

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

In the Matter of:)
)
Application of Duke Energy Carolinas,) JOINT COMMENTS OF NORTH
LLC and Duke Energy Progress, LLC for) CAROLINA JUSTICE CENTER,
Approval of Proposed Electric Vehicle) SOUTHERN ALLIANCE FOR
Managed Charging Pilot Programs) CLEAN ENERGY, AND SIERRA
) CLUB
)

The North Carolina Justice Center (NC Justice Center), Southern Alliance for Clean Energy (SACE), and Sierra Club appreciate the opportunity to submit joint comments on the Application for Approval of Proposed Managed Charging Pilot Programs (Subscription Pilot) submitted by Duke Energy Carolinas, LLC (DEC) and Duke Energy Progress, LLC's (DEP) (together, "Duke Energy"). Pursuant to the Commission's February 22, 2022 Order Requesting Comments, the NC Justice Center, SACE, and Sierra Club were made parties to these dockets because of their prior intervention in the Electric Transportation Pilots in Docket Nos. E-2, Sub 1197 and E-7, Sub 1195.

I. Introduction

The NC Justice Center, SACE, and Sierra Club respectfully request that the Commission approve the Subscription Pilot for the explicit and limited purpose of allowing Duke Energy to gain experience with managed charging technology and procedures with no more than 100 total customers per utility. But NC Justice Center, SACE, and Sierra Club have deep concerns about this proposed rate design were it to be widely offered in its current form and therefore ask that the Commission direct the Companies to continue developing alternative managed charging or off-peak subscription options for electric vehicles (EVs). The proposed Subscription Pilot's flat monthly fee structure creates a disconnect between how much customers drive and how much they pay to power their vehicle and it does not go far enough to ensure residential EV charging occurs during off-peak periods

or aligns with high levels of renewable generation. In support of these recommendations, the NC Justice Center, SACE, and Sierra Club attach the “Review of Duke Energy’s Application for Approval of Electric Vehicle Managed Charging Pilots,” prepared by Melissa Whited and Anett Ludwig of Synapse Energy Economics, Inc. (Synapse Report) attached hereto as Attachment A.

II. Support for the Pilots Despite Concerns with the Subscription Rate as a Potential Permanent Rate Offering

Managed charging will be a critical component of integrating increasing numbers of EVs in ways that impose the least costs to the utility and its ratepayers while simultaneously reducing carbon emissions. For these reasons, it is important for Duke Energy to gain real-world experience with managed charging technology. We support this Pilot for the limited purpose of allowing the Companies to get the necessary experience with managed charging equipment and processes.

But the rate design proposed in this Pilot should not be adopted more broadly for the general public. Representatives of NC Justice Center and SACE, including Melissa Whited of Synapse, have been active participants in the Comprehensive Rate Review process. The position and concerns spelled out in these Comments and in the Synapse Report were raised in stakeholder meetings when Duke Energy presented its idea for an “all-you-can-eat” subscription rate proposal. While NC Justice Center and SACE appreciate that Duke Energy made certain modifications to its original ideas for EV subscription rates, most notably, dropping a subscription rate option without managed charging, there are fundamental design flaws with this Subscription Pilot proposal that would make it unsuitable for running as a permanent program in its current form.

Most fundamentally, the flat rate for “all you can consume” charging violates core principles of rate design by “divorc[ing] a customer’s bill from both the timing and quantity of energy consumed.” Synapse Report at 3. The Subscription Pilot cuts against other efforts by utilities around the country—and by Duke Energy—to “equip customers with more information and tools to manage their electricity and usage.” *Id.* Customers would be given “the false impression that the quantity and

timing of electricity consumption has no bearing on costs.” *Id.* Such a flat rate would conflict with other tariffs that provide sharply differentiated prices based on season and time of day and with ratepayer funded energy efficiency programs. *Id.* at 3-4.

