BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of a Working Case to Explore Emerging Issues in Utility Regulation	))	File No. EW-2017-0245

COMMENTS OF SIERRA CLUB &
NATRUAL RESOURCES DEFENSE COUNCIL ON ELECTRIC VEHICLES

I. Introduction

Sierra Club and Natural Resources Defense Council (NRDC) appreciate the opportunity to provide comments on the role for the Missouri Public Service Commission in supporting the electric vehicle (EV) market. We commend the Commission for initiating this important discussion, and respectfully submit these comments in response to the Commission's *Agenda for Workshop and Request for Comments*, filed April 6, 2017.[1] Please note that Sierra Club is separately submitting comments on rate design and solar policy.

In our comments, we address each of the four areas raised by Staff in the draft agenda by offering lessons from other states and utility commissions on general regulatory policy in the EV context. As a preliminary matter, we urge the Staff and Commission to adopt several policy goals in developing rules and policies for EVs and EV charging: first, to reduce barriers to EV adoption and ownership; second, to support growth and innovation in the EV service providers' market; and third, to maximize the benefits of EVs to the environment, to the electric system and to utility ratepayers, while minimizing costs to the grid.

In addition, to ensure that the working case and workshop process is meaningful for the Commission, transparent for all stakeholders, and leads to concrete action, we recommend that the Commission clarify that stakeholders will be able to offer comment on Staff's Final Report, as well as order that Staff's findings include recommendations on any Commission process or action (e.g., rulemaking or tariff revision) needed to resolve each set of identified issues.

II. Responses to Staff-raised issues

In their draft outline for the working case, Staff identified the "Commission's role in promoting a competitive market for plug-in electrical vehicles" as a core issue area, and listed

[1] *Agenda for Workshop and Request for Comments*, File No. EW-2017-0245, In the Matter of Working Case to Explore Emerging Issues in Utility Regulation (filed April 6, 2017).

four sub-issues: "Missouri statutory provisions," "make ready system, "who owns the infrastructure – can there be a demarcation point between the utility and third parties," and "other states."

We address each in turn.

a. Sub-issue 1: "Missouri statutory provisions"

The Commission is a creature of statute. The application of its organic statute and related law to the installation, ownership and operation of electric vehicle service equipment (EVSE) raises a host of legal and policy issues.

The most fundamental of these issues is the question of the Commission's jurisdiction over utility and non-utility owners or operators of EVSE. Similarly critical is establishing the standard of review for proposed utility investments in EVSE and/or supporting infrastructure. Because the question of jurisdiction is presently before the Commission in cases to which Sierra Club and NRDC are parties[2], in these comments we only offer examples from states that have considered and resolved these two issues, which are listed in Appendix A.

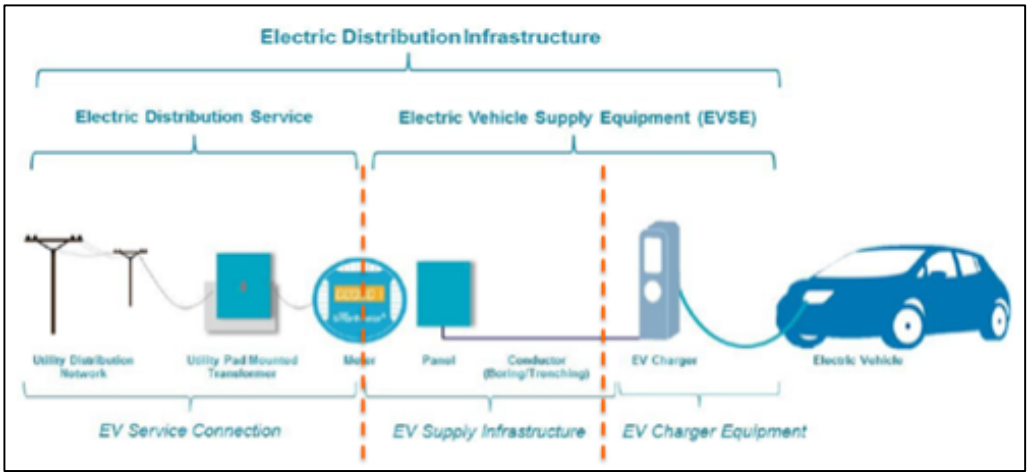
In addition, the Commission may need to consider and resolve a number of related and separate questions, ranging from whether the installation of EVSE is subject to permitting, regulation or standards under Missouri law to the type of evidence that is needed for regulators to make EV policy decisions. The full range of these issues is well summarized in a recent report by the Citizens Utility Board of Illinois, entitled "The ABCS of EVs: A Guide for Policy Makers and Consumer Advocates." [3] This report is filed separately with these comments.

