing,
12 pursuant to the previously-referenced agreement that the Company reached
13 with Public Staff.

14 **Q. WERE THESE SUPPLEMENTAL EXHIBITS PREPARED OR**
15 **PROVIDED BY THE PANEL OR UNDER THE PANEL'S DIRECTION**
16 **AND SUPERVISION?**

17 A. Yes.

18 **I. MYRP PROJECT LIST UPDATES – BATTERY ENERGY STORAGE**

19 **Q. IS DEP PROPOSING TO INCLUDE NEW BATTERY ENERGY**
20 **STORAGE PROJECTS AS PART OF ITS MYRP THAT WERE NOT**
21 **INCLUDED IN DEP'S PBR APPLICATION?**

22 A. No.

1 **Q. HAS DEP IDENTIFIED BATTERY ENERGY STORAGE PROJECTS**
2 **THAT WERE INCLUDED IN DEP’S PBR APPLICATION THAT ARE**
3 **NO LONGER NECESSARY OR WERE MOVED OUT OF THE MYRP**
4 **PERIOD?**

5 A. No.

6 **II. MYRP PROJECT COST UPDATES - BATTERY ENERGY STORAGE**

7 **Q. IS DEP PROPOSING TO UPDATE COSTS ASSOCIATED WITH ANY**
8 **OF THE BATTERY ENERGY STORAGE MYRP PROJECTS**
9 **INCLUDED IN DEP’S PBR APPLICATION?**

10 A. Yes.

11 **Q. PLEASE EXPLAIN WHICH PROJECTS YOU SEEK TO UPDATE AND**
12 **THE BASIS FOR EACH UPDATE.**

13 A. DEP has updated cost estimates for each proposed battery energy project. These
14 updates are driven primarily by an overall increase in the cost of materials
15 required for each proposed project. Importantly, the scope of each project
16 remains unchanged from that described in the Panel’s pre-filed direct testimony
17 in support of DEP’s PBR Application.

18 **Q. WHY HAVE COST ESTIMATES FOR PROPOSED BATTERY**
19 **STORAGE PROJECTS CHANGED SINCE DEP’S INITIAL**
20 **APPLICATION?**

21 A. Several factors drove cost estimate changes for the proposed battery energy
22 storage projects. Since DEP submitted its initial application, the Company has
23 received and incorporated indicative pricing from qualified Battery Energy

1 Storage System (“BESS”) integrators and Engineering, Procurement, and
2 Construction (“EPC”) vendors.

3 In addition, in the initial PBR Application, DEP provided rounded total
4 project costs for the discrete and identifiable battery energy storage projects in
5 its MYRP period. These initial figures were rounded to the nearest million
6 dollars and included rounding up in some instances and rounding down in
7 others. The net result produced battery energy storage portfolio costs that were
8 approximately 2% different from the total portfolio cost using non-rounded
9 values. During discovery, this rounding approach resulted in confusion when
10 project estimate worksheets were compared to the requested amounts in the
11 PBR Application. Therefore, as part of this supplemental request, DEP has
12 submitted non-rounded cost estimates for the proposed battery energy storage
13 projects.

14 **Q. HOW DID DEP DEVELOP THE UPDATED PROJECT COST**
15 **ESTIMATES?**

16 A. DEP used many of the assumptions incorporated into the cost estimates that
17 supported its PBR Application. Those cost estimates were developed internally
18 using: (1) averages/ranges of EPC quotes for actual past projects and theoretical
19 procurements representative of future projects; (2) averages/ranges of direct
20 current (“DC”) equipment costs from real-time 2022 market supplier data; and
21 (3) Q2 2022 interconnection study cost estimates.

22 DEP identified disparities between the DC equipment costs used in the
23 MYRP battery energy storage project estimates in its PBR Application and the

1 most recent market information available. To ensure that cost estimates reflect
2 the most recent and accurate market data, DEP solicited updated major
3 equipment pricing data for a variety of project sizes from multiple qualified
4 integrators in Q4 of 2022. DEP extrapolated a decline in the average \$/kWh
5 cost based on historic project or RFI data. Using this new information, DEP
6 updated only the costs for DC equipment within its original estimation models.

