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September 5, 2023

VIA ELECTRONIC FILING

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

**RE: Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's
Third Joint Status Report on Phase II Pilot Programs and Motion for
Authorization to File Additional Update
Docket Nos. E-7, Sub 1195 and E-2, Sub 1197**

Dear Ms. Dunston:

Please find enclosed for filing in the above-referenced dockets Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's Third Joint Status Report on Phase II Pilot Programs and Motion for Authorization to File Additional Update.

If you have any questions, please let me know.

Sincerely,

A handwritten signature in black ink that reads "Jason Higginbotham".

Jason A. Higginbotham

Enclosure

cc: Parties of Record

OFFICIAL COPY

Sep 05 2023

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. E-2, SUB 1197
DOCKET NO. E-7, SUB 1195

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of:

Application by Duke Energy Carolinas, LLC and Duke Energy Progress, LLC for Approval of Proposed Electric Transportation Pilot))))))))))	THIRD JOINT STATUS REPORT OF DUKE ENERGY CAROLINAS, LLC AND DUKE ENERGY PROGRESS, LLC ON PHASE II PILOT PROGRAMS AND MOTION FOR AUTHORIZATION TO FILE ADDITIONAL UPDATE
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NOW COME Duke Energy Carolinas, LLC (“DEC”) and Duke Energy Progress, LLC (“DEP”) and together with DEC, “Duke” or the “Companies”) by and through counsel, and, pursuant to the North Carolina Utilities Commission’s (“Commission”) March 22, 2023 *Order Accepting Filing of Second Report on Development of Phase II Pilot Programs And Setting Date for Third Report* and the Commission’s July 13, 2022 *Order Allowing Withdrawal of Proposed Customer Operated Electric Vehicle Supply Equipment Pilot Programs and Extending the Time for Developing Remaining Phase II Pilot Proposals* (“Phase II Pilot Status Report Order”), in the above-captioned dockets (“ET Dockets”), and submit this Third Joint Status Report on the Companies’ Phase II Electric Transportation Pilot (“Phase II Pilot”) programs.

On March 29, 2019, the Companies filed an application in the ET Dockets, pursuant to N.C. Gen. Stat. § 62-140, requesting approval of seven proposed electric transportation pilot (“ET Pilot”) programs. After receiving comments and reply comments and

conducting a hearing, the Commission issued an *Order Approving Electric Transportation Pilot Programs, In Part* (“ET Pilot Order”). The ET Pilot Order approved the Companies’ proposed Public Level 2 Fast Charging pilot and approved, on a modified scale, the Companies’ proposed Electric Vehicle School Bus, Direct Current Fast Charging, and Multi-Family Dwelling Charging pilots (collectively, “Phase I Pilots”). The ET Pilot Order approved the framework for the modified ET Pilot programs, declined to approve four other pilot programs, and directed Duke and the parties to these dockets to engage in stakeholder collaborative discussions about the structure and implementation of the approved programs. The ET Pilot Order also required Duke to file within six months Duke’s proposed Phase II ET Pilot Programs.

Consistent with the ET Pilot Order, on May 24, 2021, the Companies filed an application requesting approval of proposed Phase II Pilot programs, proposing four Phase II Pilots. As stated in the application, the “Phase II Pilot Programs are designed, after approximately six months of engagement with, and input from, the Electric Transportation Stakeholder Group (“ETSG”) to comport with the Commission’s ET Order and to provide valuable feedback on how best to help North Carolina reach Executive Order No. 80’s (“EO 80”) goal of 80,000 zero emission vehicles on North Carolina roads by 2025.”¹

On February 21, 2022, the Commission issued an *Order Requiring Further Collaboration and Report on Proposed Phase II Pilots* (“Phase II Pilot Order”). This Order directed Duke to continue working with the ETSG and to refine and modify its Phase II Pilots to take into consideration the possibility of receiving direct funding under the Infrastructure Investment and Jobs Act (“IIJA”), H.R. 3684, 117th Cong. (2021), enacted

¹ Executive Order No. 80, North Carolina’s Commitment to Address Climate Change and Transition to a Clean Energy Economy, Oct. 29, 2018.

on November 15, 2021, and/or other recently available sources of federal funds. In addition, the Commission directed Duke to file a report within 90 days updating the Commission on Duke's progress on these directives.

