

**BEFORE THE NORTH CAROLINA UTILITIES COMMISSION
DOCKET NO. E-2, SUB 1291
DOCKET NO. E-7, SUB 1266**

**In the Matter of)
Application by Duke Energy Carolinas,) NCSEA’S INITIAL
LLC and Duke Energy Progress, LLC for) COMMENTS
Approval of Proposed Transportation)
Project)**

NCSEA’S INITIAL COMMENTS

NOW COMES the North Carolina Sustainable Energy Association (“NCSEA”), an intervenor in the above-captioned docket, and, pursuant to the North Carolina Utilities Commission’s (the “Commission”) February 22, 2022 *Order Requesting Comments on Proposed Electric Vehicle Managed Charging Pilot Program* (“Order”) and the subsequent order extending time for comments, offers the following initial comments in response to *Duke Energy Carolinas, LLC’s and Duke Energy Progress, LLC’s Application for Approval of Electric Vehicle Managed Charging Pilots* (“Application”).

NCSEA supports the deployment of electric vehicles (“EVs”), EV charging infrastructure, and EV-specific rate designs. The mass adoption of EVs, and the accompanying utility programs approved and including Commission directives, will help to support the statutory goals of SL 2021-165. EV adoption and accompanying programs, such as those approved by the Commission, will help meet the statutory requirement to reduce and eventually eliminate carbon emissions in the state. NCSEA has long been a proponent of EV-specific rate designs and applauds the efforts of Duke Energy Progress, LLC (“DEP”) and Duke Energy Carolinas, LLC (“DEC”) (DEP and DEC collectively “Duke”) to propose a managed or “smart” charging pilot (herein referred to as the “Smart Charging Pilot Proposal”).

As outlined more fully below, there remain some lingering questions and concerns about the Smart Charging Pilot Proposal. Furthermore, and illustrative of NCSEA’s general support for this concept, NCSEA believes there are multiple iterations of programs that could extend from this managed charging pilot, and as explained further below, believes the Smart Charging Pilot Proposal could be the first of many programs that fit the needs of both EV users and the ratepayers of North Carolina.

I. FLEET ELECTRIFICATION

NCSEA is encouraged by the proposal for managed or “smart” charging. NCSEA would encourage Duke to continue to develop and expand these types of demand response programs. One area NCSEA would encourage Duke (and all utilities) to explore is managed fleet charging. As Governor Cooper’s Executive Order 80¹ and Executive Order 246² enumerate, the future of electric vehicles in North Carolina will build quickly and will likely include state owned vehicle fleets. NCSEA believes that Duke should capitalize on the momentum afforded by the Governor’s Executive Orders and work with the North Carolina Department of Transportation and the North Carolina Department of Environmental Quality (and any other state agencies interested) to begin educating and drawing up plans for smart charging. Industry reports³ suggest that a large hurdle to fleet electrification is education and base knowledge for fleet owners. Other utilities have successfully offered managed fleet charging.⁴ Duke should work with the appropriate state

¹ <https://governor.nc.gov/media/967/open> (“Executive Order 80”).

² <https://governor.nc.gov/media/2907/open> (“Executive Order 246”).

³ Lily Paul and Maureen Marshall, *Not Just Smart: The Importance of Managed Charging*, CALSTART/Amply Power (December 2021) (Available at: <https://calstart.org/wp-content/uploads/2022/01/Managed-Charging-Paper-Final.pdf>)

⁴ See, *Comprehensive Guide to Electric Vehicle Managed Charging*. Smart Electric Power Alliance (May 2019), p. 45. (available for complimentary download at: <https://sepapower.org/resource/a-comprehensive-guide-to-electric-vehicle-managed-charging/thank-you/>)

agencies early as the North Carolina Clean Transportation Plan is implemented to increase understanding of managed charging opportunities for fleet vehicles.⁵

II. DATA ACCESS AND COST ALLOCATIONS

The residential Smart Charging Pilot Proposal has some matters that NCSEA would like clarified. NCSEA supports the use of a control group to compare the pilot participants with the average electric vehicle owner. However, to the extent the comparison is cost based, NCSEA would recommend that the separate revenue grade meter cost and the \$50 incentive for the control group *not* be included in any financial comparison. It was unclear in NCSEA's reading of the Smart Charging Pilot Proposal application whether Duke would separate those costs for the purposes of evaluating the pilot against the control group.⁶ If included in a cost comparison, the pilot program might look more financially feasible than it is.

