BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Consider Alternative-Fueled Vehicle Programs, Tariffs, and Policies. **Rulemaking 13-11-007**

(Filed November 14, 2013)

PHASE 1 OPENING COMMENTS OF

THE UTILITY REFORM NETWORK

ON GUIDING PRINCIPLES AND CURRENT PROGRAM ISSUES



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PHASE 1 OPENING COMMENTS OF THE UTILITY REFORM NETWORK ON GUIDING PRINCIPLES AND CURRENT PROGRAM ISSUES

1. Introduction

TURN commends the Commission for continuing to develop public policies that enhance the use of the electric and natural gas grids to decarbonize the transportation sector by promoting the adoption of electric and alternative-fueled vehicles. The focus of these comments is on transportation electrification.

Before responding directly to the five questions posed in the Scoping Memo, TURN acknowledges that adopting policies to promote the growth of electric and plug-in vehicles (jointly referred to as "EVs" in this pleading) is a complex task. The CPUC is not a government research and development agency, but rather regulates private electric corporations. The Legislature has determined that public charging stations are not subject to CPUC regulation. The EV market, both for cars sales and for charging, is growing rapidly in California and the nation; but is also changing rapidly, thus creating significant technology risks for any market participant, especially one whose primary focus is on delivering the electricity commodity, rather than selling cars.

As discussed in more detail below, TURN strongly cautions against allowing the utilities to become major participants in building and owning charging infrastructure. The risks of significant stranded costs are huge,

especially if the utility has no skin in the game, and thus risks nothing should its technology or market choices become obsolete or simply misplaced.

TURN suggests that the Commission should focus on evaluating to what extent the utilities can: 1) provide innovative tariffs (time of use tariffs, elimination of demand charges), 2) subsidize interconnection facilities necessary for charging infrastructure deployment, especially at multi-unit dwellings ("MuDs"), and/or 3) perform small pilots oriented to facilitating V2G. TURN supports the Governor's goal of increasing EVs, given that in California the transportation sector is the primary contributor to carbon and pollutant emissions. However, the growth of the EV market will depend on overcoming consumer barriers linked to cost, range anxiety and charging infrastructure. And the relative impacts of fast charging on the grid must be evaluated at the outset, to ensure that we do not accidentally reach a future that requires numerous additional gas-fired peaker plants to charge mobile batteries.

The CPUC and the electric utilities can have a constructive role in addressing these barriers; however, it would both violate the laws of public utility regulation, as well as be poor public policy, to force ratepayers who require electricity service for their normal day-to-day life to subsidize massive investments in charging infrastructure, if those investments provide large private benefits only to EV owners and to the property owners where the infrastructure is located.

TURN also notes that, rather than focusing on utility infrastructure deployment, it may be more appropriate to expedite consideration of submetering protocols, especially as they relate to multi-unit housing.

2. Responses to Questions

2.1. Guiding Principles

Question 1 asks: "Should the Commission adopt the proposed AFV Guiding Principles? What modifications, if any, are appropriate?"

TURN generally supports the guiding principles listed in the Scoping Memo, though offers no opinion on whether the Commission should formally "adopt" the guiding principles. TURN emphasizes that the first principle contains multiple and important directives; however, the principle could be interpreted to mean that "all ratepayers" should subsidize "AFV infrastructure" as long as total benefits are maximized and total costs are minimized. This is not an equitable outcome.

TURN is not opposed to some subsidies for AFV infrastructure if there is a determination of market failure related to charging facilities. However, TURN strongly opposes having the general body of ratepayers subsidize all "AFV infrastructure." As discussed in Section 2.2.1 below, the legal requirement for just and reasonable rates dictates that costs must be properly allocated to relevant customer classes. There is presently not a separate "EV customer class," though there are tariffs designed only for EV owners. Any cost allocation of EV infrastructure must properly take into account the fact that the only reason for the infrastructure is to charge

EV cars, and the primary economic benefit of the infrastructure is the significant reduction in gasoline costs to the EV owner.

Thus, TURN recommends that principle one be modified to state:

Promote the deployment of safe and reliable AFV (focusing in this phase on PEV) electric grid infrastructure designed to meet transportation and energy service needs while maximizing ratepayer benefits, equitably allocating costs and minimizing costs to all utility customers."