On May 11, 2022, the Companies filed a Joint Motion to Withdraw Customer Operated Electric Vehicle Supply Equipment Pilots from Phase II Pilot Proposals and to Hold Phase II Pilot Dockets in Abeyance ("Joint Motion"). The Commission issued its Phase II Pilot Status Report Order.

Consistent with the Phase II Pilot Status Report Order, the Companies withdrew their proposed electric vehicle supply equipment ("EVSE") Pilots for DEC and DEP respectively. On August 15, 2022, the Companies filed them for approval not as Pilots, but as standalone programs, in the above-captioned dockets. The Commission approved that application on August 8, 2023.

Additionally, on August 16, 2022, DEC filed an application for approval of a vehicle to grid ("V2G") pilot in Docket No. E-7, Sub 1275. The Commission approved that application on April 11, 2023.

The Commission also approved Managing Charging Pilots for EVs in Docket Nos. E-2, Sub 1291 and E-7, Sub 1266. Those Managed Charging Pilots are intended to increase knowledge of managed charging and to test novel technology, customer acceptance, complex cost of service-based price signals and the integration of managed charging into system resources. One feature of the Managed Charging Pilots is that Duke will partner with automotive original equipment manufacturers ("OEMs") to test the Open Vehicle Grid Integration Platform ("OVGIP"). The OVGIP, owned and operated by the OEMs, establishes a two-way utility interface that applies utility industry communication

standards and provides interoperability with the OEMs' vehicle telematics application. Enrollment for the Managed Charging Pilots began on September 1, 2023, and program operations are anticipated to begin in November 2023.

UPDATE ON ELECTRIC VEHICLE PHASE II PILOTS

For the Commission's convenience, the Phase II Pilots include the following:

- **Public L2 Phase II Pilot.** This pilot is intended is to develop and maintain publicly accessible L2 EV charging stations to support EV adoption and serve Duke's customers. For the L2 Phase II Pilot, the Companies proposed 160 ports.
- **Multi-Family Level 2 Phase II Pilot.** Multi-family locations will include apartments, condominiums, and retirement homes. For this component of the Phase II Pilot, the Companies proposed 160 ports.
- **Highway Corridor Fast Charging.** The Companies also intend to install 80 fast chargers for highway corridor fast charging across their service territories.
- **EV School Bus Program.** In Phase II, the Companies proposed a deployment of approximately 4-6 buses at 10-15 sites for a total of 60 buses.

The Companies continue to work with the ETSG and have provided quarterly updates on the potential to reevaluate the Phase II Pilots in light of the evolving state of EV charging in North Carolina, as enabled by significant federal and state funding. The most recent ETSG meeting was held on May 31, 2023, and the next meeting will be held on September 22, 2023.

The Companies were regular working group participants in the development of the Clean Transportation Plan ("CTP"), issued earlier this year, and they continue their support through participation in subsequent working group meetings. During their engagement with the North Carolina Department of Transportation ("NC DOT"), the Companies shared lessons learned and observations from programs and activities across the Duke footprint, on topics such as, education and frequently asked questions about EVs, the importance of simplifying adoption, rate structures/EV charging load management and

considerations/structures that will enable medium- and heavy-duty as well as large fleet electrification.

The Companies continue to support and track progress of the relevant IIJA programs, most notably activity related to National Electric Vehicle Infrastructure (“NEVI”) funding. To that end, at the request of the NC DOT, the Companies gave a presentation on best practices and engagement for prospective market recipients of IIJA funding on October 18, 2022. Using their experiences and lessons learned from Phase I, the Companies have been able to provide input on challenges such as supply chain, securing contracts with site hosts and on how the details of EV charger components can impact the need for driver education. The Companies have also engaged with NC DOT on critical items such as designing efficient processes for NEVI site capacity inquiries. NC DOT continues to work toward the release of solicitations for the first phase of NEVI sites. However, as of the date of this update, the first such solicitation has not been issued by NC DOT. Stakeholder engagements for deployment of any excess NEVI funds to install EV charging for underserved communities also remain pending.

Because DOT continues to develop its approach to NEVI charger deployment, the Companies remain unable to fulfill the Commission’s order to reconsider the Phase II pilot programs meaningfully in the context of how they may be complementary to current state & federal activity.

