BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of a Working Case to Evaluate Potential Mechanisms for Facilitating Installation of Electric Vehicle Charging Stations	))))	File No. EW-2019-0229

PARTY SUBMISSION OF THE AMERICAN FUEL & PETROCHEMICAL MANUFACTURERS AND MISSOURI PETROLEUM MARKETERS AND CONVENIENCE STORE ASSOCIATION IN RESPONSE TO THE REQUEST FOR ADDITIONAL COMMENTS

The American Fuel & Petrochemical Manufacturers ("AFPM") and the Missouri Petroleum Marketers and Convenience Store Association ("MPCA")[1] respectfully submits these comments in response to the Order Inviting Comments ("Order") filed by the Missouri Public Service Commission ("Commission") on March 22, 2019, in the above captioned matter ("Working Case"). AFPM thanks the Commission for opening this Working Case, and for the opportunity to participate in this important discussion. Building on its previously submitted comments on March 20, 2019, and participation at the March 21, 2019 workshop, AFPM is providing the following comments for the Commission's further consideration. MPCA submitted comments on March 14, 2019 (*see* Dkt. 7), and hereby joins the comments being submitted by AFPM.

As discussed below, AFPM believes there are no costs or categories of costs associated with the development of an electric vehicle ("EV") charging network that are appropriate for, or that should be eligible for, subsidization by utilities or otherwise eligible for special tariff, accounting or ratemaking treatment. Further, AFPM is concerned that the Commission may allow the large

[1] For convenience, references to "AFPM" within this document are intended to refer to both AFPM and MPCA, except where context necessitates otherwise.

majority of ratepayers to fund the significant costs of a service that is available in the private market, is not wanted or utilized by the overwhelming majority of ratepayers, and subsidizes the wealthiest of all ratepayers. Finally, AFPM believes the Commission should encourage a free and equitable transportation fuels market, unburdened by anti-competitive forces, where there is an opportunity for all who wish to enter the market to compete on a level playing field, which will help ensure lower prices for the benefit of all customers.

I. Background

AFPM is a nonprofit trade association organized under the laws of Delaware, with a principal office at 1800 M Street, NW Suite 900, North, Washington, DC 20036. AFPM has more than 300 member-companies, among which many purchase crude oil, process it into fuels or manufactured petroleum products, then transfer these products using a complex transportation network to distributors and retailers like gas stations and convenient stores, and ultimately to the end consumer. AFPM's member companies own and operate 117 refineries and more than 230 petrochemical facilities; refineries that manufacture 96 percent of the refined petroleum products made in the United States. As of 2017, petroleum supplied approximately 92 percent of U.S. transportation fuels,[2] and is anticipated to continue to provide approximately 75% of U.S. transportation fuels in 2050.[3] AFPM's members are high-technology American manufacturers of

[2] U.S. Energy Information Admin., Use of Energy for Transportation, https://www.eia.gov/energyexplained/index.php?page=us_energy_transportation (last accessed April 26, 2019). This figure includes ethanol, which is treated as a biofuel by the U.S. Energy Information Admin.

[3] U.S. Energy Information Admin., Annual Energy Outlook 2019, 118 (Jan. 24, 2019), *available at* https://www.eia.gov/outlooks/aeo/pdf/aeo2019.pdf (last accessed April 26, 2019).

virtually the entire U.S. supply of gasoline, diesel, jet fuel, other fuels and home heating oil, as well as the petrochemicals used as building blocks for thousands of vital products in daily life.

For purposes of the Working Case, AFPM has numerous member companies in Missouri which utilize electricity generated and transported by Union Electric Company d/b/a Ameren Missouri ("Ameren") and Kansas City Power & Light ("KCP&L"), and are ratepayers by definition.