Further, NCSEA would suggest that Duke, upon request of the pilot participant, provide the data gathered from the participant's charging habits. The participant may then better understand his or her charging patterns in relation to stress on the grid and, should they elect to, may modify their behaviors manually should the Smart Charging Pilot program end for any reason.

III. COST PER SUBSCRIBER

Duke proposes a \$19.99 monthly fee in DEC territory and a \$24.99 monthly fee in DEP territory for subscribers to the Smart Charging Pilot Proposal.⁷ Duke does not explain how it came to those numbers in detail in the application filing, nor does it explain exactly

⁵ Executive Order 246 at 3.

⁶ Application, p. 6.

⁷ *Id.*

why the two territories have disparate monthly fees. NCSEA would like to know Duke's methodology for arriving at those numbers and why the utilities did not propose a single monthly fee amount across the two Duke territories. While a \$20 monthly charge for charging up to 800kwh⁸ may be a fair price, NCSEA questions why it is 25% more expensive in the DEP territories. It seems unlikely that the capped 100 participant pool in DEP territory would each incur an additional \$5 per month for services associated with this service. Moreover, NCSEA is concerned about projecting a disparate amount for the two different territories for a larger, non-pilot program in the future.

NCSEA recognizes that perfect is the enemy of good and would simply encourage Duke to provide in their reply comments a transparent breakdown of how these monthly fees were arrived at and why there are different amounts in the two Duke utilities in North Carolina. Further, to the extent that Duke analyzed the cost of charging per mile driven (or any other such related metrics), NCSEA would encourage Duke to file to the Commission any such analysis. NCSEA believes it would be useful for the Commission and the public at large to see any such metrics as NCSEA believes it would exhibit how much less expensive charging an electric vehicle can be versus paying for gasoline for an internal combustion vehicle.

As proposed, the Smart Charging Pilot Proposal seems to encourage participation by heavy users. If this is the case, there is certainly room for a heavy electric user profile in future charging programs and, also, users who typically drive and charge their EVs a bit less. The best way to determine this (along with other extensions of this managed charging pilot) is via transparent Duke data and analysis. Therefore, in addition to any comparisons

⁸ *Id.* at 7.

to gas use and gas price economics, NCSEA would encourage Duke to provide data gathered in this pilot and any related analysis, if approved, that might lead to more programs down the line which will incorporate different user profiles.

IV. AMOUNT ALLOWABLE TO BE CHARGED PER SUBSCRIBER

Duke proposes that pilot participants can use up to 800 kilowatt hours (“kWh”) per month. If a participant exceeds 800 kWh in a month (but not 1200 kWh), then Duke can warn the participant up to 3 times before concluding that participants time in the pilot. If a participant goes over 1200 kWh in a single month, they are subject to immediate release from the pilot.

NCSEA’s internal analysis shows that these ceilings on kilowatt hours would likely not affect most of the vehicles on Duke’s approved list. As can be seen in the table below, assuming an estimated average vehicle mile traveled (“VMT”) of 1200 miles per month, it can be determined that 800 kwh a month is not likely to be reached by most of the vehicles classified under this pilot.

Average VMT= 1200 miles a month.

Car Model (as listed in Exhibit A)	# Of kWh per 100 miles ¹	# Of kWh per 100 miles x 12* = Average kWh per month.	Range (miles)
BMW i3 and i3s (2014-)	27 kWh	324 kWh a month.	153 miles
BMW 330e (2015-2018, 2020)	56 kWh	672 kWh a month.	18 miles per charge (hybrid) but it still takes 56 kWh to charge for 100 miles.
Ford Mustang Mach-E	37 kWh	444 kWh a month.	314 miles.
Chevrolet Bolt (2017-)	28 kWh	336 kWh a month.	238 miles per charge

¹ Numbers found on the EPA Fuel Economy website <https://www.fueleconomy.gov/>

*12 being every 100 miles assuming the 1200 miles a month.

