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Feb 11 2022

February 11, 2022

VIA ELECTRONIC FILING

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

**Re: Duke Energy Carolinas, LLC's and Duke Energy Progress, LLC's
Application for Approval of Electric Vehicle Managed Charging Pilots
Docket Nos. E-7, Sub 1266 and E-2, Sub 1291**

Dear Ms. Dunston:

Enclosed for filing in the above-referenced dockets are Duke Energy Carolinas, LLC's and Duke Energy Progress, LLC's Application for Approval of Electric Vehicle Managed Charging Pilots. These pilots come after discussions in the Comprehensive Rate Review and Electric Transportation Stakeholder Collaborative. Although these pilots are designed to operate independently and separately from the Companies' pending Make Ready Credit Programs, filed on April 30, 2021 in Docket Nos. E-2, Sub 1197 and E-7, Sub 1195, they are not mutually exclusive and will complement each other if effective at the same time.

Please do not hesitate to contact me if you have any questions or need additional information.

Sincerely,

Kendrick C. Fentress

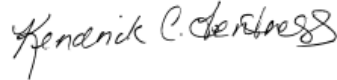
Enclosures

cc: Dianna Downey

CERTIFICATE OF SERVICE

I certify that a copy of Duke Energy Carolinas, LLC's and Duke Energy Progress, LLC's Application for Approval of Electric Vehicle Managed Charging Pilots, in Docket Nos. E-7, Sub 1266 and E-2, Sub 1291, 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 11th day of February, 2022.



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STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-7, SUB 1266
DOCKET NO. E-2, SUB 1291

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of)	
Application by Duke Energy Carolinas, LLC)	DUKE ENERGY CAROLINAS,
and Duke Energy Progress, LLC for)	LLC’S AND DUKE ENERGY
Approval of Proposed Transportation Project)	PROGRESS, LLC’S JOINT
)	APPLICATION FOR APPROVAL
)	OF ELECTRIC VEHICLE
)	MANAGED CHARGING PILOTS
)	

NOW COME Duke Energy Carolinas, LLC (“DEC”) and Duke Energy Progress, LLC (“DEP”) (collectively, the “Companies”) and, pursuant to N.C. Gen. Stat. § 62-140 and other applicable rules and regulations of the North Carolina Utilities Commission (“Commission”), hereby request approval of the Companies’ proposed dynamic pricing offering around electric vehicle managed charging pilots (“pilot”)¹ described herein.

BACKGROUND

The mass adoption of electric vehicles (“EVs”) is expected to have major impacts for all utility customers. Through the Comprehensive Rate Review (“CRR”) and Electric Transportation Stakeholder Collaborative (“ET Collaborative”), the Companies and stakeholders discussed how managed charging can create benefits for both EV owners and non-EV owners. Managed charging is a process during which charging is paused prior to a full charge or the desired EV battery level of charge. Following discussions with various

¹ DEC and DEP will each operate a pilot in their respective service territories; for simplicity, this Joint Application refers to the “pilot”.

stakeholders, the Companies propose a residential managed charging dynamic rate pilot that provides the customer bill simplicity and certainty, while concurrently producing advanced pricing signals and grid conditions to enable appropriate demand responses. This pilot, which will enable the Companies to gain increased knowledge of managed charging, will test novel technologies, customer acceptance, complex cost of service-based price signals, and the integration of managed charging into system resources. It is anticipated that the pilot will enhance the ability of the Companies to offer a variety of new EV pricing options without the need for a costly second meter.

The pilot will consist of up to 200 participants, last for 12 months, and cost no more than \$600,000. DEC participants will pay \$19.99 per month; and DEP participants will pay \$24.99 per month. As part of the pilot, the Companies will actively manage the charging of the enrolled vehicles and be able to schedule up to three managed charging events per month.

