

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. E-2, SUB 1197

DOCKET NO. E-7, SUB 1195

In the Matter of Application by Duke Energy Carolinas, LLC and Duke Energy Progress, LLC for Approval of Proposed Electric Transportation Pilot	}))))	REPLY COMMENTS OF ENVIRONMENTAL DEFENSE FUND
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Pursuant to the North Carolina Utilities Commission's ("Commission") July 15, 2019 Order, Environmental Defense Fund ("EDF") submits the following reply comments regarding Duke Energy's proposed electric vehicle ("EV") transportation pilot.

In its initial comments, Public Staff opposed Duke Energy's proposed EV transportation pilot on the ground that "the Companies' overall proposal does not meet the parameters of a pilot in which the Companies would undertake a proof-of-concept through a scalable project."¹ EDF submits that if Duke Energy would modify its program to offer tariffed on-bill financing for school districts and transit agencies, this would meet Public Staff's criteria of a pilot program that would demonstrate a proof-of-concept that could be carried forward to a successful scalable project. Also, the ratepayer benefits of the programs proposed by the Companies would be much larger if the Companies could offer the option for tariffed on-bill financing to recover their costs, rather than relying only on direct subsidies.

¹ *In the Matter of the Application of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC for Approval of Proposed Electric Transportation Pilot*, Docket Nos. E-2, Sub 1197 and E-7, Sub 1195 (Public Staff's Comments at 2) (July 5, 2019), available at: <https://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=758f68be-6e9d-4327-b601-18bdde4a411e>

EDF has attached an analysis of an on-bill financing program and the key findings are as follows:

Summary of Tariffed On-Bill Financing

A tariffed on-bill financing option for school districts and public transit agencies would allow them to sign up for a voluntary tariff where the utility would capitalize the upfront cost of the on-board battery and charging station for EV buses. The program could later be expanded to include other fleet operators. The terms of the tariffed on-bill program would also assure that the utility would be able to recover its costs with a charge on the fleet owner's monthly bill that is less than the estimated savings from avoided fuel and maintenance for a diesel bus. By spreading out the cost recovery for the upfront costs to span the warranty period for the battery on board the bus, tariffed on-bill financing would allow the timing of expenditures associated with EV buses to more closely mirror the timing of payments that is familiar to diesel fleet owners.

Tariffed on-bill financing would greatly reduce the upfront cost barrier faced by agencies considering the purchase of EV buses. Reducing upfront cost to the fleet owner would magnify the purchase power of public or private funds available from any source. For example, a combination of tariffed on-bill financing, Volkswagen settlement funding, and ratepayer incentives would allow school districts and public transit agencies to procure a much greater number of EV buses sooner than they would otherwise be able to buy new zero emission buses.

Details of Financing Transit Bus Upgrades with an Opt-in Tariff

As described in initial comments filed by EDF, the non-profit organization Clean Energy Works (“CEW”) offers the following description of the details and potential impacts of how an on-bill financing program would work and how it would benefit transit agencies and school districts:

First, the utility establishes a terms of service agreement (a tariff) for investing in the battery and charging station for each new EV bus sought by a transit agency in its service area. Second, the transit authority opts into a terms-of-service agreement (a tariff) that allows the utility to put a charge on the agency’s monthly bill that is capped at a level below the estimated savings (relative to the cost of diesel fuel for a diesel bus) and to recover its costs within the warranty period of the equipment it has financed. If the equipment has been maintained as per warranty conditions, the utility can call on the warranty to address upgrades that need repair or remedy.

As a result of the tariffed on-bill program, the transit authority’s upfront cost to replace a diesel bus with an EV bus would be the same as if they were buying a new diesel bus – except that the EV bus would be better. For the transit agencies that opt in, the utility pays for energy saving upgrades to the bus fleet, and the transit authority pays nothing upfront for the portion of the upfront cost premium of the zero-emission EV bus that is cost effective. The utility gains approximately \$100,000 in new sales over the life of each EV bus that displaces a diesel bus. Bus riders and communities served by both the utility and the transit agency are then spared the hazards of air pollution and the nuisance of noise pollution produced by diesel buses.