Moreover, the Subscription Pilot does not provide sufficient guardrails for participating customers to avoid charging EVs during system peak periods, with the limited exception of three utility-controlled managed charging interruptions of up to 12 total hours per month. *Id.* at 3. Duke Energy plans to establish a “preferred schedule” under which peak charging is “minimized to the extent possible,” but customers can override that pre-set charging schedule as they wish.¹

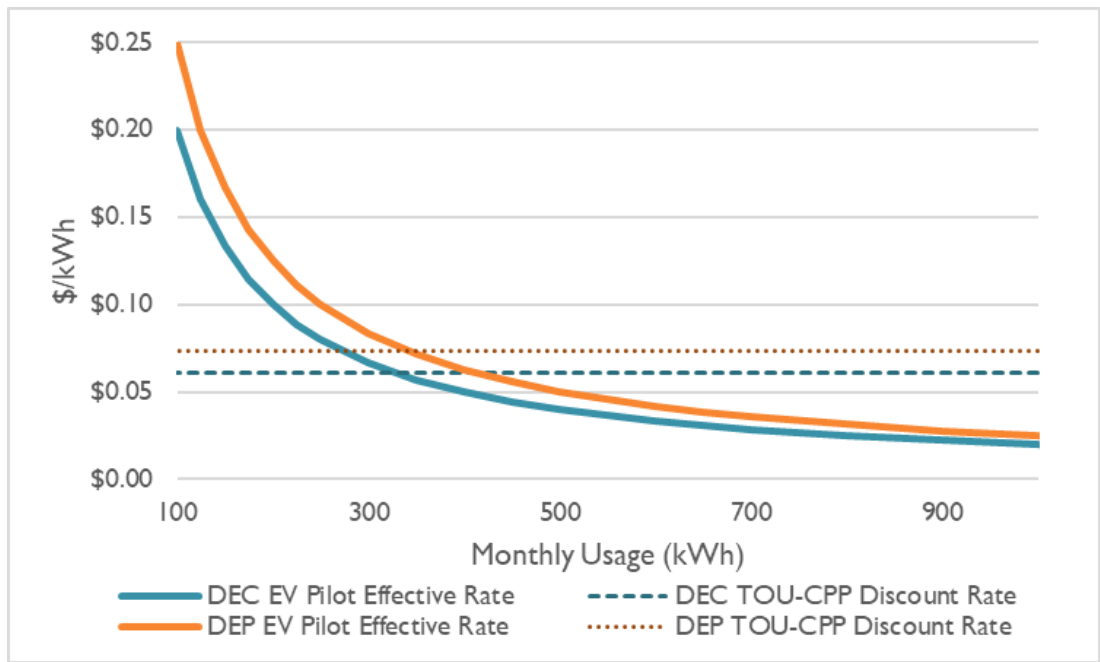
The Subscription Pilot, if expanded beyond this limited pilot, would also risk thwarting customer expectations, which would run counter to one of the goals of the Pilot. See Application at 4 (“This affords a unique opportunity to impact customer expectations, technology adoptions, and behaviors to ensure that EV charging is cleaner and less expensive.”). Duke Energy anticipates an average monthly charging amount of 225 kWh per EV in the Subscription Pilot, and yet the Companies propose allotting each customer 800 kWh of EV charging per month (with permission to go up to 1,199 kWh for up to three months without penalty). Customers who use the anticipated average would have no strong financial incentive to sign up for the Subscription Pilot, because 225 kWh/month of EV charging under prevailing Duke Energy residential rates would cost about \$21 (DEC) and \$25 (DEP), very close to the proposed monthly subscription rates.² Although the certainty of knowing monthly charging costs ahead of time would provide customers with some benefit, for many EV owners, it would not necessarily ensure that “EV charging is cleaner and less expensive” as the Pilot intends. On the other hand, if customers with large capacity EV batteries who have substantial

¹ SACE EV Managed Charging Pilot Data Request Response 1-6.

² The volumetric rate for DEC’s Schedule RS is 9.3826 cents/kWh, resulting in 225 kWh costing customers on that rate \$21.11 a month. See Schedule RS (NC) Residential Service (effective Feb. 1, 2022). The volumetric rate for DEP’s Schedule RES-72 is 11.153 cents/kWh from July through October, resulting in 225 kWh costing customers \$25.94 and is 10.652 cents/kWh from November through June, resulting in 225 kWh costing \$23.97, which averages out to about \$25 per month over the course of the year. See Schedule RES-72 (effective March 16, 2022).

commutes take advantage of the pilot and use something approaching the maximum allowable kWh each month, Duke Energy would under-recover from those customers. And it is not reasonable to anticipate that the Company could scale up a program under which it is losing money.