REASONS FOR THIS PILOT

EVs are expected to be one of the most significant drivers of load growth over the next twenty years.² Increasing the system load and simultaneously transitioning to a lower-carbon portfolio will cause increases in the proportion of capacity or demand costs, in part, because renewable energy generally has higher demand costs and lower energy costs. In DEC and DEP, demand costs account for roughly 59 percent and 49 percent, respectively, of the utilities' revenue requirement. Because demand costs correspond to system peaks

² Governor Roy Cooper's Executive Order 80 affirms North Carolina's commitment to reducing statewide greenhouse gas emissions to 40% below 2005 levels through, among other things, a call for an increase in registered, zero-emission vehicles to at least 80,000 by year 2025. Executive Order 246, issued January 7, 2022, builds upon that commitment, calling for 1,250,000 zero-emission vehicles by 2030.

and charging an EV adds demand to the system, costs will be primarily driven by peaks on the generation, transmission, and distribution systems rather than energy costs.

The cost of service for EV load will be sensitive to its effect on peaks. For example, if unmanaged EV charging occurs during or near the coincident peak, the utility will need to build or obtain additional capacity resources to avoid power interruptions or damage to the system. This could result in increased costs for all customers. Conversely, if EV charging is managed effectively through a dynamic rate offering so that it does not add to system peaks, this load will be less expensive to serve both in the near- and long-term because the Companies can delay or avoid adding additional capacity resources. System assets will have a higher capacity factor, meaning the system is used more efficiently, and these savings will be shared among both EV drivers and non-EV drivers. Additionally, because generation assets operating in non-peak times have a lower carbon intensity than peak times, particularly in the winter, any effort to shift load away from peaks will also create environmental benefits.

The ongoing CRR has allowed for in-depth discussion of various EV pricing alternatives. While opinions vary as to how best to accommodate needs of this emerging customer segment, stakeholders generally agree that a utility-managed program would provide system and environmental benefits while, at the same time, supporting EV adoption. The proposed pilot illustrates the Companies' continuing commitments to incorporate stakeholder feedback and specifically addresses portions of the recent Memorandum of Understanding with Vote Solar, which aims to encourage the

development of various pilot programs that optimize the capability of Grid Improvement Plan investments to support greater utilization of Distributed Energy Resources.³

The EV market is currently nascent, and for much of the population customer charging patterns have not yet been established. This affords a unique opportunity to impact customer expectations, technology adoptions, and behaviors to ensure that EV charging is cleaner and less expensive. As the Commission noted in its November 24, 2020 *Order Approving Electric Transportation Pilot, in Part*, Docket Nos. E-2, Sub 1197 and E-7, Sub 1195 (“November 24, 2020 Order”), “There is general agreement that there are many potential benefits to electric ratepayers and society at large in the transition from gasoline- and diesel-powered vehicles to electric transportation.”⁴ As EV adoption grows, behaviors and customer expectations will solidify, making it more difficult or perhaps impossible to implement mass marketing efforts that incentivize behaviors that produce a more beneficial outcome, i.e., EV charging that is done with cleaner, less-expensive electricity. Therefore, moving forward quickly with this pilot is critical to ensure that EV load is beneficial to the system and does not impede the transition to a cleaner energy future.

Additionally, as the Commission also stated in its November 24, 2020 Order, “Focused pilot programs can serve the purpose of expanding this charging infrastructure while allowing the utility to collect data on the impact of this new electric usage on its system.”⁵ Managed charging, as will be tested in this pilot, could create incremental

³ DEC’s and DEP’s Memorandum of Understanding with Vote Solar, filed Feb. 10, 2022 in Docket Nos. E-7, Sub 1214 and E-2, Sub 1219.

⁴ November 24, 2020 Order at 16.

⁵ Id.

benefits over other programs addressing time-of-use (“TOU”) or even critical peak pricing (“CPP”) options. Any price signal incorporated into end-use rate design relies on the customer to respond in a certain way. However, a dynamic rate offering featuring a utility-controlled, managed charging component would result in a firmer capacity value because the utility is directly managing charging patterns. Additionally, TOU and more dynamic rate designs, such as TOU-CPP, are simplified to facilitate customers’ response. In contrast, because utility-managed charging takes place without customer action beyond participation, interventions in EV charging can be shorter, more targeted, and more dynamic. The Companies have the capability to understand system operations and optimize events on a day-ahead, hour-ahead, or even minute-ahead basis, more so than any traditional rate schedule would ever allow. Specific local events can be incorporated on a more granular basis.