MPCA is a 300-plus member statewide trade association located in Jefferson City, which represents the majority of Missouri's convenience stores, gas stations, truck stops, and petroleum marketers, as well as their many suppliers and vendors. Many MPCA members are small, second or third generation family-owned businesses, and many MPCA members have convenience stores, gas stations, and truck stops located at or near interstate and highway exits.

a. EV Charging Station Regulatory History and Court Action

On July 1, 2016, KCP&L proposed tariffs to the Commission seeking in part the inclusion of EV charging stations ("EVCS") within KCP&L's rate base.[4] In its May 3, 2017 Report and Order, the Commission denied KCP&L's request, finding EVCS are not an "electric plant" under Missouri law, and that allowing inclusion of EVCS within KCP&L's rate base would "distort what would otherwise be a competitive market" because the operation of EVCS is not an "industr[y] in which natural monopoly conditions exist," particularly in the Kansas City area, where the Kansas Corporation Commission had similarly "'denied KCP&L's request to regulate [EVCS].'"[5]

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[4] *See In re: Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service*, ER-2016-0285.

[5] *Kansas City Power & Light Co. 's Request for Auth. to Implement a Gen. Rate Increase for Elec. Serv. v. Missouri Pub. Serv. Comm'n*, 557 S.W.3d 460, 465 (Mo. Ct. App. 2018).

On appeal, the Missouri Court of Appeals, Western District, ruled that EVCS are an "electric plant" under § 386.020(14) RSMo., and, after comparing EVCS to self-service gas stations within its opinion, ultimately concluded "nothing in the statutory definition of 'electric plant' authorizes the Commission to exclude equipment from the definition based on [public policy] concerns."[6]

However, the Court of Appeals also recognized the Commission's unique authority

> to address the concerns expressed in its Report and Order. Where particular utility activities fall within the Commission's regulatory jurisdiction, the Commission has the authority to review the prudence of those activities; it may have authority to approve or disapprove particular expenditures before they occur; and it may have the ability through rate-design mechanisms to specify that the costs of particular activities will be borne solely by particular classes of ratepayers.[7]

In other words, the Court's conclusion "does not leave the Commission without remedy; to the contrary, it provides a basis for the Commission to exercise its full range of regulatory authorities with respect to those stations."[8]

On February 22, 2018, Ameren filed an application seeking, in part, a multi-part tariff program collectively referred to as the "Charge Ahead" program.[9] Included within the Charge Ahead – Electric Vehicles Program (Tariff Tracking No. YE-2018-0105) was the Corridor Charging Sub-Program. The purpose of the Sub-Program is to:

> provide for the development of a public minimum practical network of EV charging infrastructure, including Level 3 DCFC, along the highway corridors throughout the Company's service territory. The sub-program is designed with a reverse auction approach to determine the amount of incentives that would be available for each site with a cap of $240,000 per site, or $360,000 per site for

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6 *Id.* at 472.
7 *Id.*
8 *Id.* at 473.
9 *See In re: Application of Union Electric Company d/b/a Ameren Missouri For Approval of Efficient Electrification Program*, ET-2018-0132.

> charging ports with a capacity of 150 kW or greater. Items eligible for incentives are the line extension, demand mitigation solutions, "Make Ready" costs, and the upfront cost of charging equipment.[10]

The Commission approved a "tracker" deferral accounting mechanism of the program cost recovery, which "serves to 'sync up' the costs of the program with the benefits or revenues of the added load and provides 'a smoother pattern of rate impacts to' ratepayers. This is a benefit to the ratepayers."[11] However, because the Commission did not approve the entire program and Ameren did not provide calculations broken down for sub-program, "the Commission cannot determine from the evidence presented what the appropriate amortization period would be if this expense is allowed to be amortized in the next rate case."[12] Rather, those determinations will be made in Ameren's next rate case.[13]

During the pendency of the Sub-Program, Ameren is required to track and report usage data annually. This data includes incentives provided; customers engaged; buildout of EV charging infrastructure achieved; station utilization; prices paid by EV drivers; site host pricing models and strategies; equipment providers selected; installation costs by equipment provider; and outage incidents by equipment provider.[14]

The Commission found that the inputs and assumptions for the other Charge Ahead EV Sub-Programs were "unreasonable, unsupported, or unknown," and thus it could not find that the Sub-Programs were reasonable or in the public interest.[15] Likewise, the Commission found that

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[10] Report and Order, 12, ET-2018-0132, Dkt. 150 (February 6, 2019).
[11] *Id.* at 26.
[12] *Id.* at 28.
[13] *Id.* at 30.
[14] *Id.* at 35.
[15] Report & Order, 19, ET-2018-0132, Dkt. 150.