b. Sub-issue 2: Utility ownership models, including the "make-ready" approach

[2] Jurisdictional and tariff issues were raised and briefed in ET-2016-0246 (*Final Report and Order* issued April 19, 2017 and effective May 18, 2017) and ER-2016-0285 (pending).
[3] Citizens Utility Board, *The ABCs of EVs: A Guide for Policy Makers and Consumer Advocates* at 6-8 (April 2017).

The so-called "make-ready" approach provides one model for the ownership of EVSE in context of a utility investment in vehicle charging infrastructure. It can be contrasted with an "end-to-end" utility ownership approach. Each utility ownership model, as well as a third, "hybrid" model which incorporates elements of both, have been approved by the California Public Utilities Commission in three separate programs now being implemented by the state's investor-owned utilities: Southern California Edison (SCE), San Diego Gas & Electric (SDG&E), and Pacific Gas & Electric (PG&E).[4] Sierra Club and NRDC actively participated in the proceedings that resulted in approval those programs, which are detailed in Appendix B.

In considering the utility role and ownership models, it is important to understand in some detail the structure of costs for vehicle charging and relation to the electric grid. The following diagram is a useful reference for discussion.



In general, EV infrastructure costs can be broken into three groups: the "EV Service Connection"; the "EV Supply Infrastructure"; and the "EV Charger Equipment." The EV Service Connection refers to that common utility distribution infrastructure, including transformers, utility services, and meters, which is ordinarily part of the regulated asset base. The EV Supply

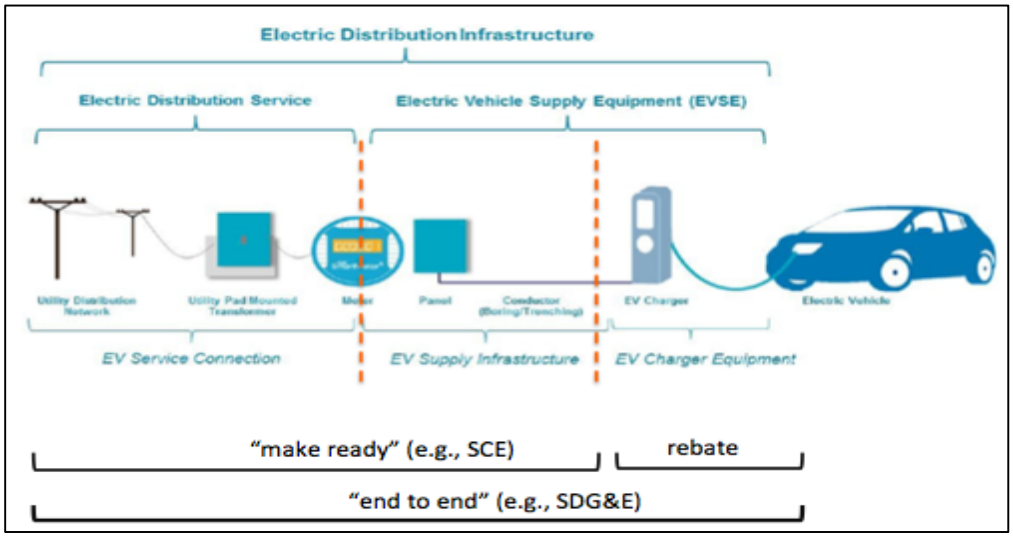
[4] SCE's program is a make-ready program; SDG&E has end-to-end ownership for its Vehicle-Grid Integration program; and PG&E's program will utilize a hybrid model, with ownership permitted in some market segments and make-ready required in others.