2.2. Infrastructure Ownership

Question 2 asks: "Should the Commission consider an increased role for the utilities in PEV infrastructure deployment and, if so, what should that role be? If the Commission should consider utility ownership of PEV charging infrastructure, how should the Commission evaluate "underserved markets" or a "market failure" pursuant to D.11-07-029? What else should the Commission consider when evaluating an increased role for utilities in EV infrastructure deployment?"

In evaluating any potential utility role, the Commission should strongly consider the potential technology risk of stranded costs, and the need for an equitable allocation of costs and benefits. Based on these considerations, TURN maintains that the utility role in infrastructure deployment should be extremely limited. The utilities should evaluate different methods of compensation that properly charge some portion of fixed costs to the benefitting users or property owners.

2.2.1. Legal Considerations and Cost Allocation

The Commission has a responsibility to ensure just and reasonable rates pursuant to § 451 of the Public Utilities Code. This principle is applied to utility investments most generally by allocating the costs according to "cost causation." Cost causation can be either directly measured, such that costs are assigned to individual customers, or costs may be allocated pursuant to accepted marginal and embedded cost methods to customer classes.

The cost of hook-up equipment for customers, such as, for example, the meter and service drop for a residential customer, is allocated to the residential class based on the fact that all customers require such equipment to obtain utility service. However, special equipment over and beyond the basic service connection is charged directly to a customer pursuant to rules governing the cost of "Special Facilities."

The building of infrastructure to support electric vehicle charging is analogous to a service connection for end-use customers. Under traditional ratemaking, the utility should either create a separate class of "EV customers" and allocate the costs of infrastructure only to those customers, or should charge any individual customer or property owner a fee analogous to a special facilities fee.

The Commission ordered that utilities classify any residential service upgrade costs, incurred due to the installation of EV charging, that are in excess of tariff allowances as "common facility costs," rather than charge individual EV owners as would normally be done pursuant to Tariff Rules

15 and 16.¹ The Commission extended this policy based on the fact that total distribution upgrade costs were very limited in 2011 and 2012, but the costs to any individual owner could be high and could negatively impact EV adoption.² However, the Commission cautioned that the cost impacts will have to be monitored and re-evaluated to prevent large costs shifts to other residential customers.³

Building actual charging infrastructure could entail more significant costs than potential service upgrades for individual customers. For example, SDG&E's pilot application cost forecast shows that the EVSE and control equipment costs would be about 75% of the total, whereas, the forecast for the combined cost of engineering, permitting, new electric service, and transformer installation for the pilot is about 23%.⁴ As such, consistent with the requirements of § 451, the Commission cannot simply charge non-benefitting customers the cost of such investments.

Since third party owners of public charging infrastructure are not subject to CPUC regulation,⁵ if a utility owns infrastructure it would be competing against private entities. The utility should not be engaged in non-utility

¹ D.11-07-029, p. 58-60.

² D.13-06-014, p. 11-13.

³ See, D.13-06-014, p. 15.

⁴ Calculated from p. JBA-1 in the Direct Testimony of SDG&E Witness Jonathan B. Atun in SDG&E Application 14-04-014.

⁵ § 216(i), adopted pursuant to AB 631 (2011).

competitive markets. Such activities can only be done through affiliates subject to the affiliate transaction rules.

2.2.2. Technology Risk

As the OIR acknowledges, the EV market is changing rapidly. EV sales in California have increased 500% between 2011 and 2013. There is significant technological progress in both the automotive side, with many new designs and models coming on the market, as well as in the provision of charging services.

Any utility investment could easily lead to stranded costs. For example, SDG&E has proposed to build over 5500 charging stations at about 500 sites, using Level 1 and 2 charging. TURN does not deny that SDG&E's proposal may include state of the art technology. However, it is financially structured to recover the investment and interest from ratepayers over about 25 years, resulting in the collection of twice the amount of the principal. If competitive technologies replace the proposed infrastructure in 10 years, ratepayers could continue to pay for a stranded investment for 15 more years.

2.2.3. Utility Involvement in Infrastructure Ownership Must Consider Equitable Allocation of Costs and Benefits

One of the primary factors the Commission should consider in evaluating the potential utility role in infrastructure development is who benefits from IOU ownership of any infrastructure, and whether there is a fair allocation of costs and benefits.