7 As discussed in our pre-filed direct testimony, given that the Riverside
8 battery project is further along in the project development cycle, DEP uses a
9 Class 4 cost estimate for this project—these estimates are derived from vendor
10 quotes or estimates that are specific to projects nearing the procurement phase.

11 **III. MYRP PROJECT SCHEDULE UPDATES - BATTERY ENERGY**

12 **STORAGE**

13 **Q. PLEASE ADDRESS ANY UPDATES TO THE FORECASTED IN-**
14 **SERVICE DATES FOR THE PROPOSED BATTERY STORAGE**
15 **PROJECTS.**

16 **A.** Except for the Craggy battery project, DEP has updated the forecasted in-
17 service dates for every proposed battery energy storage project included in its
18 proposed MYRP.

19 Given the Craggy battery project's March 2026 estimated in-service
20 date, DEP has sufficient time to plan for resource allocation and supply chain
21 lead times.

necessity for upgrades is noted on a project-specific basis in Battery Energy Storage Panel Supplemental Exhibit 2.

V. MYRP STANDALONE STORAGE ITC BENEFITS

Q. DO ANY OF THE PROPOSED BATTERY ENERGY STORAGE PROJECTS OFFER PROJECTED OPERATING BENEFITS?

A. Yes. DEP anticipates that the standalone storage ITCs available through the recently enacted IRA will benefit DEP's retail customers over the course of each MYRP battery energy storage project's life. Therefore, the battery energy storage projects included in DEP's proposed MYRP will offer operational benefits under N.C. Gen. Stat. § 62-133.16(c)(1)(a). Taylor Supplemental Exhibit 4 shows the calculation of the revenue requirement for each MYRP project and includes an estimated revenue requirement impact associated with potential IRA tax credits. The testimony of Witness John R. Panizza summarizes the key tax related components of the IRA and provides an overview of the changes most applicable to DEP.

Q. PLEASE EXPLAIN THE STANDALONE STORAGE ITC ASSUMPTIONS USED FOR PROPOSED BATTERY ENERGY STORAGE PROJECTS.

A. Except for the Lake Julian battery project, DEP assumed 30% ITC rates for all battery energy storage projects. For the Lake Julian battery project, DEP assumed a 40% ITC rate as it is located in or adjacent to an "Energy Community" as defined in the IRA, and thus may be eligible for a 10% ITC adder. Witness Panizza's supplemental testimony further describes ITC rates.

1 Witness Taylor incorporated the DEP Supplemental capital cost
2 estimates and ITC rate assumptions for individual battery energy storage
3 projects to make further assumptions (such as tax basis) based upon information
4 from Witness Panizza as to how the expected ITCs should be reflected from a
5 ratemaking perspective. In addition, Witness Taylor accounted for the
6 transmission network and distribution system upgrades to ensure that such costs
7 were properly excluded from the ITC rate impact calculations.