PILOT DETAILS

The Companies will partner with automotive original equipment manufacturers, BMW of North America, LLC; Ford Motor Company; General Motors, LLC; and American Honda Motor Co., Inc. (collectively referred to as “OEMs”), to test the Open Vehicle Grid Integration Platform (“OVGIP”). OVGIP was jointly developed by the OEMs and the Electric Power Research Institute, dating back to 2012. The OVGIP, owned and operated by the OEMs, establishes a two-way utility interface that applies utility industry communications standards and provides interoperability with the OEMs’ vehicle telematics application. The technology allows utilities to see charging activity, battery percentage (state of charge), or call demand response events. Given the innovative nature of this proposed pilot and the potential to provide valuable knowledge, information, and

increased expertise, the OEMs have agreed to help fund the pilot. This creates a unique opportunity for the Companies to learn more about EV operation in North Carolina, their impact on the system, and utility-OEM partnerships, at less cost to utility customers.

The pilot will consist of up to 100 customers each in DEC and DEP, but a minimum of 50 customers in each company's service area, subscribing to a fixed monthly rate for their at-home EV charging. The pilot will be 12 months long, starting approximately 60 days after Commission approval. To secure adequate participation, however, the Companies may recruit customers between the time of approval and official launch. The Companies will file a final report detailing the results of their respective pilots within six months of their end.

In addition to the pilot participants, the OEMs will simultaneously operate a control group by recruiting up to ten (10%) percent of the total pilot participants in DEC's and DEP's respective service areas. The control group will maintain complete charging autonomy, with no managed charging activities by the Companies. The control group participants will share all charging information through the OVGIP and will be compensated for their data. The Companies and OEMs have agreed to and propose an incentive of \$50 per control group participant. A small sample of participants will receive a revenue-grade meter to validate the telematics information received from enabling telematics platforms.

Customers will need to provide proof of EV ownership and the ability to charge their EV from their primary residential premise. DEC customers will pay a fixed monthly rate of \$19.99; DEP customers will pay a fixed monthly rate of \$24.99. This fixed monthly rate will apply only to the customer's EV charging load, while the rest of the electric

consumption for their home will be billed separately. For the purposes of this initial pilot, there will only be one fixed price for each utility, and only plug-in EVs from the approved list provided by the OEMs will be allowed to participate.⁶

All active participants must allow the Companies to actively charge their vehicle, utilizing OEM charge management processes. Actively charging enables the Companies to shape the EV charging patterns to ensure charging occurs during low cost, environmentally friendly periods, and that adequate charge levels will be reached by a designated time set by the customer. Initially, the pilot will enable the utility to pause charging for periods of no more than four hours for three times per month. Participants will receive twelve hours advance notice that a managed charging event will occur. Participants will have the ability to opt out of managed charging events two times during the pilot, notwithstanding an emergency weather event. Any participant who opts out of more than two managed charging events may be removed from the pilot at the Companies' discretion. As the pilot progresses, additional demand response test cases could be identified since this rate structure gives the Companies and OEMs the opportunity to test different strategies around reducing peak load without impacting the customers' bills.

The proposed subscription rate is a fixed price per EV. If a customer has two EVs at one premise, two subscriptions would be required. Any participant using more than 800 kWh per month for EV charging will receive a notice that they have consumed a potentially excessive amount of energy for one vehicle and should reduce their consumption, or risk being removed from the pilot. Any participant who receives three notices for consuming more than 800 kWh may be removed from the pilot at the Company's discretion. Any

⁶ See Exhibit A for the approved list of eligible EV models.

participant consuming more than 1,200 kWh in any month may also be removed from the pilot immediately at the Company's discretion.