For example, SDG&E's pilot proposes to build charging infrastructure at multi-unit dwellings and workplaces. The primary beneficiaries of the project will be the individuals who use the charging station,⁶ the property owners of MUDs who can market the charging station as a benefit to tenants, and the workplace owner who can market the charging as a benefit to employees. In addition, the utility will eventually benefit due to increased rate base and future sales growth.

The only entity that does not receive a direct economic benefit from SDG&E's proposed pilot is the utility ratepayer, who is asked to completely fund the capital and interest payments to support the private charging infrastructure. The only way that utility ratepayers could be benefit is if the utility charges a fee that allows a contribution to margin, meaning that the increased load at least covers the additional fixed costs. SDG&E has not proposed to recover the costs of the infrastructure from any of the benefitting parties, either through fees or charging rates.

Obviously, all residents of California will benefit due to improved air quality. As is often the case when considering ratepayer subsidies to reduce private costs of investments that yield economic benefits to private individuals, but also societal environmental benefits, a key public policy question is whether those societal benefits should be achieved through the

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⁶ Generally, the costs of charging an EV are approximately 50% of gasoline costs on a per mile basis. SDG&E's cost effectiveness model shows that the private benefit of avoided gasoline costs comprises well over 70% of the total benefits of any EV charging program (with tax benefits being the other major component). This is a **private benefit** that accrues strictly to user of EV, whether based on ownership or lease model.

legislative process and progressive taxation, or though the CPUC administrative process and regressive utility bill taxation. In this case, given the relative balance of costs and benefits, and given the various legislative action promoting tax subsidies for EV cars and unregulated status for charging stations, there is little justification for having electric ratepayers subsidize private charging stations.

The only equitable means of allowing utilities to build and own charging infrastructure would be if there is some contribution to margin from payments made by the private parties who benefit. Those parties include the EV user and the property owner.

TURN thus suggests that if the Commission seeks to advance construction of charging infrastructure, it should support pilots that test different mechanisms of cost sharing. Such mechanisms might include:

Offer a rebate to property owners who install EVSE on their own cost. This mechanism would eliminate the need for utility ownership of EVSEs. It should only be implemented during a defined period of time to be determined once the program is piloted. The Commission should seek comments, or hold a workshop, in this OIR to determine specific details, such as the level and timing (with respect to the timing of the installation of EVSEs) of the rebate, eligibility requirements, and the duration of the rebate program. As a condition of the rebate payment, property owners should have to forego any energy or charging access markup so as to ensure that the rebate program obtains its highest value in terms of EV adoption

and that property owners are not able to exert geographical market power.

Create a special facilities fee to be charged to the property owner.

This mechanism combines utility ownership of the EVSE infrastructure with a fee assessed to property owners, given that property owners derive benefits from having EVSEs available to their tenants or employees. The amount of the special facilities fee, should the Commission decide that the utilities show at some future date that this is preferable to a rebate program, could be developed using the expected contribution to margin.

2.2.4. Market Failure and Underserved Markets

In Decision 11-07-029 the Commission prohibited utility ownership of charging infrastructure, but said it would revisit the prohibition should the utilities present evidence in an appropriate proceeding of underserved markets or market failure in areas where utility involvement is prohibited. Even then, the Commission said it would re-evaluate the prohibition in light of potential cost-subsidization implications of any utility proposal.⁷

A market failure, generally, is a situation where free markets fail to allocate resources efficiently. The position of the utilities appears to be that the market is failing to allocate resources in such a way as to achieve sufficient EV adoption.

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⁷ D.11-07-029, p. 50.

However, data on EV sales suggest that the market is presently experiencing rapid growth. EV sales have increased dramatically since 2011, as illustrated in Figure 1 below:⁸

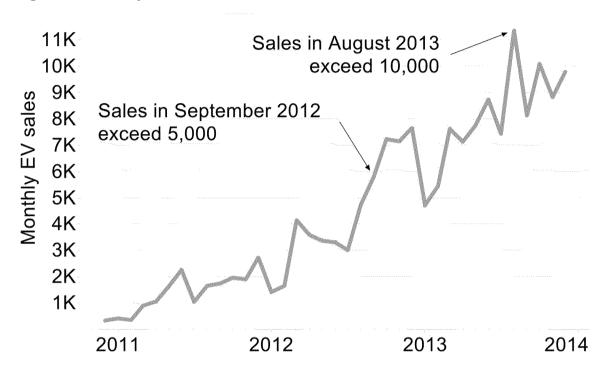


Figure 1: Monthly U.S. EV sales, Jan. 2011-Dec. 2013

EV sales more doubled in 2013 over 2012, both in California and nationwide. Plug-in cars represented about 2.5% of sales of new vehicles in California in 2013. Moreover, there has been a steady and substantial growth in public charging infrastructure over the past year. California has over 1,800 charging stations, and just this past June the California Energy

http://www.pevcollaborative.org/sites/all/themes/pev/files/7_July_20 14_Dashboard_PEV_Sales_140805.pdf