UPDATE ON PHASE I PILOTS

The Companies provide the following progress report on Phase I as well as operating data on the public charging infrastructure portion of the Pilots.

A. Status of Public Charging Installations (as of August 14, 2023)²

	Approved by NCUC	Commissioned	Engineering & Construction	Additional Contracted	Site Hosts Needed
Public DCFC	40 Dispensers ³	30 Dispensers	10 Dispensers	0 Dispensers	None
Public L2	160 Ports ⁴	112 Ports	48 Ports	0 Ports	None
Multi-Family Dwelling L2	80 Ports ⁵	58 Ports	22 Ports	0 Ports	None

B. Obtaining Public Charging Site Host (& Related) Agreements

In the prior update on the progress of Phase I public charging deployments, the Companies reported several challenges associated with executing site host agreements. These challenges included host concern with easements and liability waivers as well as lengthy approval timelines for municipalities. As of this report, the Companies are pleased to share that all chargers approved by the Commission for this pilot have been assigned to a site host with appropriate agreements executed.

C. Concerns with Supply Chain

Currently, the national shortage of transformers remains the only notable supply chain constraint. While the Companies believe that the delays incurred as a result will not push the completion of installations past end of the pilot, allocation of transformers is

² Table shows DEC and DEP combined.

³ Referred to in the tariffs as DCFC “stations.”

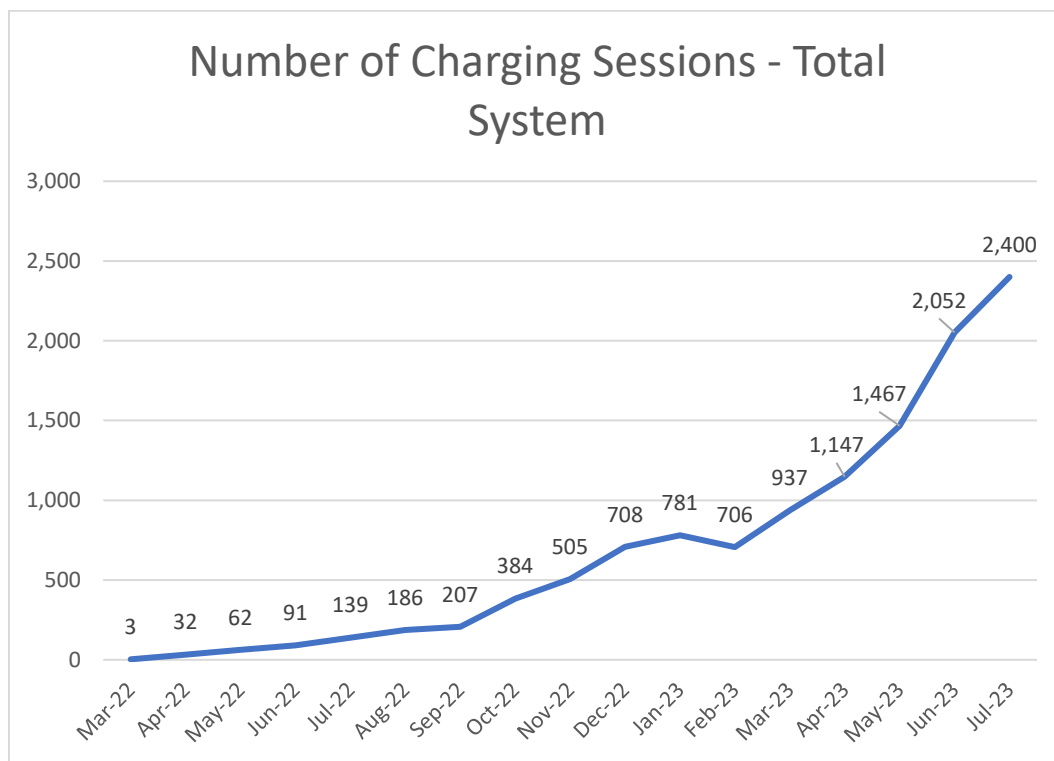
⁴ Referred to in the tariffs as “stations.”

⁵ Referred to in the tariffs as “stations.”