8 **Q. DOES THIS CONCLUDE THE PANEL'S SUPPLEMENTAL DIRECT**
9 **TESTIMONY?**

10 **A. Yes.**

DUKE ENERGY PROGRESS, LLC
MYRP PROJECTS - SUPPLEMENTAL
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Battery Energy Storage Panel Supplemental Exhibit 1
Docket No. E-2, Sub 1300
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Line No.	MYRP Project Name	FERC Function	Project Forecasted In- Service Date	MYRP Project Description & Scope	Reason for the MYRP Project	Total Project Amount (System)		
						Projected In- Service Costs	Projected Annual Net O&M	Projected Installation O&M
1	Craggy	Other Production Plant In Service Transmission Plant In Service	Mar-26	This is a 30.5MW 2 hour battery in DEP-W supporting the Western Carolinas Modernization Plan. Project includes associated network upgrades.	Constituent project of the Foundational Portfolio of Energy Storage resources which are required to enable the cleaner energy transition.	\$ 52 476 912	\$ 915 000	\$ -
2	Elm City	Other Production Plant In Service Transmission Plant In Service	Sep-25	This is a 18MW 4 hour battery at an existing solar project owned/operated by DEP. Project includes associated network upgrades	Constituent project of the Foundational Portfolio of Energy Storage resources which are required to enable the cleaner energy transition.	\$ 59 007 156	\$ 549 000	\$ -
3	Knightdale	Other Production Plant In Service Transmission Plant In Service	Sep-25	This is a 100MW 2 hour battery at Wake county.	Constituent project of the Foundational Portfolio of Energy Storage resources which are required to enable the cleaner energy transition.	\$ 121 510 716	\$ 3 000 000	\$ -
4	Lake Julian	Other Production Plant In Service	Mar-25	This is a 17MW 4 hour battery at the retired Ashevi le Coal plant supporting the Western Carolinas Modernization Project.	Constituent project of the Foundational Portfolio of Energy Storage resources which are required to enable the cleaner energy transition.	\$ 57 264 365	\$ 517 500	\$ -
5	Riverside	Other Production Plant In Service Distribution Plant In Service	Aug-24	This is a 4.6MW 1 hour battery in DEP-W supporting the Western Carolinas Modernization Project.	Constituent project of the Foundational Portfolio of Energy Storage resources which are required to enable the cleaner energy transition.	\$ 11 803 105	\$ 138 000	\$ -
6	Warsaw	Other Production Plant In Service Transmission Plant In Service	Sep-24	This is a 30MW 2 hour battery at an existing solar project owned/operated by DEP.	Constituent project of the Foundational Portfolio of Energy Storage resources which are required to enable the cleaner energy transition.	\$ 49 129 252	\$ 900 000	\$ -
TOTALS						\$ 351,191,506	\$ 6,019,500	\$ -

DUKE ENERGY PROGRESS, LLC
MYRP PROJECTS - ORIGINAL FILING VS SUPPLEMENTAL FILING COMPARISON
DOCKET NO. E-2 Sub 1300

Battery Energy Storage Panel Supplemental Exhibit 2
Docket No. E-2, Sub 1300

Line No.	MYRP Project Name	FERC Function	Filed Oct 2022 - Total Project Amount (System)				Filed Feb 2023 - Total Project Amount (System)				Supplemental Update Criteria
			Project Forecasted In-Service Date	Projected In-Service Costs	Projected Annual Net O&M	Projected Installation O&M	Project Forecasted In-Service Date	Projected In-Service Costs	Projected Annual Net O&M	Projected Installation O&M	
1	Craggy	Other Production Plant In Service, Transmission Plant in Service*	Mar-26	\$ 48,000,000	\$ 915,000	\$ -	Mar-26	\$ 52,476,912	\$ 915,000	\$ -	Project > \$10M
2	Elm City	Other Production Plant In Service, Transmission Plant in Service*	Jun-25	\$ 52,000,000	\$ 549,000	\$ -	Sep-25	\$ 59,007,156	\$ 549,000	\$ -	Project > \$10M
3	Knightdale	Other Production Plant In Service, Transmission Plant in Service*	Mar-25	\$ 107,000,000	\$ 3,000,000	\$ -	Sep-25	\$ 121,510,716	\$ 3,000,000	\$ -	Project > \$10M
4	Lake Julian	Other Production Plant In Service	Dec-24	\$ 50,000,000	\$ 517,500	\$ -	Mar-25	\$ 57,264,365	\$ 517,500	\$ -	Project > \$10M
5	Riverside	Other Production Plant In Service, Distribution Plant in Service*	Feb-24	\$ 11,000,000	\$ 138,000	\$ -	Aug-24	\$ 11,803,105	\$ 138,000	\$ -	Project > \$10M
6	Warsaw	Other Production Plant In Service, Transmission Plant in Service*	Jul-24	\$ 44,000,000	\$ 900,000	\$ -	Sep-24	\$ 49,129,252	\$ 900,000	\$ -	Project > \$10M
TOTALS				\$ 312,000,000	\$ 6,019,500	\$ -		\$ 351,191,506	\$ 6,019,500	\$ -	

* Note Necessary transmission or distribution network upgrades are within the scope of this project. Estimated costs of those upgrades were determined and provided to Witness Taylor for use in calculating the NC Retail revenue requirement and the FERC Function for each project was updated accordingly.