⁸ Source: Union of Concerned Scientists, March 25, 2014, "En Electric Spring: 3 Strong Trends in the EV Market." Available at: http://blog.ucsusa.org/electric-vehicle-trends-458 . See, also, PEV Collaborative,

Commission awarded over \$5,000,000 in grants to install 475 new EV charging stations.⁹

From these broad market indicators one might conclude that there is no obvious "market failure." Indeed, the EV car industry has recently introduced significant marketing opportunities, such as monthly leasing at favorable rates together with introductory bonuses such as free charging.

There is general consensus that the primary barriers to the growth of the EV market include high up front capital costs for the cars, range anxiety, and lack of charging infrastructure.

Market participants are clearly working to address these barriers. Both federal and state governments have created subsidy programs to address the high upfront capital costs of the cars, themselves, and the CPUC has further reduced the capital costs related to utility service upgrade and extension by requiring the general body of ratepayers to pay for such investments.

The issue of range anxiety is complex, and is a function of both charging speed, distance, and availability of charging at suitable speeds. The issue of charging infrastructure appears to be the primary barrier to be addressed in Phase I of the OIR.

2014 (announcing \$2.8 million for construction of 175 charging stations).

⁹ See, generally, "Electric-vehicle Charging Stations Sprouting All Over California," The Sacramento Bee, August 9, 2014, available at http://www.sacbee.com/2014/08/09/6614146/electric-vehicle-charging-stations.html. See, also, CEC Press Releases, June 19, 2014 (announcing over \$5 million for construction of 475 electric vehicle chargers); July 22,

Some parties have suggested that there is insufficient charging infrastructure located in in multi-unit dwellings (MuDs) or workplace settings.¹⁰ The Scoping Memo asks parties how to evaluate whether there is a really a "market failure" to serve these segments of potential EV users, and, if so, what the role of the utility is to address the market deficiency.

Regarding MuDs, the Commission should require the utilities to show that there is indeed demand for EV use by MuD dwellers that is limited by access to charging. Such a showing could be made through surveys and limited deployment of capital. Any such research should be designed to assess both the 1) extent to which apartment dwellers would be purchasing EVs at a higher rate, but for any perceived charging availability limitations, and 2) the reason(s) for unexpectedly low adoption of EVSEs at MuD properties.

These initial survey steps are important because it is not clear that apartment dwellers are truly underserved and, even if they are, that utility ownership of charging facilities at MuD properties is the appropriate remedy. It could well be, for example, that the MuD population that purchased EVs prior to September 2012, the cut-off purchase date for the survey, were more limited by up-front capital costs. In general, income

¹⁰ See, for example, SDG&E Application 14-04-014, p. 2. SDG&E cites a February 2014 survey (of owners who purchased an EV *prior to Sep. 2012*) of California EV owners for the fact that 88% of PEV drivers live in single-family homes, and that 46% had access to workplace charging. However, the actual survey interpreted the 46% statistic to mean that "workplace charging availability is becoming more widespread." See,

https://energycenter.org/clean-vehicle-rebate-project/vehicle-owner-survey/feb-2014-survey

levels of multi-unit dwellers are lower on average than of single-family unit dwellers. Significantly, leasing arrangements that reduce up-front costs were not introduced until after September 2012.

A family of four living in a MuD on income of \$50,000 is probably not in the market for an EV, even if it had charging available in its apartment complex. There are of course MuD tenants in higher income brackets, but, to the extent that there is a failure of the market to serve that segment, it is unclear what has caused the failure.