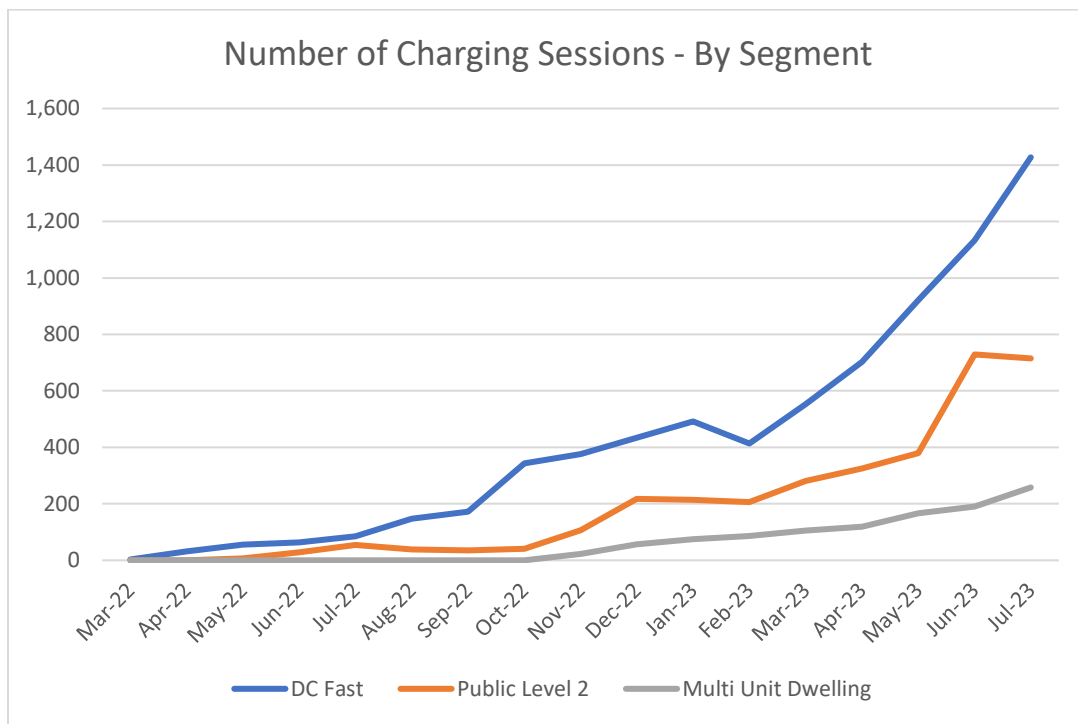
performed according to a hierarchy and is dynamic. As a result, changing conditions – such as severe storms that damage service to the Companies’ customers – could result in further delays.

D. Statistics from Installed Charger Base

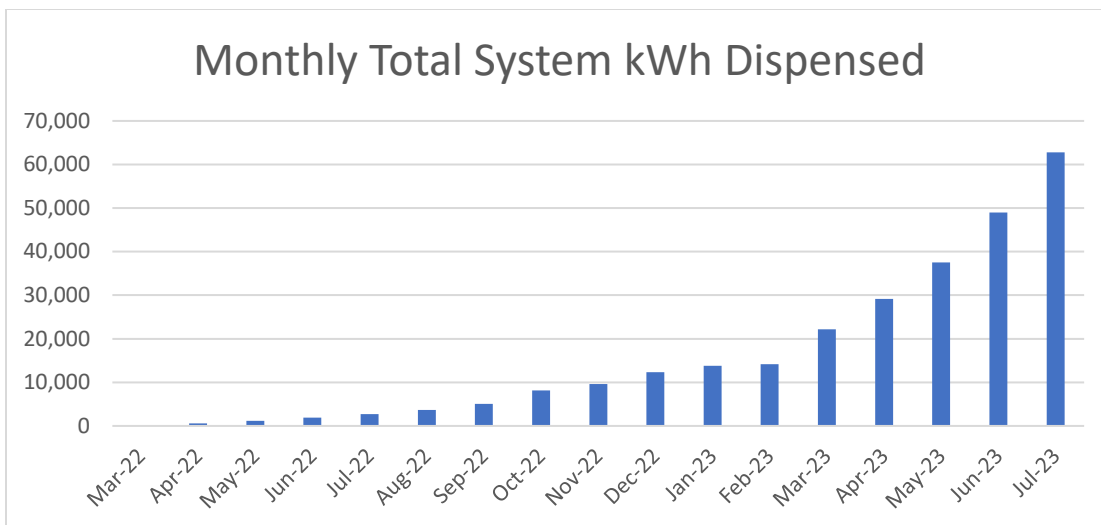
The Companies are pleased to provide updated trends and statistics for usage of Phase 1 chargers deployed. The first figure below tracks the total number of charging sessions on the system per month beginning in March of 2022, when the first Phase 1 charger was commissioned, and continuing through July of 2023. As can be observed, Session volume is increasing, with July showing four times the charging sessions across the Phase 1 chargers installed thus far, as compared to December 2022.