The Subscription Pilot would reward higher usage customers because the effective rate declines with higher usage. These effective rates are particularly stark when viewed in comparison with TOU-CPP discount rates offered by Duke Energy shown with the dotted lines in Figure 1:



Synapse Report, Figure 1, at 4. As a general matter, a person who chooses to drive a large truck or SUV would expect to pay more for fuel than a person driving the same miles in a compact, more efficient vehicle. But under this all-you-can-eat Subscription Pilot proposal, an electric Hummer—which gets about 47 miles per gallon equivalent (MPGe)—would pay the same for charging as the driver of a much smaller and more efficient Chevy Bolt—which gets 120 MPGe. Such a subscription rate does far too little to foster the economical use of electricity.

The Companies have experience with demand-response programs, such as the Bring Your Own Thermostat (BYOT) winter-focused demand response program and should treat all demand response technologies equally. In the BYOT

program, participating customers receive a rebate in exchange for allowing Duke Energy to control their thermostat during periods when the grid is constrained. The customer is not offered, however, dramatically lower electricity rates for heating and cooling their homes for the time periods when the utility is not controlling the thermostat. This would be akin to offering a flat subscription fee for HVAC use that results in customer spending the same to keep a house at 64 degrees all summer with an inefficient heat pump (other than three days a month when the air conditioning could be temporarily cycled off) as someone in the same sized house who sets their thermostat at 77 degrees with a high-efficiency heat pump. It runs counter to the good work done by Duke Energy on its efficiency and demand response programs to charge the same amount of money for using a less efficient device more often than a customer with a more efficient device that is used less frequently. Such an ill-conceived HVAC subscription program would work against the energy efficiency efforts of the Company in precisely the same ways that the proposed Subscription Rate would if it were to be offered to the general public in its current form

As noted in the Synapse report, to the extent that Duke Energy can justify offering super-low effective volumetric rates, those should be directed at low-income customers, not those who can afford EVs with the largest capacity batteries. *Id.* at 4. Because NC Justice Center, SACE, and the Sierra Club understand the importance of Duke Energy getting experience with managed charging technology and procedures and testing the equipment that will be used to allow utility control of EV charging, we support approval of the Pilots despite our concern with the underlying rate design.

III. Recommendations for Future Managed Charging or Subscription Rates

If the Companies want to offer subscription EV pricing beyond this Pilot, such subscriptions should apply only to off-peak EV charging when costs and emissions are reliably low. *Id.* at 5. On the other hand, if in future pilots the Companies want to test managed charging, which NC Justice Center, SACE, and Sierra Club support, Duke Energy should offer it in combination with a volumetric

rate, learning from the experiences of utilities in Texas, Vermont, and California that have successfully implemented such programs. *Id.* at 6-7.

As noted in the Synapse Report, these recommendations are consistent with approaches that have been undertaken by utilities in other jurisdictions. NC Justice Center, SACE, and Sierra Club are willing to work with Duke Energy and other stakeholders to develop managed charging rates that are based on volumetric pricing or subscription models for off-peak charging for broader deployment following the Company's experience with adopting managed charging technology in this pilot.

IV. The Commission Should Establish Specific Reporting Metrics for the Post-Pilot Report from the Companies.

The Companies have committed to preparing and filing with the Commission "a final report detailing the results of their respective pilots within six months of their end." Application at 6. While NC Justice Center, SACE, and Sierra Club agree that it is appropriate to require the Companies to prepare a post-pilot report by a date-certain, we urge the Commission to impose specific parameters on that report at the outset of this process. It does not appear that the Companies have publicly articulated what specific data points or program assessments they intend to include in those 6-month reports. We believe such specific direction is appropriate, consistent with prior Commission orders,³ and will ensure that information and lessons learned through the Pilot are made available to the Commission and Stakeholders in a way that can help inform future EV rates related to managed EV charging, subscription fee structures, and customer satisfaction.

³ The Commission's November 24, 2020 Order on the Phase I pilot states that for future proposals, "the Commission will require" that those programs are designed to meet certain criteria, including stating that "[e]ach pilot program should have clearly defined goals, metrics for evaluating performance, and a verification process." North Carolina Utility Commission, In the Matter 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, Order Approving Electric Transportation Pilot, In Part, at 20-21 (Nov. 24, 2020).