Even if it may be true that the market for EVSE in MuDs is underserved or failed, the cause of such market failure could be something as simple as property owners and/or managers being unwilling to allow private installation. To address this situation, the California Legislature recently passed AB 2565, which would "require a lessor of a dwelling to approve a written request of a lessee to install an electric vehicle charging station at a parking space allotted for the lessee in accordance with specified requirements and that complies with the lessor's approval process for

modification to the property." AB 2565 also addresses commercial properties, and thus might ameliorate a barrier to workplace charging.

For both MuD and workplace charging, TURN suggests that the Commission require utilities to work with the California Plug-In Electric Vehicle Collaborative to study the issue of barriers before the Commission adopts a policy of utility ownership of charging infrastructure. The PEV Collaborative appears to have studied the issue in depth and has on its website detailed information for property owners regarding the installation of EVSE at workplaces and MuDs.

At least one party has suggested that a significant barrier to developing charging infrastructure at MuDs is the high cost of upgrades using existing

¹¹ See, http://www.leginfo.ca.gov/pub/13-14/bill/asm/ab_2551-2600/ab_2565_bill_20140827_enrolled.pdf The legislation awaits Governor Brown's signature as of August 27, 2014. The lessor would not be require to provide access to charging facility implementation in situations where there are five or fewer tenants or where the property is subject to rent control; the bill also specifically exempts any requirement that lessor provide additional parking spaces to requesting lessees. The requirement to provide access applies specifically to those tenants who have an existing allotted space.

¹² AB 2565 would also "void any term in a lease renewed or extended on or after January 1, 2014, that conveys any possessory interest in commercial property that either prohibits or unreasonably restricts, as defined, the installation or use of an electric vehicle charging station in a parking space associated with the commercial property," and, "prescribe requirements for [commercial property] lessor approval of a lessee request to install or use an electronic vehicle charging station and would require that a lessor approve a request to install a charging station if the lessee agrees in writing to do specific acts…"

service equipment, even with the common facilities treatment established in D.11-07-029.¹³ It is possible that upgrading existing equipment at an MuD without a new meter or service drop may entail unique problems. TURN recommends that the Commission prioritize this issue for consideration in workshops and/or comments in this Phase of the Rulemaking. It may be appropriate to consider other policies to address barriers to third party installation of charging infrastructure at MuDs. In its "pilot" proposal, SDG&E has simply opted to install a new service drop at all facilities, thus effectively providing separate metering. This practical issue appears related to the issue of separate metering and/or submetering, and should be addressed expeditiously in this Rulemaking.¹⁴

2.3. Education and Outreach

Question 3: What education and outreach activities must the utilities provide to support further customer PEV adoption? What existing resources are available for these activities and what additional resources are needed?

To the extent that a limited availability of EVSEs in certain segments, such as MuDs and offices, is at least part of the cause of lower EV adoption rates than should otherwise be expected, targeted utility education and outreach

¹³ Aug. 13, 2014 Prehearing Conference, Comments of Stacey Reineccius of PowerTree. TURN does not have a transcript to provide page citation.

¹⁴ TURN has not fully evaluated how this issue relates to the Phase 2 submetering pilot authorized in D.13-11-002. Expediting the submetering pilots may be a component of addressing the barriers to infrastructure installation in MuDs.

programs for owners and managers MuD and office properties, as well as for business owners, should be emphasized. Information developed for such audiences could serve as the basis of active and targeted utility education and outreach with the goal of diminishing any EVSE adoption resistance on the part of MuD and office properties and businesses.

2.4. Demand Charges

Question 4: How should the Commission mitigate the impact of demand charges, if at all, on entities pursuing transportation electrification?

The Commission should consider mitigating demand charges for large entities pursuing transportation electrification, but not unconditionally. TURN recommends starting with a separate rate for EV charging based on a TOU rate with a critical peak pricing (CPP) overlay. TURN suggests that the interim actions the Commission has already taken to remove demand charges for public bus fleets¹⁵ represents exactly the type of public policy that should be pursued, where innovative tariffs promote electrification of buses that most directly impact air quality in cities and lower-income neighborhoods.

In PG&E's service territory, entities under 75 kW have the A-6 rate open to them, which is an all-energy rate. For customers up to this size in the other utilities, a similar rate should be offered, possibly with more super-off-peak discounts.

¹⁵ See, Resolutions E-4514 (Nov. 9, 2012) and E-4628 (Aug. 14, 2014).

In analyzing potential mitigation measures, TURN recommends dividing charging customers into two categories – charging stations (e.g., rapid fueling) and fleet operations.