To ensure the Companies can offer an attractive fixed rate, provide an incentive for beneficial load shaping and ensure non-participants do not experience undue cost shifts from this pilot, the Companies will utilize the Unit Cost Mechanism ("UCM"). The UCM methodology permits simplified pricing to customers while exposing the below-the-line portion of the utility to a high degree of dynamic price signal complexity. The UCM is based on the utility's unitized cost of service and is designed to ensure that the remittance of payment to the utility from a utility's below-the-line program covers the cost to serve its participants. By utilizing UCM accounting, risk and reward of managing load to cost to serve is transferred from the above-the-line utility to the below-the-line entity managing the program.

Combined with fixing the price to the customer, this mechanism will shift the risk of the managed charging from the customer to the Companies. This methodology will also help assure participants receive an attractive fixed price for charging regardless of the Companies' success in shaping their load and creating system benefits. At the same time, the Companies are incentivized to maximize the performance of the load shaping and to reduce the impact of EV charging on the grid. As previously noted, non-participants will also benefit from this pilot because utility management can help optimize system efficiency by ensuring incremental EV load is served during non-peak periods when existing capacity resources are available. This rate structure also helps ensure that each customer covers its cost to serve. To the extent peak prediction and charging management techniques are unsuccessful, the Companies will absorb any gaps in cost to serve.

The OEMs, collectively representing the OVGIP, and the Companies are proposing a collaborative cost-sharing approach for the pilot. The OEMs have agreed to absorb internal costs, such as customer outreach, marketing, enrollment, data costs from vehicle-cloud, data management/reporting to OVGIP, and IT/software engineers. The cloud-hosting costs from the technical partners who operate the OVGIP will be passed through to the Companies. This cost sharing approach significantly reduces program costs to the Companies and creates a unique opportunity for North Carolina to gain valuable insights and knowledge about EVs and potential future programs. Working collaboratively with the OEMs also allows for more targeted marketing to eligible participants because the OEMs will have existing relationships with their EV customers.

If fewer than 100 participants of OEM customers participate in this pilot, the Companies may partner with another entity to use telematics for up to an additional 100 other vehicles not supported by the OVGIP. The alternative approach would also have a control group of ten percent, like the control group for the OVGIP customers, including the same incentives. The only difference for these participants would be the telematics solution. All other aspects of the pilot would be the same. If the Companies exercise this option, a revised tariff will be filed reflecting that customers with an EV manufactured by a company other than the OEMs may participate using an identified telematics solution.

The total estimated cost for the Companies for this 12-month pilot with up to 200 participants is no more than \$600,000, divided proportionally between the Companies.⁷ In addition to the cloud-hosting costs described above, this total estimated cost includes all other program costs such as the Companies' administrative costs, IT, billing, marketing,

⁷ This cost estimate is for a pilot with the OVGIP OEM participants only. If the additional telematics solution is pursued, the incremental cost will be determined via RFP.

evaluation measurement and verification, and the development of an Open Automated Demand Response (“OpenADR”) interface.⁸ The Companies intend to recover the cost for this pilot through base rates included in the Companies’ respective general rate cases. The proposed tariffs for DEP’s and DEC’s Electric Vehicle Managed Charging Pilot are attached to this Application as Exhibits B (DEC) and C (DEP).

PILOT OBJECTIVES

The pilot will explore and study three major categories of residential at-home EV charging: 1) EV technologies; 2) customer acceptance; 3) and customer interest in new rates designs like subscription pricing.

1. **EV Technologies** – The pilot will study and test new technologies for measuring and managing EV load. Understanding technical abilities and limitations of these technologies will be critical to:

- *Avoiding expensive metering upgrades* – The pilot will allow the Companies to test if accurate data can be collected without creating a new point of delivery, installing a second meter or adding other hardware to the home. This cost avoidance is critical not only for innovative offerings, such as EV subscription pricing, but for other concepts that received widespread support in the CRR, for example EV only TOUs.
- *Understanding how EV load can be shaped* – The Companies will test how to manage EV load to create system benefits locally and system-wide, including pausing charging at different periods of time due to system or local conditions. The technology to manage EV charging is still nascent and is further complicated by

⁸ OpenADR, founded in 2010 by industry stakeholders to facilitate broader use of DR through simplified implementation, is the communication protocol utilized by OVGIP. It is a secure two-way information exchange model that standardizes the message format used for DR management so that dynamic price and reliability signals can be exchanged in a uniform and interoperable fashion among utilities.

the sheer number of EV manufacturers and EV models either already on the market or expected to enter the market soon. This pilot will allow the Companies to test these technologies to understand their reliability, accuracy, speed, and magnitude of potential load reductions.