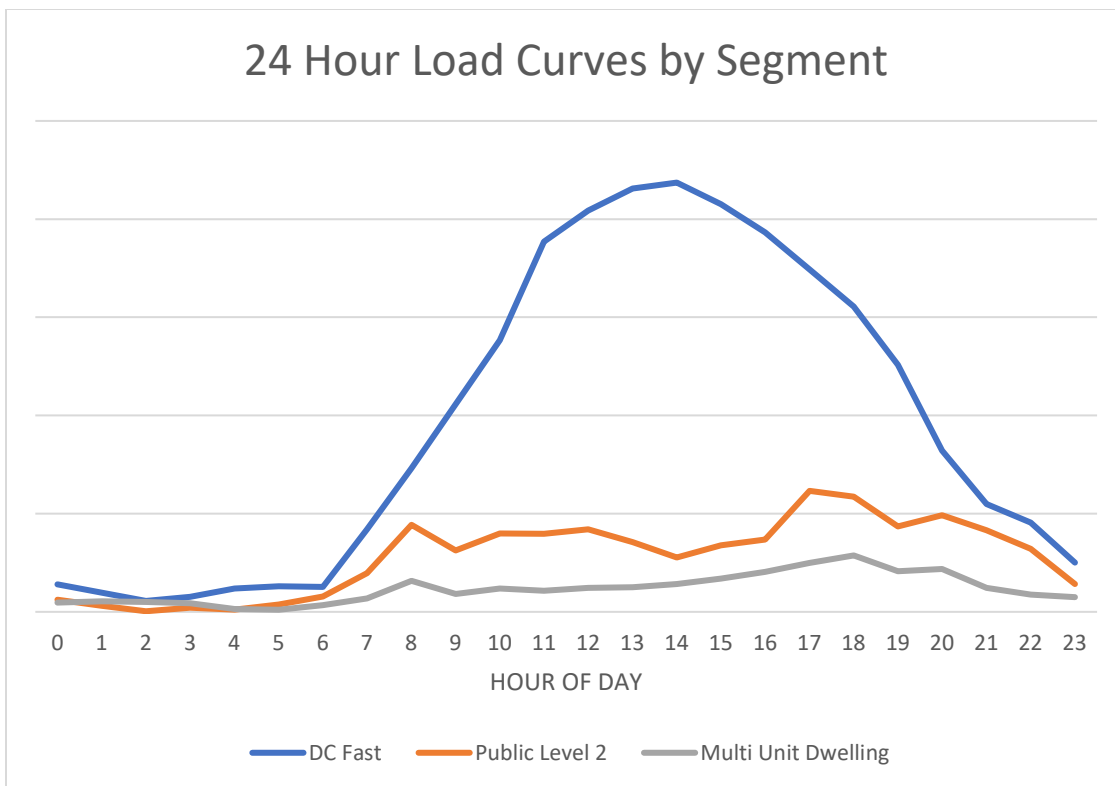
The next figure shows the same data but broken down into the three public charging use cases. While most of the growth in utilization of the system is driven by DC fast charging usage, there is also a notable uptick in public level 2 charging use in June 2023.



The following graph shows the monthly increase in kWh dispensed by the North Carolina Park & Plug system that corresponds with additional charging session count. In total, drivers in North Carolina have charged their EVs to the tune of nearly 274 MWh – a near nine-fold increase since the Companies last report. Assuming one kWh powers 3.5 miles driven, the Phase 1 network has enabled over 950,000 miles driven. The data also corroborates the marked increase in higher-powered fast charging usage as monthly kWh dispensed increased 400% from December to July while charging sessions increased at a lower relative rate of 240%.