We recommend the Commission require the Companies to include, at a minimum, the following information and Company assessments in their 6-month reports:

A. Data:

- Number of customers enrolled in the pilot by month
- Average hourly energy consumption (kWh) per customer (distinguished by weekday vs. weekend)
- Average and median monthly energy (kWh) consumed per customer
- Total cost to serve those customers related to the pilot
- Aggregated data on number and duration of “managed charging events”
- Date and time of each “managed charging event”
- Number of times customers “opted-out” of “managed charging events”
- Number of times customers exceed the 800 kWh and 1200 kWh monthly thresholds and the number of customers, if any, removed from the pilot
- The alignment (or discrepancies) between the charging data reported by the car/charger telematics versus and that reported by utility-grade meters, for the applicable sub-group (see Application at 6)

B. Companies’ assessments:

The Companies should be required to assess, at a minimum, each of the aspects described in the “pilot objectives” section of the Application, related to EV technologies and the Companies’ ability to shape EV loads, customer acceptance of utility-managed charging, and customer interest in new rate designs, including flat monthly fees. Application at 10-12. Additionally, NC Justice Center, SACE, and Sierra Club recommend the Commission require the Companies to include the following assessments in the 6-month reports:

- Information learned from the “control group” that will operate without managed charging activities by the Companies, including hourly loads (See Application at 8).

- The Companies' assessment of the accuracy of telematics and the need (or lack thereof) for utility-grade meters to accurately measure residential EV charging.
- The Companies' assessment of the difficulty of managing charging during the Pilot to match times where there is a high level of renewable energy generation on the grid.
- The Companies' assessment of the difficulty of scaling its managed charging interventions to match times where there is a high level of renewable energy generation on the grid, as would be necessary at higher levels of EV adoption.
- The Companies' assessment of how effectively its managed charging Pilot allowed it to reduce peak demand on the grid, and whether such programs are easily scalable at higher levels of EV adoption.
- Whether customer average monthly energy consumption matched the Companies' predictions.
- To the extent the Companies can tell, whether customers participating in the pilot drove more miles than average North Carolinians, and whether the flat monthly fee structure impacted customer driving habits.
- The Companies' Application states that "because utility-managed charging takes place without customer action beyond participation, interventions can be shorter, more targeted, and more dynamic." Application at 5. The Companies should report on how they applied (and learned from) these "shorter, more targeted, and more dynamic" interventions, if at all, beyond the "managed charging events," which are limited to four-hour pauses in charging up to three times per month, scheduled at least 12 hours ahead of time.
- What "specific local events," if any, led to utility-managed interventions, and whether those interventions achieved the desired result. Application at 5.
- What the Companies learned about their "capability to understand system operations and optimize events on a day-ahead, hour-ahead, or even minute-ahead basis." Application at 5.

V. Conclusion

The NC Justice Center, SACE, and Sierra Club respectfully request that the Commission:

(1) Approve the Subscription Pilot for the explicit purpose of allowing Duke Energy to gain experience with managed charging technology and procedures;

(2) Direct Duke Energy to continue developing alternative managed charging or off-peak subscription options for electric vehicles (EVs) that address the concerns raised in these Joint Comments; and

(3) Direct Duke Energy to include, at a minimum, the information requested in these Joint Comments in their assessment reports for this Pilot.

Respectfully submitted this the 18th day of April, 2022.

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CERTIFICATE OF SERVICE

I certify that a copy of the foregoing Joint Comments on behalf of North Carolina Justice Center, Southern Alliance for Clean Energy, and Sierra Club as filed today in Dockets No. E-2, Sub 1291 and E-7, Sub 1266 have been served on all parties of record by electronic mail or by deposit in the U.S. Mail, first-class, postage prepaid.

This 18th day of April, 2022.

/s/ David L. Neal

ATTACHMENT A:
*Review of Duke Energy's
Application for Approval of
Electric Vehicle Managed
Charging Pilots*

Review of Duke Energy's Application for Approval of Electric Vehicle Managed Charging Pilots

Docket Nos. E-7, Sub 1266 and E-2, Sub 1291

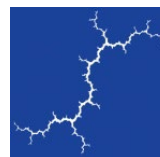
Prepared on Behalf of Southern Environmental Law Center

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SUMMARY

On February 11, 2022, Duke Energy Carolinas (DEC) and Duke Energy Progress (DEP), collectively “the Companies,” filed an application before the North Carolina Utility Commission (“Commission”) for approval of an electric vehicle managed charging pilot.¹ On February 22, 2022, the Commission issued an order requesting comments on the Companies’ proposal. Synapse Energy Economics, Inc. was retained by the Southern Environmental Law Center to review and assess the Companies’ proposal. This report summarizes Synapse’s findings and recommendations.