The transit authority has no loan, no lien, and no debt associated with this transaction; just lower costs of operation and a better bus fleet. When the utility recovers its costs, the monthly charges end, and when the transit agency has exhausted a battery used for on-board storage, the utility may offer to buy battery packs for second life applications for stationary storage.²

² Clean Energy Works, *Tariffed On-Bill Finance to Accelerate Clean Transit*, available at: <http://www.cleanenergyworks.org/clean-transit/>

Analysis of a Tariffed on-bill Program for Duke Energy, Starting with Transit

Cadmus completed a study for GoTriangle, a transit bus fleet owner in the Duke Energy service area, in order to explore the effect Duke Energy would have if it offered a tariffed on-bill program for the on-board battery and charger of new EV buses. The analysis found that the amount of direct subsidy funds required to overcome the upfront cost barrier facing the transit agency would fall by more than 75% if Duke Energy offered a tariffed on-bill program.

As a result of the reduction in subsidy funds required, the transit agency could leverage the state, federal, and ratepayer funds to more than quadruple the number of EV buses it could buy. For an amount of \$4.7 million in public funds over the period of 2020 to 2023, the agency could buy 15 new EV buses, but by contrast, if Duke Energy would offer a tariffed on-bill program, it would be able to buy 56 new EV buses over the same four year period with the same amount of funding.

After consultation with Duke Energy, Cadmus completed a second study to evaluate the cash flows for a tariffed on-bill program for transit buses using the same transit agency as an example for the analysis. The studies confirmed that the net cost to Duke Energy to source the capital for the tariffed on-bill program would be zero because Duke's cost of capital would be included in the project costs recovered through the on-bill cost recovery charge.

The second study also found that, for each new EV bus deployed in its service area, Duke Energy would gain new sales from the daily charging of the batteries, regardless of how the procurement of new EV buses is financed. The resulting sales are additional, and they add value to ratepayers in the form of increased grid utilization, which in turn creates a downward pressure on rates. Assuming that the EV buses are charged at the transit agency depot overnight during off-peak periods, Cadmus found that the cost of purchasing the wholesale supply for the new

transportation battery loads would be less than the revenue gained from the sale of that electricity at the transit agency's current rate.

Combining the cost of capitalizing the tariffed on-bill program and the cost of supplying electricity for additional sales, the second study by Cadmus specifically for Duke Energy found that the benefit-cost ratio would be 1.11. In addition to the benefit to Duke Energy and transit agencies, EDF recognizes the benefits to ratepayers to accelerating the deployment of EV buses for transit as described above. Tariffed on-bill financing does not transfer burden; rather it is a financial win for all stakeholders. Furthermore, the availability of a financing tool to accelerate fleet electrification would support the zero-emission vehicle deployment goals specified in Governor Cooper's Executive Order 80.

Conclusion

A tariffed on-bill financing program would meet the Public Staff's criteria for a pilot program; that is, providing a useful proof-of-concept that, if successful, could be scaled up for all customers to use. The financial analysis exploring the potential for tariffed on-bill investment for transit fleets is provided as an appendix below, and it shows the benefits to the utility and the participating customers would be positive, while not imposing new costs on other ratepayers. To EDF's knowledge, neither Duke Energy nor other utilities have tested the concept of using tariffed on-bill financing to aid school districts and transit agencies in purchasing EV buses. EDF's comments and reply comments demonstrate the benefits of such a program. For all of the above reasons, EDF requests that the Commission's Order authorize Duke Energy to implement such a tariffed on-bill financing service for school districts and transit agencies to purchase EV buses, as described in EDF's comments.

Attachments

Additional information on tariffed on-bill program design for clean transport is attached:

- Appendix A – Cadmus Report for Duke Energy On-Bill Program
- Appendix B – Clean Energy Works – Utility Tariffs for Investments in Mobile Storage
- Appendix C – FAQ: Pay as You Save (PAYS) for Clean Transport

Respectfully submitted,

/s/ Daniel J. Whittle

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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 Petition to Intervene by first class United States mail, postage prepaid, or by email transmission with the party's consent.

This 22nd day of July, 2019.

/s/ Daniel J. Whittle