Infrastructure consists of the panels, conduits and wiring that support the EVSE. The EV Charger Equipment refers to the charging station itself (referred to elsewhere in these comments as "EVSE"). The software and hardware that comprise the EVSE are the locus of innovation in vehicle charging technology and business models.

In SCE's "make-ready" program, the utility invests in and owns the "EV Supply Infrastructure," as well as any necessary distribution upgrades that fall into the "EV Service Connection." It earns a rate of return on those capital investments. In addition, to offset the cost of the EVSE, the utility provides a rebate to the Site Host for a percentage of its cost. The Site Host retains ownership of the EVSE and is responsible for its upkeep, and the utility recovers the rebate cost as an expense.

By contrast, in SDG&E's "end-to-end" ownership model, the utility invests in and owns the "EV Charger Equipment" in addition to the "EV Supply Infrastructure" and any needed distribution upgrades. The Site Host is required to pay a "participation fee" to partially offset the cost of the EVSE, but the utility retains ownership and responsibility for operation and maintenance.

The two models are mapped onto the diagram below:



A critical takeaway from the California programs is that the "make-ready" model does not, alone, ensure competition, just as "end-to-end" ownership does not inherently hinder it. Either ownership model can work effectively if the program is properly designed to (1) leverage market competition and (2) ensure accountability of Site Hosts and/or utilities.

The California PUC's decisions, which apply a case-specific balancing test for competition (*see* Appendix A at 2) in addition to a ratepayer interest test, make clear that the question of who has title to the actual EVSE is only one element of program design that relates to potential impacts on competition. In each of the three cases, the more critical details for the California PUC related to the transparency and inclusiveness of the utilities' solicitation of EVSE (to avoid locking in "winners and losers" in the market), the opportunity for Site Hosts to select EVSE (to provide "customer choice"), and the ability of EV service providers to offer additional services. Ultimately, the same or similar program design elements to support competition were adopted in each program (see Appendix B), illustrating that issues related to competition can be addressed under either approach.

Finally, it is important to note that, in the context of SCE's program, the California PUC set the terms by which SCE provided rebates to Site Hosts, even though the utility itself did not own or operate that equipment, but sought to fold the rebate costs into customer rates.[5] Put another way, to ensure accountability of Site Hosts and prudent use of ratepayer dollars, the California PUC judged it critical to exercise control over the program terms, including:

- Utility pre-qualification of equipment and guidance on system design to ensure EVSE and software meet quality specifications and is capable of grid integration;

[5] *Decision Regarding Southern California Edison Company's Application For Charge Ready and Market Education Programs* at 6-45, D.16-01-023 (filed January 14, 2016), California Public Utilities Commission

- Ability of utility to claw back rebate payments and/or ownership of equipment if data show it is not being maintained or it is not operational a high percentage of time;
- Standards and network protocols to ensure consistent, easy user access and experience;
- Provisions to ensure load management needed to support the electric grid and provide the opportunity for drivers to realize the fuel cost savings that motivate PEV purchase decisions.

In short, "make-ready" programs require careful review and opportunity for meaningful stakeholder engagement to ensure they are successful, just as with other ownership models.

c. Sub-issue 3: "Can there be a demarcation point between utilities and third parties?"