another of Ameren's proposed programs, the Charge Ahead Business Solutions Program, "is not just and reasonable or in the public interest."[16]

On October 31, 2018, the Commission approved a stipulation and agreement ("Stipulation") between KCP&L, KCP&L Greater Missouri Operations Company ("GMO"), Staff of the Missouri Public Service Commission ("Staff"), and other parties.[17] The Stipulation provides that any assets of KCP&L's Clean Charge Network ("CCN") not previously included within KCP&L's and GMO's rate bases would now be included.[18] The Stipulation further provides that a new customer class for EVCS would be established, and no other customer class "shall bear any costs" through base rates or any rate adjustment mechanism.[19] Finally, the Stipulation provides that KCP&L and GMO may not expand the CCN without Commission approval.[20]

While courts have determined that EVCS can be part of an electric plant under Missouri law, to be included in the rate base, the Commission must still find that they benefit the public interest.[21] Because EVCS benefit only a very small fraction of EV owners and their costs are largely borne by consumers that do not drive EVs, they are properly determined to be outside the public interest and their expenses should not be included in the rate base.

b. The Commission's Working Case

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[16] *Id.* at 41.

[17] Order Approving Stipulations and Agreements, 3, *In re: Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service*, ER-2018-0145 & ER-2018-0146, Dkt. 467 (Oct. 31, 2018).

[18] *Id.* at App. 1, Non-Unanimous Partial Stipulation and Agreement, § 6.

[19] *Id.*

[20] *Id.*

[21] § 393.140(2), RSMo. Similarly, AFPM notes utilities have "the burden of proof to show that [any] increased rate or proposed increased rate is just and reasonable . . . ." § 393.150, RSMo.

On February 14, 2019, the Commission opened the instant matter with the filing of its Order Opening a Working Case Regarding EV Charging Stations and Directing Staff to Schedule a Workshop Meeting ("Opening Order"). The stated purpose of the Working Case is to "evaluate potential models for facilitating installation of [EVCS]."[22] These models include:

1) A model similar to the one stipulated to by the parties and approved by the Commission in Kansas City Power & Light Company's last rate case, where the company can own and operate the charging stations.

2) A "Make Ready" tariff proposal that includes an option to waive line extension charges from a customer seeking a line extension for separately metered EV charging that meets specific public policy considerations.

3) An alternate incentive program where program parameters, implementation, and cost recovery would be evaluated and defined in the context of a future rate proceeding.[23]

The Opening Order further directed Staff to file notice of the scheduled date and time for a workshop.[24]

Staff filed its Notice of Workshop on February 15, 2019, which scheduled the workshop to occur on March 21, 2019. On March 5, 2019, Staff filed a Request for Party Submissions, which requests interested parties file comments stating their positions on "the categories of costs that should be eligible for subsidization by utilities or should be eligible for special tariff/accounting/ ratemaking treatment under a 'make ready' approach,"[25] as well as opinions on whether specific,

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[22] Opening Order, 1, *In re: A Working Case to Evaluate Potential Mechanisms for Facilitating Installation of Electric Vehicle Charging Stations*, EW-2019-0229, Dkt. 2 (Feb. 14, 2019).
[23] *Id.* at 2 (internal footnotes omitted).
[24] *Id.* at 3.
[25] Request for Party Submission, EW-2019-0229, at ¶ 3 (March 5, 2019).

enumerated costs "should be eligible for subsidization by utilities or eligible for special tariff/accounting/ratemaking treatment under a 'make ready' approach."[26] These costs include:

Internal utility costs
- a. Necessary Distribution/Transmission system upgrades to existing infrastructure
- b. Internal utility costs of distribution extension as allocated
- c. Distribution equipment from existing infrastructure to service drop
- d. Transformer at service drop
- e. Service drop
- f. Meter
- g. Capitalized labor associated with the above
- h. Property taxes associated with the above
- i. Insurance associated with the above