Electric vehicles (EVs) are widely recognized as a key component in combating climate change by reducing emissions from the transportation sector, and Governor Roy Cooper has established ambitious targets for EV adoption in the state.² At the same time, mass adoption of EVs can have substantial impacts on the electricity grid and on costs to all utility customers if not properly managed. Thus, it is critical that we equip customers with the knowledge, understanding, and tools to mitigate grid impacts.

The Companies have proposed an EV charging pilot based on a subscription rate and managed charging – two novel approaches to EV pricing and management. The proposal would allow customers to engage in virtually unlimited EV charging at any time, except for 12 total hours a month (on up to three different days) in which the Companies could pause charging.

Managed charging can serve as an important tool to mitigate EV impacts on the grid, and the Companies’ proposed pilot is designed to provide the Company with useful information and experience with new technologies. Because the Companies’ proposed pilot would be limited to only 200 total participants and would provide the Companies with vital experience with managed charging technologies, we offer our conditional support for the Companies’ proposed managed charging pilot.

However, the proposed pilot is based on a flat monthly fee, and therefore does not provide participants with meaningful price signals. For this reason, we would strongly oppose the conversion of the pilot to a permanent EV rate in its current form. Instead, we recommend significant modifications to the pilot rates prior to inclusion in future permanent rate offerings.

Specifically, a subscription fee applied to charging in all hours should not be used in a broader roll-out because it:

- Fails to enhance customers’ understanding of how energy consumption impacts both emissions and costs on the grid.

¹ Duke Energy Carolinas, LLC and Duke Energy Progress, LLC. Application for Approval of Electric Vehicle Managed Charging Pilots, Docket No. E-7, Sub 1266 and E-2, Sub 1291, February 11, 2022.

² Governor Roy Cooper recently expanded North Carolina’s EV targets from 80,000 by 2025 to 1,250,000 by 2030 through Executive Order No. 246. State of North Carolina. *Executive Order No. 246*. January 7, 2022. Available at <https://governor.nc.gov/media/2907/open>.



- Would confuse customers by sending messages at odds with other tariffs. The proposed subscription pricing sends the message that greater electricity usage imposes no additional costs on the grid and that the timing of electricity consumption does not matter other than during three occasions per month when the Companies may pause charging.
- Rewards higher usage customers and discourages more energy efficient EVs, as the average cost of electricity for EV charging declines with higher usage. This is fundamentally unfair to customers who are charged on a per-kilowatt-hour basis, including customers on the Companies' residential time-of-use critical peak pricing (TOU-CPP) tariffs where the rate assessed during "discount" hours is generally higher than the effective price of the proposed EV subscription rate.

Therefore, we recommend that the Commission direct the Companies to satisfy the following requirements in any future proposal for full roll-out of a subscription rate or managed charging rate to provide more efficient and fair price signals:

- If the Companies propose a permanent subscription pricing plan, it should only be offered during off-peak hours when costs and emissions on the grid are low.
- If the Companies propose a managed charging tariff, it should be offered in combination with a volumetric rate of some form.

In the sections below, we discuss the concerns we have with the pilot pricing model and our recommendations for modifications prior to a full roll-out. We also provide examples of subscription pricing models that other jurisdictions have adopted.

REVIEW OF THE COMPANIES' APPLICATION

DEP and DEC refer to their proposal as a "residential managed charging dynamic rate pilot," which they argue will provide customers with bill simplicity and certainty, while concurrently producing advanced price signals to enable appropriate demand response.³ This characterization is misleading, however, as customers would not face dynamic rates or be expected to take any action to mitigate their demand on the grid. In fact, customers would see no volumetric rates at all. Instead, customers would be billed a monthly fixed fee of either \$19.99 (for DEP) or \$24.99 (for DEC) for virtually unlimited at-home EV charging.⁴ As shown in more detail below, the effective volumetric rate for a customer who took full advantage of the subscription and consumed 800 kWh per month—which could happen at virtually any

³ DEC and DEP Application for Approval of Electric Vehicle Managed Charging Pilots, Docket No. E-7, Sub 1266 and E-2, Sub 1291, February 11, 2022, p. 2.