- *Testing communication systems* – To create system benefits from managed EV charging, the EV load not only needs to be shaped, but also coordinated with the utility’s operations to ensure load is being reduced at the correct times. Testing if managed EV charging can be used to consistently reduce system peaks is key to this pilot. The pilot will enable the Companies to test how all these systems may coordinate to create firm capacity and optimize the grid.
- *Mapping North Carolina specific EV load shapes* – This pilot will provide an additional data source for EV load shapes that could be utilized for several purposes, including system planning and rate design analyses. This pilot will provide data that is North Carolina specific and will improve upon currently available data.
- *Setting the stage for further testing* – This pilot will be an initial and essential step in testing technologies that can solve the challenges listed above. Through this pilot, the Companies aim to take a significant step forward to more sophisticated managed charging programs. The Companies know they must be innovative to meet legislative, regulatory and customer goals, as well as their own goals, for a cleaner energy future. For example, the Companies are interested in how managed charging can not only provide generation capacity savings, but also distribution capacity savings (i.e., lowering circuit-level peaks).

2. **Customer Acceptance** – The goal of any dynamic rate pilot associated with shifting load and reducing system peaks would be to achieve the maximum system benefits with the minimum customer inconvenience. The pilot enables the Companies to understand the customer acceptance of “behind the scenes” management of at-home EV charging.

Some of the questions include:

- How inconvenient are managed charging events for customers?
- Does the time of day when the managed charging event occurs affect customer participation and satisfaction?
- How many managed charging events are customers willing to allow before their satisfaction is impacted?

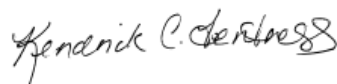
3. **Customer Interest in Subscription Pricing** – Potential EV purchasers are concerned about how their new EV will impact their electricity bill. Similarly, existing EV drivers may be looking for ways to reduce the cost of charging at home or want to reduce volatility in their electricity bill. Finally, customers may want to optimize their charging patterns to maximize environmental benefits. For these reasons, the Companies believe there is considerable interest in this type of program offering. This pilot will test the level of customer interest that currently exists.

REQUEST FOR APPROVAL

The Companies respectfully request approval of the Electric Vehicle Managed Charging Pilot to begin approximately 60 days following Commission approval. The Companies also request that the pilot have an approved duration of 12 months. If the pilot is successful, the Companies will evaluate and report on the results and may request Commission approval to expand the pilot or terminate the pilot in favor of a full-scale rate offering that the Companies offer to effectively reduce peak loads.

WHEREFORE, the Companies respectfully request that the Commission issue an Order approving the Electric Vehicle Managed Charging Pilot as outlined herein.

Respectfully submitted this 11th day of February, 2022.



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*ATTORNEYS FOR DUKE ENERGY
CAROLINAS, LLC AND DUKE ENERGY
PROGRESS, LLC*

Exhibit A

BMW	i3 and i3s (2014-) i8 (2014-) X5 40e (2015-) 530e (2017-) 330e (2015-2018, 2020) X3 30e (2021)
Ford	Escape Plug-In Hybrid Ford Mustang Mach-E Ford F150 Lightning (Q2 2022) Ford Transit (Q2 2022)
General Motors	Chevrolet Volt (2016-2019) Chevrolet Bolt (2017-) Chevrolet Bolt EUV (2022-) GMC Hummer Cadillac Lyriq
Honda	Honda Clarity

Additional new release EVs manufactured by the participating OEMs may be eligible to participate in the pilot if available for purchase prior to the end of the pilot recruitment period.

ELECTRIC VEHICLE MANAGED CHARGING PROGRAM (NC Pilot)

PURPOSE

The purpose of this pilot program is to gain increased knowledge of managed charging and test novel technology, customer acceptance, complex cost of service-based price signals and the integration of managed charging into system resources.