Customer costs
- a. Customer's portion of construction allowance
- b. Infrastructure from meter to charger
- c. Charger
- d. Charger installation
- e. Charger awning/kiosk construction
- f. Site engineering - electrical design work for charging facilities
- g. Pavement of charging area
- h. Other non-Charger electrical (lighting, kiosk)
- i. Other on-site service connections (service line to C store, restrooms)
- j. Other on-site construction (C store, restrooms)
- k. Construction and/or pavement of access from public roadway
- l. Pavement of parking not in charging area
- m. Site drainage
- n. Site engineering - electrical design work for non-charging facilities
- o. Site engineering - pavements, drainage
- p. Permitting of civil engineering of site
- q. Permitting of charger installation
- r. Engineering/permitting of other non-Charger electrical (lighting, kiosk)
- s. Engineering/permitting of other non-Charger electrical (C store, restrooms)
- t. Land cost
- u. Land acquisition cost (title, etc.)
- v. Land acquisition process cost (real estate search and evaluation)
- w. Capitalized labor associated with any of the above
- x. Property taxes associated with any of the above
- y. Insurance associated with any of the above[27]

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[26] *Id.* at ¶ 4.
[27] *Id.*

On March 6, 2019, the Commission issued its Order Inviting Participants to File Responses and Notice of Scheduled Workshop Meeting, inviting interested parties to submit information in response to the Request for Party Submissions.[28]

On March 20, 2019, AFPM filed joint comments with the Missouri Petroleum Council in the instant matter, in response to Staff's Request for Party Submissions.[29]

Following the workshop, Staff issued a Request for Additional Comments on March 22, 2019, which was immediately followed by an Order from the Commission inviting stakeholders' positions on the following topics identified in the Request for Additional Comments:

a. Additional thoughts stemming from common themes of the workshop discussions:
    i. Pilot Programs
    ii. Data Gathering
    iii. Customer Education
    iv. Cost/Benefit Analysis
    v. Adoption Rates/Needs of Customers at Present
    vi. Cost Recovery/Rate Design/Incentives
    vii. Flexibility and Choice
b. Any comments on the questions Staff proffered at the March 21 workshop:
    i. What is the "Make Ready Model" – what should be included in the "Make Ready"?
        1. Line Extension for EV Charging Station
        2. Option to waive line extension charges for separately metered EV charging stations that meet specific public policy considerations.
        3. What public policy considerations must be met for an EV charging station to receive the incentive?
    ii. Ownership Models
        1. Third Party
        2. IOU
            a. IOU Ownership With/Without Subsidies

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[28] Order Inviting Participants to File Responses and Notice of Scheduled Workshop Meeting, EW-2019-0229, Dkt. 5 (March 6, 2019).

[29] *See* Comments submitted by the Missouri Petroleum Council and the American Fuel & Petrochemical Manufacturers regarding the PSC's request for party submissions regarding EV Charging Stations, EW-2019-0229, Dkt. 13 (March 20, 2019).

iii. Potential Policies for EV Charging Infrastructure Implementation That Provides the Most Benefit to the Grid

1. What policies will promote deployment of EV charging stations?
2. What type of technology/charging equipment needs to be utilized?
    a. Energy Star Certified EV Charging Station Requirements
        i. Network Communications for EV Charging Stations
        ii. Commercial – Level 2 and DC Fast Charging
        iii. Residential – Level 2 Charging Stations
3. What is the interoperability of the EV charging station?
4. Energy Storage with EV charging stations for mitigation of demand charges.
5. What are the anticipated system impacts of EV charging on-peak on the grid?
6. What are the potential impacts on the local distribution system?
    a. Distribution System Upgrade Requirements
        i. Smart Meter Requirements
7. Ratemaking Policies – What will facilitate the most benefit for the grid?
    a. Time of Use Rates Specific to EV Charging

c. The need for a rulemaking to address electric vehicle charging and the infrastructure to support it. Stakeholders may also submit exemplar rules from other jurisdictions.[30]

In sum, AFPM believes the Commission's initial premise is flawed. Rather than assuming some or any category of cost associated with EVCS is appropriate for subsidization and jumping ahead to ask which, AFPM believes the Commission should begin by asking whether any cost is appropriate for subsidization. AFPM believes a good faith review of the facts will show there are no costs or categories of costs associated with the development of an EVCS network that are appropriate for, or that should be eligible for, subsidization by utilities or otherwise eligible for special tariff, accounting or ratemaking treatment. Further, AFPM believes any costs related to EVCS should be borne solely by their owners, operators and users, and not by ratepayers who do not own and/or operate electric vehicles.