⁴ A participant that consumes between 800 kWh and 1,199 kWh for three months may be removed from the pilot at the Company's discretion. A customer who consumes more than 1,200 kWh in any month may also be removed from the pilot at the Company's discretion. DEC and DEP Application for Approval of Electric Vehicle Managed Charging Pilots, Docket No. E-7, Sub 1266 and E-2, Sub 1291, February 11, 2022, pp. 7-8; DEC & DEP Response to SACE Data Request No. 1-5(c)



time during the day—is about half of the lowest available residential time-of-use (TOU) rates.⁵ In return for receiving this extremely low effective electricity rate, the Companies would have the ability to pause vehicle charging on up to three occasions for up to 12 total hours a month, with no customer action required.

We acknowledge that the Companies’ proposed residential managed charging pilot would help the Companies gain experience with managed charging, and we support the Companies’ efforts to explore new ways of managing peaks on the grid and test new technologies. Further, we understand that the pilot would only be offered to 200 customers. For these reasons, we do not oppose the Company’s pilot proposal. However, the absence of price signals contained in the Companies’ pilot proposal would be detrimental to ratepayers under a wider roll-out for several reasons.

First, the subscription fee approach divorces a customer’s bill from both the timing and quantity of energy consumed. This constitutes a significant departure from traditional rate design practices and trends across the country that endeavor to equip customers with more information and tools to manage their electricity usage and bills as those reflect costs on the grid. By obscuring price signals altogether through an “all-you-can-eat” approach, the Companies’ proposal allows customers to remain ignorant of how their energy consumption impacts grid costs and emissions, and provides no incentive to customers to concentrate their charging during off-peak hours. While this is tolerable for a limited number of pilot participants, such a lack of price signals should not be promoted more widely.

Even more troubling, the subscription fee gives customers the false impression that the quantity and timing of electricity consumption has no bearing on costs, since the customer would still pay the same monthly fixed fee regardless of whether they consume 100 kWh or 800 kWh (or, for up to three months, 1,199 kWh),⁶ or whether they charge their vehicle during hours when costs and emissions on the grid tend to be highest. These messages undermine the efforts the Companies are taking elsewhere to encourage more efficient use of the grid through ratepayer-funded energy efficiency programs and time-varying rates and could increase both emissions and costs in the long-run.

Finally, the Companies’ proposal is fundamentally unfair to lower-usage EV customers and those on time-varying rates. Low usage customers—including those with smaller, more efficient EVs—would not benefit from the Companies’ subscription pilot, while high-usage customers—including those driving significant amounts in large, higher-energy consuming vehicles such as the electric Hummer—would pay far less than a similar customer who charges only during the “discount” hours on a time-of-use with critical peak pricing (TOU-CPP) tariff.

The Companies’ TOU-CPP tariffs offer a particularly compelling point of comparison, as they are designed to essentially achieve the same results as the Companies’ managed charging proposal. By charging an

⁵ The Companies offer a slightly lower volumetric charge on their tariffs with a demand charge, at 6.1 cents/kWh for DEP and 5.3 cents/kWh for DEC. In those cases, however, the effective rate per kilowatt-hour would likely be higher due to the EV increasing household demand. DEC & DEP Response to SACE Data Request No. 1-3.