Some of the newer vehicles, such as the larger Ford F-150 Lightning, do not have sufficient public data for NCSEA to comment on whether these charging ceilings are appropriate. However, NCSEA finds it likely that (1) they are appropriate and (2) if a heavy

user needs more kWh of charging per month, then they may not be a good fit for participation in *this* program.

As mentioned above, the Smart Charging Pilot Proposal appears to be a good fit for a heavy user. NCSEA would encourage Duke to consider an even more granular “heavy user” profile for smart charging where price signals will reflect the current demand on the grid and heavy use chargers will be able to tailor their electric charging needs personally. This type of program would likely be more expensive for the utility and may cost more upfront for the potential participant, but the offset of heavy demand on the grid, especially as the EV marketplace diversifies with larger vehicles and larger electric demand, would offset those costs for the utility (and its ratepayers) and the participant could tailor their lifestyle to chase less expensive charging windows.

NCSEA would also encourage Duke to consider a secondary pilot program with lower charging ceilings or, alternatively, with granular price signals that move away from an “all you can eat” buffet style charging model. This type of secondary, or next phase, pilot program would be attractive to EV owners with lower demand profiles *or* could be used as an incentive for EV owners to use less electric and conserve. Again, NCSEA applauds the initial Smart Charging Pilot Proposal as a means of demand response but believes incorporating customer price signals may be more beneficial to the overall demand on the grid in an efficient and effective.

Different EVs and EV users will have different needs. NCSEA supports this Smart Charging Pilot Proposal as an initial proposal. It can and should be built upon. The Smart Charging Pilot Proposal will provide initial data and load profiles from the list of vehicles approved for this program, but future programs should incorporate all EVs and provide

other avenues to reduce load on the grid. Load profiles will vary between users and particular EV needs, and the demand response programs should reflect that increasing diversity.

V. **PROGRAM COST**

Duke proposes a \$600,000.00 cost cap for the Smart Charging Pilot Proposal and for those costs be included in rate base . However, while this program is a relative drop in the bucket compared to many utility programs, there are only 200 potential subscribers. Per participant, the Smart Charging Pilot Proposal costs \$3,000.00, and that does not appear to include the costs assumed by the car company partners⁹ or the monthly payments made by the participants.

Duke asserts these total program costs include “cloud-hosting costs [...] [and] all other program costs such as the Companies’ administrative costs, IT, billing, marketing, evaluation measurement and verification, and the development of an Open Automated Demand Response (‘OpenADR’) interface.”¹⁰ NCSEA has no doubt that these expenses are necessary and important to the Smart Charging Pilot Proposal, but would request Duke explain how this program can be scaled for a much larger participant pool in further, non-pilot programs. If the purpose of a pilot is, in part, to test the financial viability of a new utility program, then this program would require a sizeable demand response cost offset to pencil out as a pilot program given its relatively high per participant cost. However, if the relative costs will decrease as the participant pool grows, then NCSEA would encourage Duke to show that projection in their reply comments.

⁹ Application, p. 9.

¹⁰ Application, pp. 9-10.

Further, the costs assumed by the car companies might not be included in a future non-pilot, especially if it becomes a universal program for all EVs rather than just a select list. If that is the case, then the case for the financial viability of the program may become even more difficult to prove.

NCSEA wants to emphasize that it supports EV charging efforts and the Smart Charging Pilot Proposal is a good start. However, future success in EV charging efforts will require a ground-up buildout of EV-related tariffs and rate designs which must fit seamlessly into Duke's customer offerings without increasing the costs of the entire ratepayer base.

VI. CONCLUSION

For all the reasons set forth, NCSEA requests the Commission take into consideration its recommendations contemplated herein.

Respectfully submitted this the 18th day of April 2022.

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CERTIFICATE OF SERVICE

I hereby certify that all persons on the docket service list have been served true and accurate copies of the foregoing document by hand delivery, first class mail deposited in the U.S. mail, postage pre-paid, or by email transmission with the party's consent.

This the 18th day of April 2022.

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