AVAILABILITY (North Carolina Only)

Available on a limited and voluntary basis to individually metered residential customers receiving concurrent service on the RS, RS-TC, RE, RE-TC, or ES residential rate schedules and who own or lease an eligible electric vehicle (EV) manufactured by one of the following companies: BMW of North America, LLC, Ford Motor Company, General Motors, LLC, and American Honda Motor Co., Inc (individually referred to as "OEM," or collectively as "OEMs").

The pilot will be limited to 100 customers selected on a first come, first served basis. The Company will, in its discretion, accept new participants into this pilot for up to 60 days after the initial effective date of this pilot, or until the program is fully subscribed, whichever comes first. Notwithstanding the date of such closure of the pilot to new participants, pilot participants will continue to be served under the terms of the pilot, until it expires, as such may be amended from time to time.

The terms of the pilot allow the participant to participate with only one EV; if a participant has multiple EVs and wants more than one EV to be on the managed charging rate, the participant must subscribe each EV separately and pay a separate managed charging rate for each EV.

RATE

The standard subscription rate for EV managed charging under this Rider is \$19.99 per month, which includes applicable riders, adjustments, and surcharges. The participant will still pay the applicable securitization riders and sales tax in addition to the subscription rate.

The participant's EV charging usage in kilowatt-hours, as measured by the Company, will be segregated from the participant's non-EV charging usage for purposes of calculating the energy charge in the participant's electricity bill under the applicable rate schedule. Participant's non-EV charging usage will be billed in accordance with the standard energy charges in the participant's applicable rate schedule.

MANAGED CHARGING TERMS AND CONDITIONS

The participant agrees to the following terms and conditions:

1. The participant will agree to the terms and conditions that specify the monthly subscription rate that the participant will be required to pay, and, as applicable, all requirements associated with allowing control of the charging patterns.
2. The term of the pilot will be up to twelve (12) months from the effective date of this pilot. At the end of the pilot, the participant will incur EV charging costs based on the applicable residential schedule.
3. The participant will only have one (1) EV per subscription rate.
4. The participant gives the Company permission to actively charge the vehicle. Active charging is defined as the Company's right to shape the charging pattern to reach adequate charge levels by a time designated by the driver.
5. The participant gives the Company permission to call a managed charging event. A managed charging event will pause charging due to system needs, regardless of state of charge. The participant will receive communication twelve (12) hours prior to the time the managed charging event will take place.
6. The Company will pause the charging for no more than four (4) hours at a time, no more than three (3) times a month.
7. The participant may opt-out of the Company's managed charging event two (2) times during the pilot length. If the participant opts out of more than two (2) managed charging events, they may be removed from the pilot at the Company's discretion.
8. If a participant uses more than 800 kWh per month for electric vehicle charging, a notice will be issued. If the participant receives more than three notices, they may be removed from the pilot at the Company's discretion.

ELECTRIC VEHICLE MANAGED CHARGING PROGRAM (NC Pilot)

- 9. If the participant uses more than 1,200 kWh per month for electric vehicle charging, they may be removed from the pilot without notice at the Company’s discretion.
- 10. Each OEM will present its applicable terms and conditions related to use of customer charging data and charge management activities to the participant during the enrollment process.

LIST OF ELIGIBLE VEHICLES

- BMW of North America, LLC
 - i3 and i3s (2014-)
 - i8 (2014-)
 - X5 40e (2015-)
 - 530e (2017-)
 - 330e (2015-2018, 2020)
 - X3 30e (2021)
- Ford Motor Company
 - Escape Plug-In Hybrid
 - Ford Mustang Mach-E
 - Ford F150 Lightning
 - Ford Transit
- General Motors, LLC
 - Chevrolet Volt (2016-2019)
 - Chevrolet Bolt (2017-)
 - Chevrolet Bolt EUV (2022-)
 - GMC Hummer
 - Cadillac Lyriq
- American Honda Motor Co., Inc.
 - Honda Clarity

EQUIPMENT INSPECTION AND SERVICING

The Company or its agents shall have the right of ingress and egress to participant’s premises at all reasonable hours for the purpose of inspecting Company's wiring and apparatus; changing, exchanging, or repairing its property, as necessary; or removing its property after termination of service. Company and Participant shall schedule a convenient time for such purposes whenever it is necessary to service Company’s equipment installed inside the residence. If any tampering with Company-owned equipment occurs, Company may adjust the billing and take other action in accordance with the Rules and Regulations of the North Carolina Utilities Commission and the laws of the State of North Carolina as applicable to meter tampering.