Finally, daily load curves have further taken shape. As shown in the chart below and as is consistent with the prior report, DCFC usage is notable during normal hours in which drivers would travel long distance. While obscured by the magnitude of the DC fast charging load, public level 2 segment curve shows a concentration of usage through the workday morning hours and into early afternoon before falling off until a maximum peak around typical dinner time hours. Multi-family dwelling usage is concentrated in the evening hours, presumably when tenants return home for the day, but also shows a small spike at 8:00 am. In general, it can be concluded that the multi-family dwelling segment is ripe for simple EV load management measures that will assist the Companies in managing growth on the electric system while also likely saving EV drivers money.



E. Next Steps for Public Charging Programs

The pilot period draws to a close on November 24, 2023. The Companies are finalizing directional next steps and expect to file any necessary requests to the Commission after conferring with the ETSG during the next ETSG meeting.

F. Phase I School Bus Program.

The Companies support of interested districts in their pursuit of North Carolina Department of Environmental Quality (“NC DEQ”) Volkswagen mitigation (“VW”) trust funds resulted in seven school districts receiving funding for 14 buses. As of August 17, 2023, the program has secured customer agreements and the full complement of necessary funding (including program funds, customer funds, and funds from other sources) for 26 buses at 12 school districts. Since the Companies’ last report, one district that received NC

DEQ VW funds for five buses has elected to proceed with three buses instead of five. In response to that decision, the Companies are working with North Carolina Department of Public Instruction (“NC DPI”) to reassign the associated NC DEQ funding to one or more interested districts.

i. Remarks on V2G Technology

V2G technology remains in the early stages of development. As of this report, the Companies are aware of only one vendor that offers a UL-certified, V2G-capable DC Fast Charger. Other vendors are expected to enter the market, but the timeframe is unknown. Additionally, though the site was energized in March 2023, the chargers continue to experience technical issues preventing bidirectional power flow and reliable basic charging of the buses. The Companies are actively working with manufacturers and program participants to troubleshoot the charging systems and ensure that affected school districts can operate in the absence of the intended permanent solution. A second site is expected to be energized and commissioned in the third or fourth quarter of 2023. Because the same hardware will be installed, the second site may offer additional insights. Notwithstanding these issues, the Companies remain committed to exploring the potential benefits to the system of bidirectional charging technology in school buses.

ii. Status of School Bus Program Deployment

Approved by NCUC	Commissioned	Engineering, Procurement & Construction	Additional Contracted & Funding Secured
30 Buses	0 Buses	9 Buses	17 Buses

iii. Projected In-Service Timeframes

Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024
9 Buses	0 Buses	0 Buses	8 Buses	9 Buses

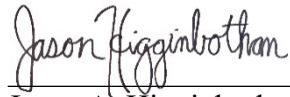
The 2024 timeline for deploying the remaining program sites is primarily driven by the delivery dates of the buses, which have lengthy manufacturing lead times following the Companies', participant districts' and NC DPI's efforts to secure funding from NC DEQ. Taking this schedule into account alongside the technological challenges described above, more progress is needed in Phase I deployments before a second Phase can be contemplated alongside lessons learned.

To allow for more time to complete those learnings, the Commission granted the Companies' Joint Request for Extension of NC Electric Transportation Pilot Phase I Electric School Bus Program by order issued on January 27, 2023, which extended the duration of the EVSB Pilot Program to June 30, 2025.

CONCLUSION

Based upon the foregoing, the Companies respectfully request an additional six months, up to and until March 5, 2024, to refine and modify its Phase II Pilots to take into consideration how a re-imagined set of pilot programs could be complementary to activities stemming from IJJA as well as other sources of funding. In particular, these six months may provide the Companies and the Commission more clarity on DCFC deployments and development of any community charging plans under NEVI. The Companies will continue to work with the ETSG to review Phase I learnings.

Respectfully submitted, this the 5th day of September 2023.



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CERTIFICATE OF SERVICE

I certify that a copy of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's Third Joint Status Report on Phase II Pilot Programs and Motion for Authorization to File Additional Update, in Docket Nos. E-7, Sub 1195 and E-2, Sub 1197, has been served by electronic mail, hand delivery, or by depositing a copy in the United States Mail, 1st Class Postage Prepaid, properly addressed to parties of record.

This the 5th day of September, 2023.



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