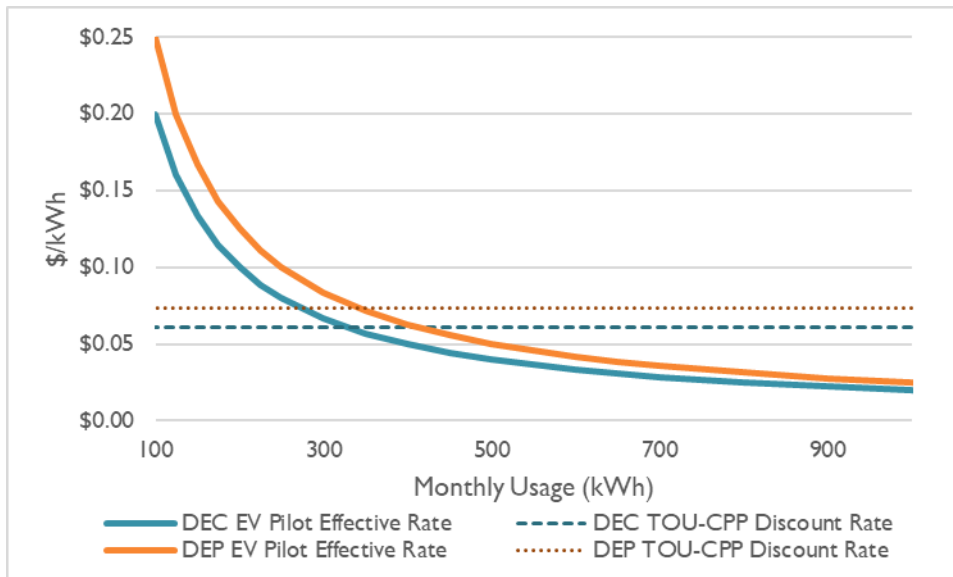
⁶ Other than the 12 hours per month when the utility could temporarily pause charging.



extremely high price during only a few hours a year (up to 20 days per year), the TOU-CPP tariffs provide a dynamic price signal to customers to shift load. The managed charging component of the Companies’ proposal also shifts load during those few critical hours per year, but does so without customer intervention. In both cases, customers should be rewarded for avoiding the most constrained hours with lower rates in other hours. As our analysis shows, however, the Companies’ proposal only rewards high-usage customers for avoiding the most constrained hours and rewards the highest usage customers much more for doing so.

The effective rate (\$/kWh) for the Companies’ subscription fees at various usage levels is shown in the figure below in the solid lines (blue for DEC and orange for DEP). These effective rates are compared to the lowest rates (the “discount” hours) in the Companies’ TOU-CPP tariffs in the dotted lines.

Figure 1. Effective EV Subscription Pilot Rates (\$/kWh) versus Discount Rates on TOU-CPP



As illustrated in the figure, at 100 kWh per month, a customer would be paying 20 cents/kWh or more on the Companies’ proposed EV charging subscription tariff, while at usage levels around 700 kWh, the effective rate would be less than half what a customer on a TOU-CPP tariff would pay for charging during discount hours. Thus, only higher-usage EV customers or those who wish to charge during on-peak hours will benefit from the Companies’ subscription fee proposal, while lower usage customers will be left paying higher rates, even if they only charge only during the lowest-priced off-peak hours.

Again, we appreciate that this is only a pilot program applicable to 200 customers, and that the Companies will gain important experience with managed charging options. However, we recommend that the Company be required to improve the efficiency and fairness of its price signals prior to such a rate being approved for wider application. In addition, any wider roll-out should consider the forthcoming recommendations from the Low-Income Affordability Collaborative to ensure that an EV charging rate is not likely to disproportionately favor more affluent customers (those with the highest capacity battery-electric vehicles with high energy consumption).

RECOMMENDATIONS FOR EV CHARGING RATE MODIFICATIONS

Both subscription pricing and managed charging have the potential to encourage greater EV adoption and reduce impacts on the grid. However, in any future rate offering, we strongly caution against combining these two approaches in a single tariff. Instead, subscription pricing should only apply to off-peak consumption, while managed charging should primarily be employed to mitigate on-peak charging. If the two concepts are combined, as in the Companies' proposal, customers have no incentive to reduce charging during on-peak hours other than the 12 hours per month that the Companies may pause charging. As a result, electricity consumption during on-peak hours is apt to increase, leading to higher emissions and costs on the grid.

We recommend that the Commission direct the Companies to modify any future EV subscription rate or managed charging offering to provide more efficient and fair price signals to customers. Specifically:

- If the Companies wish to offer subscription pricing, the subscription price should only apply to off-peak charging when costs and emissions on the grid are low.
- If the Companies wish to offer a managed charging tariff, it should be offered in combination with a volumetric rate of some form.

Our recommendations are consistent with the approaches taken by other utilities that have adopted subscription rates or managed charging, as discussed below.