PILOT PERIOD

The Pilot Period shall be up to twelve (12) months from the effective date of this pilot. Participant or Company may terminate participation under this pilot by providing 30 days written prior notice to the other party. Termination will be effective with the next billing cycle.

SALES TAX

To the above charges will be added any applicable North Carolina Sales Tax.

COMPANY RETENTION OF BENEFITS

Participant bill certainty and other considerations offered under the terms of this pilot are understood to be an essential element in

ELECTRIC VEHICLE MANAGED CHARGING PROGRAM (NC Pilot)

the participant's decision to participate in the pilot. Upon payment of these considerations, Company will be entitled to any and all environmental, energy efficiency, and demand reduction benefits and attributes, including all reporting and compliance rights, associated with participant's participation in the pilot.

GENERAL

Services and offerings under this pilot are subject to the authority of the North Carolina Utilities Commission and are subject to changes or other modifications lawfully made thereby.

PAYMENT

Bills under this Schedule are due and payable on the date of the bill at the office of the Company. Bills are past due and delinquent on the twenty-fifth day after the date of the bill. If any bill is not so paid, the Company has the right to suspend service. In addition, all bills not paid by the twenty-fifth day after the date of the bill shall be subject to a one percent (1%) late payment charge on the unpaid amount. This late payment charge shall be rendered on the following month's bill and it shall become part of, and be due and payable with, the bill on which it is rendered.

**ELECTRIC VEHICLE MANAGED CHARGING
PROGRAM MCEV-1 (NC Pilot)**

PURPOSE

The purpose of this pilot program is to gain increased knowledge of managed charging and test novel technology, customer acceptance, complex cost of service-based price signals and the integration of managed charging into system resources.

AVAILABILITY (North Carolina Only)

Available on a limited and voluntary basis to individually metered residential customers receiving concurrent service on the RES, R-TOU, or R-TOU-CPP residential rate schedules and who own or lease an eligible electric vehicle (EV) manufactured by one of the following companies: BMW of North America, LLC, Ford Motor Company, General Motors, LLC, and American Honda Motor Co., Inc (individually referred to as "OEM," or collectively as "OEMs").

The pilot will be limited to 100 customers selected on a first come, first served basis. The Company will, in its discretion, accept new participants into this pilot for up to 60 days after the initial effective date of this pilot, or until the program is fully subscribed, whichever comes first. Notwithstanding the date of such closure of the pilot to new participants, pilot participants will continue to be served under the terms of the pilot, until it expires, as such may be amended from time to time.

The terms of the pilot allow the participant to participate with only one EV; if a participant has multiple EVs and wants more than one EV to be on the managed charging rate, the participant must subscribe each EV separately and pay a separate managed charging rate for each EV.

RATE

The standard subscription rate for EV managed charging under this Rider is \$24.99 per month, which includes applicable riders, adjustments, and surcharges. The participant will still pay the applicable securitization riders and sales tax in addition to the subscription rate.

The participant's EV charging usage in kilowatt-hours, as measured by the Company, will be segregated from the participant's non-EV charging usage for purposes of calculating the energy charge in the participant's electricity bill under the applicable rate schedule. Participant's non-EV charging usage will be billed in accordance with the standard energy charges in the participant's applicable rate schedule.