The discussion of the "make-ready" model above highlights the difficulty of this question. In part, the answer depends on the context. To take California as an example, as a general matter the California PUC does not assert jurisdiction or control over the provision of EV charging services by non-utilities (i.e., third parties). *See* Appendix A at 1-2. However, in the context of a utility program, like SCE's make-ready program, the California PUC has exercised control by ordering SCE to force Site Hosts to adhere to certain programs requirements, despite the fact that the stations will be owned and operated by non-utility third parties. The Citizens Utility Board report, filed with these comments, echoes this approach, noting that "[a]ny public subsidies and utility support for independent charge station operators should be conditioned on their acceptance of regulatory guidelines."[6]

[6] Citizens Utility Board, *The ABCs of EVs: A Guide for Policy Makers and Consumer Advocates* at 7 (April 2017).

d. Sub-issue 4: "Other states": programs approved and being implemented

In Appendix B, we summarize the three programs now being implemented in California by SCE, SDG&E and PG&E. Although the infrastructure-related programs initiated or proposed by electric utilities across the country have ranged widely, these three programs are the largest approved utility investments of their kind, and are testing multiple approaches to ownership, customer engagement and load management, among other issues. They also require robust data collection and reporting, and should therefore provide learning opportunities for all stakeholders.

III. Conclusion

Sierra Club and NRDC thank the Commission for the opportunity to submit these comments and looks forward to working with the Commission, Staff and other stakeholders to support the growth of EVs in Missouri in a manner that lowers barriers to EV adoption, supports innovation in the EV service provider marketplace, and maximizes the environmental, electric system and utility customer benefits of EVs.

Respectfully submitted,

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Appendix A: State Examples of Jurisdictional Decisions for EV Charging and Standards of Review for Utility Programs

Examples of Jurisdictional Rulings

State	New York
Decision	*Declaratory Ruling on Jurisdiction Over Publicly Available Electric Vehicle Charging Stations*, Case 13- E-0199, In the Matter of Electric Vehicle Policies (filed November 22, 2013), New York Public Service Commission (emphasis added).
Core statutory terms	"The term 'electric plant,' when used in this chapter, includes all real estate, fixtures and personal property operated, owned, used or to be used for or in connection with or to facilitate the generation, transmission, distribution, sale or furnishing of electricity for light, heat or power; and any conduits, ducts or other devices, materials, apparatus or property for containing, holding or carrying conductors used or to be used for the transmission of electricity for light, heat or power." The term "electric corporation," when used in this chapter, includes every corporation, company, association, joint-stock association, partnership and person, their lessees, trustees or receivers appointed by any court whatsoever (other than a railroad or street railroad corporation generating electricity solely for railroad or street railroad purposes or for the use of its tenants and not for sale to others) owning, operating or managing any electric plant… .
Holding	"The Public Service Law does not provide the Commission with jurisdiction over (1) publicly available electric vehicle charging stations; (2) the owners or operators of such charging stations, so long as the owners or operators do not otherwise fall within the Public Service Law's (PSL) definition of "electric corporation;" or, (3) the transactions between the owners or operators of publicly available electric vehicle charging stations, which do not otherwise fall within the PSL's definition of "electric corporation," and members of the public."

State	Massachusetts
Decision	*Order on Department Jurisdiction Over Electric Vehicles, The Role of Distribution Companies in Electric Vehicle Charging and Other Matters*, DPU 13-182-A, Investigation by the Department of Public Utilities upon its own Motion into Electric Vehicles and Electric Vehicle Charging (filed August 4, 2014), Massachusetts Department of Public Utilities.
Core statutory terms	Chapter 164 defines "distribution company" in pertinent part as: "a company engaging in the distribution of electricity or owning, operating or controlling distribution facilities." Chapter 164 defines "electric company" in pertinent part as: "a corporation organized under the laws of the commonwealth for the purpose of making by means of water power, steam power or otherwise and for selling, transmitting, distributing, transmitting and selling, or distributing and selling, electricity within the commonwealth, or authorized by special act so to do….".
Holding	"An owner/operator of EVSE that provides EV charging service is not a distribution company or an electric company within the meaning of G.L. c. 164, § 1; an EVSE owner/operator is selling a service and not electricity within the meaning of G.L. c. 164; and the provision of EV charging service is not within the Department's jurisdiction under G.L. c. 164." "[D]istribution companies subject to the Department's jurisdiction may recover costs associated with ownership and operation of electric vehicle supply

	equipment only as provided herein."