Subscription Pricing

Several utilities offer subscription pricing models. However, these programs are typically only offered for off-peak charging. For example:

- Austin Energy in Texas offers a subscription pricing program called "EV360." However, the pricing only applies to off-peak hours between 7:00 pm and 2:00 pm. It also has separate pricing tiers for customers with charging demand of less than 10 kW or greater than 10 kW. Customers who elect to charge during on-peak hours face a volumetric rate of \$0.40/kWh during the summer and \$0.14/kWh during the winter.⁷
- Xcel Energy in Minnesota is piloting a subscription service that provides unlimited charging from 9:00 pm to 9:00 am for a monthly subscription fee of \$42.50. Customers that charge during on-peak hours are charged \$0.20/kWh in the summer and \$0.17/kWh in the winter.⁸

⁷ Austin Energy. *EV360 Whitepaper*. Available at <https://austinenergy.com/wcm/connect/b216f45c-0dea-4184-9e3a-6f5178dd5112/ResourcePlanningStudies-EV-Whitepaper.pdf?MOD=AJPERES&CVID=mQosOPJ>.

⁸ Xcel Energy. *EV Subscription Service Pilot*. 2022. Available at <https://ev.xcelenergy.com/subscription-pilot-mn/>



Managed Charging Programs

Managed charging programs that employ wi-fi enabled Level 2 chargers are becoming more widespread. In addition, some programs are utilizing on-board vehicles telematics:

- CPS Energy in San Antonio, Texas, offers a managed charging program called “FlexEV Smart Rewards.” This program provides a sign-up bonus of \$250 and a \$5 monthly credit for allowing the utility to manage charging between 2:00 pm and 9:00 pm up to 15 times per month. Customers are allowed to opt out two times per month before they forfeit their monthly incentive.⁹
- Green Mountain Power (GMP) in Vermont previously piloted a subscription pricing program coupled with managed charging that concluded in 2019. This pilot was similar to that proposed by DEP and DEC in that customers were offered unlimited charging for a fixed fee of \$29.99 per month, under the condition that GMP be allowed to pause charging during GMP-triggered demand response events. GMP’s demand response events could occur for up to 60 hours per month, which is much more than the 12 hours proposed by DEP and DEC. Further, customers who opted out of a demand response event were charged approximately \$0.60/kWh for electricity consumed during the events.¹⁰ Both of these features enabled GMP to retain more control of customer charging than under DEP and DEC’s proposal.

Notably, GMP discontinued its subscription pricing pilot in 2019 and transitioned instead to a critical peak pricing tariff with managed charging. Under this tariff, customers are charged a volumetric rate of \$0.14/kWh and a critical peak rate of \$0.72/kWh. The Company automatically curtails charging during critical peak events; the CPP rate only applies if customers override the Company’s signal.¹¹

- In California, the second phase of the ChargeForward project experimented with various approaches to managing EV charging. The approaches ranged from simply avoiding charging during peak evening hours, to shifting charging times and locations, to increasing charging during times of high renewable energy production. The project also evaluated the use of vehicle-based telematics charging data, similar to DEP and DEC’s proposal. The use of vehicle telematics allowed EV drivers to set their desired state-of-charge levels and their departure times to allow the operator to remotely control charging around those times.¹²

⁹ CPS Energy Frequently Asked Questions About the FlexEV Rewards Programs. Available at <https://www.chargingrewards.com/faqs/cpsenergy/>

¹⁰ Green Mountain Power. 2018 Renewable Energy Standard Tier III Annual Plan. Available at <https://www.vpirg.org/wp-content/uploads/2017/12/2018-GMP-Tier-III-Filing.pdf>.

¹¹ Green Mountain Power. 2022. New! EV Charging Rates. Available at <https://greenmountainpower.com/rebates-programs/electric-vehicles/ev-charging-rates/>

¹² California Energy Commission, Energy Research and Development Division. Total Charge Management of Electric Vehicles. Final Project Report. CEC-500-2021-055. December 2021. Available at <https://www.energy.ca.gov/sites/default/files/2021-12/CEC-500-2021-055.pdf>.



In conclusion, we note that most subscription rates and managed charging programs are conducted separately, as the two approaches drive customer behavior in different ways. The one instance that we are aware of in which managed charging was combined with subscription pricing was abandoned in 2019 in favor of a critical peak pricing-type of program with a volumetric rate. We encourage the Commission to direct DEP and DEC to modify any future EV rate offerings to separate these two approaches in order to preserve meaningful price signals for customers regarding the quantity and timing of their electricity consumption.