A TOU rate with a CPP overlay would adequately deal with issues relating to generation and transmission demand and could obviate the need for these demand charges, because generation demand is much more related to sustained demand across several hours on peak and CPP event days than the customer's instantaneous demand.

For distribution demand, a concern is that short duration loads for roadside fast charging or rapid fleet charging could impose costs on the distribution system that would not be imposed by more moderate charging loads. Therefore, TURN recommends that any EV rate design for customers over 75 kW retain at least half of the otherwise applicable distribution demand charge to reflect costs imposed by rapid charging, with corresponding reductions to energy rates, even if generation and transmission demand costs can be effectively collected in energy rates. While demand charges for roadside facilities may be expensive for customers and facility owners, it should be noted that public, roadside charging is a matter of convenience. Most of the charging presently done by EV owners at the non-fleet level is done at home, and is not subject to demand charges. Even if non-fleet EV users choose to charge from time to time at road-side stations at higher cost because of demand charges, average EV fueling costs overall would still be cost-competitive when compared to the cost of fueling vehicles powered by traditional, internalcombustion engines.

Fleet charging is different because fleets may have at least some flexibility, thus allowing them to spread loads over a number of vehicles and possibly to provide some renewable integration or quasi-ancillary services, even if not fully dispatchable by the ISO. For example, some might be able to shift the timing of some fleet charging (consistent with their operational needs) to correspond to market conditions (e.g., charging some vehicles at 2 pm on a sunny spring day when loads are low and hydro is high). Others might be able to ramp charging up and down during the night as wind output changes to reduce curtailments of renewable energy and use of fossil energy. At the present time, special contracts could be a better way of allowing such activities and compensating for the system benefits provided, but demand charge forgiveness may be an important part of any such contracts.

Charging at workplaces would be subject to demand charges if the work place itself is on a commercial or industrial tariff with demand charges. TURN does not support eliminating demand charges in such a situation, unless the EV charging is separately metered.

2.5. Results of Pilots

Question 5: How should the Commission identify and consider in this proceeding best practices achieved and lessons learned from current AFV pilot project results?

The list of related proceedings submitted by the utilities on June 13, 2014 lists at least twenty-six pilots related to EVs. Many of the pilots were approved in the 2012-2014 EPIC proceeding, and others have been proposed for the 2015-2017 EPIC proceeding.

While TURN has not fully researched the question of EPIC funding, it is our understanding that the pilots listed by the utilities comprise only the "IOU" portion of the EPIC investment plan. Over 80% of the \$162 million in annual EPIC funding is administered by the CEC. TURN does not know whether the CEC can and would fund pilots proposed by the IOUs.

The EPIC decision includes certain reporting requirements. TURN recommends that in this proceeding, the Commission:

- 1. Require the IOUs to submit all reports conducted as part of the EPIC program for pilots related to EVs;
- Require the IOUs to submit similar reports regarding any other pilots related to EVs that might be funded from other state or federal sources;
- 3. Require the IOUs to provide a summary or report concerning their overall strategy for incorporating the results of the multiple pilots and R&D projects.

TURN strongly believes that it is appropriate and useful to authorize pilot programs that will allow the IOUs to evaluate a) methods of reducing the impacts of charging on grid infrastructure; and b) methods of collecting fees for charging to minimize undue subsidies while reducing barriers to EV growth.

The scope of pilots should preclude significant potential of stranded costs or unfair subsidies.

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¹⁶ See, for example, D.13-11-025, p. 17-18.

3. Conclusion

TURN appreciates this opportunity to provide comments in response to the Assigned Commissioner's Scoping Memo. We support the implementation of additional pilots, especially with respect to new tariff designs. TURN also recommends that the Commission prioritize consideration of submetering and/or service line installation at MuDs, to facilitate third party charging infrastructure deployment. TURN cautions that the Commission should not rush to allow utilities to build and own charging infrastructure, absent factual evidence demonstrating that lack of EV adoption is actually caused by lack of charging infrastructure at identified locations. Any massive utility investment in charging infrastructure creates a very high risk of stranded costs. Even if utilities are allowed to build charging infrastructure, they should test different means of charging users or property owners for the infrastructure, so that ratepayers are not left paying for facilities which provide economic benefits to other parties.

Respectfully submitted,

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