MANAGED CHARGING TERMS AND CONDITIONS

The participant agrees to the following terms and conditions:

1. The participant will agree to the terms and conditions that specify the monthly subscription rate that the participant will be required to pay, and, as applicable, all requirements associated with allowing control of the charging patterns.
2. The term of the pilot will be up to twelve (12) months from the effective date of this pilot. At the end of the pilot, the participant will incur EV charging costs based on the applicable residential schedule.
3. The participant will only have one (1) EV per subscription rate.
4. The participant gives the Company permission to actively charge the vehicle. Active charging is defined as the Company's right to shape the charging pattern to reach adequate charge levels by a time designated by the driver.
5. The participant gives the Company permission to call a managed charging event. A managed charging event will pause charging due to system needs, regardless of state of charge. The participant will receive communication twelve (12) hours prior to the time the managed charging event will take place.
6. The Company will pause the charging for no more than four (4) hours at a time, no more than three (3) times a month.
7. The participant may opt-out of the Company's managed charging event two (2) times during the pilot length. If the participant opts out of more than two (2) managed charging events, they may be removed from the pilot at the Company's discretion.
8. If a participant uses more than 800 kWh per month for electric vehicle charging, a notice will be issued. If the participant receives more than three notices, they may be removed from the pilot at the Company's discretion.
9. If the participant uses more than 1,200 kWh per month for electric vehicle charging, they may be removed from the pilot without notice at the Company's discretion.

ELECTRIC VEHICLE MANAGED CHARGING
PROGRAM MCEV-1 (NC Pilot)

10. Each OEM will present its applicable terms and conditions related to use of customer charging data and charge management activities to the participant during the enrollment process.

LIST OF ELIGIBLE VEHICLES

- BMW of North America, LLC
 - i3 and i3s (2014-)
 - i8 (2014-)
 - X5 40e (2015-)
 - 530e (2017-)
 - 330e (2015-2018, 2020)
 - X3 30e (2021)
- Ford Motor Company
 - Escape Plug-In Hybrid
 - Ford Mustang Mach-E
 - Ford F150 Lightning
 - Ford Transit
- General Motors, LLC
 - Chevrolet Volt (2016-2019)
 - Chevrolet Bolt (2017-)
 - Chevrolet Bolt EUV (2022-)
 - GMC Hummer
 - Cadillac Lyriq
- American Honda Motor Co., Inc.
 - Honda Clarity

EQUIPMENT INSPECTION AND SERVICING

The Company or its agents shall have the right of ingress and egress to participant's premises at all reasonable hours for the purpose of inspecting Company's wiring and apparatus; changing, exchanging, or repairing its property, as necessary; or removing its property after termination of service. Company and Participant shall schedule a convenient time for such purposes whenever it is necessary to service Company's equipment installed inside the residence. If any tampering with Company-owned equipment occurs, Company may adjust the billing and take other action in accordance with the Rules and Regulations of the North Carolina Utilities Commission and the laws of the State of North Carolina as applicable to meter tampering.

PILOT PERIOD

The Pilot Period shall be up to twelve (12) months from the effective date of this pilot. Participant or Company may terminate participation under this pilot by providing 30 days written prior notice to the other party. Terminations will be effective with the next billing cycle.

SALES TAX

To the above charges will be added any applicable North Carolina Sales Tax.

COMPANY RETENTION OF BENEFITS

Participant bill certainty and other considerations offered under the terms of this pilot are understood to be an essential element in the participant's decision to participate in the pilot. Upon payment of these considerations, Company will be entitled to any and all environmental, energy efficiency, and demand reduction benefits and attributes, including all reporting and compliance rights, associated with participant's participation in the pilot.

ELECTRIC VEHICLE MANAGED CHARGING
PROGRAM MCEV-1 (NC Pilot)

GENERAL

Services and offerings under this pilot are subject to the authority of the North Carolina Utilities Commission and are subject to changes or other modifications lawfully made thereby.

PAYMENT

Bills under this Schedule are due and payable on the date of the bill at the office of the Company. Bills are past due and delinquent on the twenty-fifth day after the date of the bill. If any bill is not so paid, the Company has the right to suspend service. In addition, all bills not paid by the twenty-fifth day after the date of the bill shall be subject to a one percent (1%) late payment charge on the unpaid amount. This late payment charge shall be rendered on the following month's bill and it shall become part of, and be due and payable with, the bill on which it is rendered.

Effective for service rendered on and after _____
NCUC Docket No. E-2, Sub 1291