State	California
Case	*Decision in Phase 1 On Whether a Corporation or Person That Sells Electric Vehicle Charging Services To the Public Is a Public Utility*, D.10-07-044 (filed July 29, 2010), California Public Utilities Commission.
Core statutory terms	"Electric plant" defined to include "all real estate, fixtures and personal property owned, controlled, operated, or managed in connection with or to facilitate the production, generation, transmission, delivery, or furnishing of electricity for light, heat, or power, and all conduits, ducts, or other devices, materials, apparatus, or property for containing, holding, or carrying conductors used or to be used for the transmission of electricity for light, heat, or power." "Electrical corporation" defined to include "every corporation or person owning, controlling, operating, or managing any electric plant for compensation within this state, except where electricity is generated on or distributed by the producer through private property solely for its own use or the use of its tenants and not for sale or transmission to others."
Holding	"We conclude that the legislature did not intend that this Commission regulate providers of electric vehicle charging services as public utilities pursuant to §§ 216 and 218." "To the extent an investor-owned utility provides electric vehicle charging services, provision of such services will not affect the utility's status as a public utility."

Examples of Standards of Review for Proposed Utility Investments in Vehicle Charging Infrastructure

State	Massachusetts
Decision	*Order on Department Jurisdiction Over Electric Vehicles, The Role of Distribution Companies in Electric Vehicle Charging and Other Matters*, DPU 13-182-A, Investigation by the Department of Public Utilities upon its own Motion into Electric Vehicles and Electric Vehicle Charging (filed August 4, 2014), Massachusetts Department of Public Utilities.
Holding	"[T]he Department may grant cost recovery for distribution company EVSE ownership and operation in response to a company proposal. For Department approval and allowance of cost recovery, any proposal must: be in the public interest; meet a need regarding the advancement of EVs in the Commonwealth that is not likely to be met by the competitive EV charging market; and not hinder the development of the competitive EV charging market." [Note: In January 2017, a nearly identical form of this standard was codified by the legislature].

State	California
Decision	*Phase 1 Decision Establishing Policy to Expand the Utilities' Role in Development of Electric Vehicle Infrastructure*, D.14-12-079 (filed July 29), 2010), California Public Utilities Commission.
Holding	The Commission opted to evaluate future utility applications on a "case-specific basis," using a balancing test to weigh the benefits of utility ownership of EV charging infrastructure against the competitive limitation that may result from

	that ownership. The Commission's "case-specific" evaluation of utility bids for participation would, at a minimum, evaluate: (1) the nature of the program (for instance, whether the utility proposed to own the EV service equipment); (2) the degree to which the market into which the utility program would enter is competitive, and at what level of concentration; (3) the identification of unfair utility advantages; and (4) if the potential for the utility to unfairly compete is identified, what conditions or regulatory protections may effectively mitigate those unfair advantages. [Note: This test is applied in addition to the state's ratepayer interest test].

State	Oregon
Source	S.B. 1547 (2016)
Core statutory provisions	In reviewing utility proposals for programs and investments in vehicle charging infrastructure, the Commission is obliged to consider whether a given investment will be: prudent; used and useful; reasonably expected to support the electric company's electrical system; reasonably expected to improve the electric company's system efficiency and operational flexibility, including integration of variable generating resources; and reasonably expected to stimulate innovation, competition and choice in the vehicle charging and services market.

Appendix B: California IOU Vehicle Charging Program Details

	San Diego Gas & Electric	Southern California Edison	Pacific Gas & Electric
Commission Approval	Decision 16-01-045 (Jan '16)	Decision 16-01-023 (Jan '16)	Decision 16-12-065 (Dec '16)
Number of EVSE / Ports	3,500	1,000	7,500
Total cost	$45M	$22M	$130M
Charging Type	Level 2 (with some co-located Level 1)	Level 2	Level 2
Market Segments Served	Multi-unit dwellings, workplaces, long-dwell time public locations	Workplaces, MUDs, vehicle fleets, and destination locations	Multi-unit dwellings, workplaces, long-dwell time public locations
Utility Ownership Model	"End-to-end" SDG&E owns EVSE and "make-ready" infrastructure.	"Make-ready" Site Host owns EVSE and SCE owns "make-ready" infrastructure. Site Host-owned EVSE are funded by a rebate that is issued by SCE.	"Hybrid model" PG&E may own EVSE and make-ready infrastructure at multi-unit dwellings, and at any market segment in DACs, where Site Host prefers. Site Host owns EVSE and PG&E owns make-ready infrastructure in other market segments. These EVSE are funded by rebates that are issued by PG&E.
Cost Recovery	SDG&E recovers for, and earns a rate of return on, all capital costs (EVSE and make-ready).	SCE recovers for, and earns a rate of return on, only make-ready infrastructure Rebates for EVSE are treated as expenses; SCE will recover rebate costs, but will not earn a ROR	Capital investments recovered with rate of return; rebate costs recovered as expense.
Site Host Contribution **("skin in the game")**	Site Hosts (e.g. MUD owner) will pay a "participation fee" to ensure that they have "skin in the game."	Site hosts receive a rebate for a percentage of the base cost of the EVSE. Rebate amount is determined by market segment (100% in disadvantaged communities; 50% in MUDs; 25% other).	Depending on the ownership model at a given site, Site Hosts either pay a "participation fee," or are issued a rebate for a percentage of the base cost of the EVSE, which varies by market segment.

EVSE Qualification and Selection	Site Hosts may select EVSE from a list of EV service providers and equipment that is pre-qualified by the utility to meet technical and functional requirements.	SCE will qualify EVSE vendors and actual EVSE. Site Hosts will order EVSE directly from qualified vendors.	Site Hosts may select EVSE from a list of EV service providers and equipment that is pre-qualified by the utility to meet technical and functional requirements.
Electricity Pricing	Site Hosts may either: (a) pass SDG&E's dynamic vehicle-gird integration rate directly to EV drivers; or (b) pay the VGI rate and charge EV drivers a separate rate under their own pricing scheme and load management plan. Site Hosts that opt to receive the rate themselves (option b, above) must submit load management plans to the utility that identify the intended pricing and load management strategies, and identify how they will meet the guiding principles of the program, which include renewable integration and opportunities for drivers to maximize fuel cost savings. The utility must approve the plans.	Site Hosts take service on a time-of-use rate for energy costs at charging stations. Site Hosts determine pricing for EV drivers.	Site Hosts take service on a time-of-use rate for energy costs at charging stations. Site Hosts may either: (a) pass PG&E's TOU rate directly to EV drivers; or (b) pay the TOU rate and charge EV drivers a separate rate under their own pricing scheme and load management plan. As with SDG&E's program, all Site Hosts that opt for their own pricing scheme must submit load management plans to the utility for approval.
Add'l load management		Demand response program to be implemented within 3 years of approval.	Demand response program to be implemented within 3 years of approval.
EVSE maintenance	SDG&E will contract with third parties to build, install, operate and maintain EV charging facilities under a service level agreement, to SDG&E's VGI specifications, and under SDG&E's overall supervision.	Site Hosts are responsible for EVSE maintenance.	PG&E will select operation & maintenance vendors through an RFP process. Where PG&E owns the EVSE, PG&E will choose the O&M vendor and pay for O&M. Where Site Hosts own the EVSE, they will choose an O&M vendor from PG&E"s approved vendor list and pay costs.
Deployment in disadvantaged communities	At least 10%	At least 10%	At least 15%, with a stretch goal of 20%
Program Advisory Council	Yes	Yes	Yes