[30] Request for Additional Comments, ¶ 2, EW-2019-0229, Dkt. 18 (March 22, 2019).

II. AFPM Responses to Staff's Requested Information

Staff requested comments on more than a dozen specific topics.[31] AFPM provides the following responses, based on the justifications that follow.

a. Pilot Programs

It is inappropriate for the Commission to consider or approve programs for services that are either not subject to regulation by the Commission, or, where the Commission has discretion to regulate, are provided by the competitive market and are readily available to any customer willing to obtain the service at its current fair market rate. It is indisputable that there is a competitive market ready to supply EVCS to any ratepayer, homeowner, commercial property owner, business, association, municipality, etc., as long as that entity is willing to pay for that service. In fact, it is highly inappropriate to invoke the term "pilot program" for any service that is widely demonstrated and available on the market as is the case with EVCS, which have been deployed extensively within the state, the region, the nation, and around the world. The U.S. Department of Energy estimates there are currently over 20,000 publicly accessible charging stations in the United States and 524 in Missouri alone.[32] These figures do not include the many hundreds of thousands of *private* charging stations that have been installed across the nation to support the existing fleet of more than 1 million EVs on the road today.[33] Moreover, consider these findings from the National Academy of Sciences that:

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[31] *Id.*

[32] U.S. Dept. of Energy, Alternative Fuels Data Center, *available at* https://afdc.energy.gov/fuels/electricity_locations.html#/find/nearest?fuel=ELEC&country=US (last accessed April 25, 2019).

[33] Edison Foundation, "Electric Vehicle Sales Forecast and the Charging Infrastructure Required Through 2030" (November 2018), *available at* http://www.edisonfoundation.net/iei/publications/Documents/IEI_EEI%20EV%20Forecast%20Report_Nov2018.pdf (last accessed April 25, 2019).

> There are no serious technical barriers to the installation of charging infrastructure at most residences that have access to garages or carports. Charging at such residences would meet the needs of all foreseeable PHEVs and of most BEVs that have ranges of up to 100 miles. The main barriers to the widespread adoption of residential charging of PEVs appear to be the cost and the effort of installing the wiring and charging apparatus. . . . [34]
>
> [T]he high cost of installing public charging stations and the little revenue obtained from providing electricity present challenges for developing sustainable business models. . . . [35] [and]
>
> Regulating third-party entities (nonowner, nonutility charging service providers) as utilities could increase operating costs and decrease business-model flexibility. Furthermore, the role and scope allowed to utilities (as opposed to third-party entities) in providing charging equipment are unclear. [36]

Clearly, the primary barrier to EVCS is the lack of value compared to the cost, particularly when compared to alternative means of transportation. Moreover, as noted by the National Academies of Science, there are strong arguments that regulation of EVCS will further increase those costs. As such, it is inappropriate for the Commission to consider or approve spreading the cost of any EVCS infrastructure across ratepayers, whether it is a so-designated "pilot program" or not.

b. Data Collection

The utilities argue that the EVCS pilot program is needed to foster data collection. This argument is without merit. U.S. taxpayers, including Missourians, have already generously funded the largest EVCS demonstration project and data collection in the world, and hundreds of other

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[34] National Research Council, National Academies of Science, Overcoming Barriers to Electric-Vehicle Deployment Interim Report, 4 (2013), *available at* https://www.nap.edu/catalog/18320/overcoming-barriers-to-electric-vehicle-deployment-interim-report (last accessed April 25, 2019) (*hereinafter* "NRC Interim Report"); *see, also, id.* at 43.

[35] *Id.* at 5.

[36] *Id.* at 6.

studies have been conducted that outline EVCS usage and grid impacts.[37] This data, tracking the charging of 8,300 EVs over several years, show that more than 96% of all charging occurs at residences and workplaces,[38] undermining the basis for the proposed Corridor Charging Sub-Program. Moreover, the data showed that the typical public EVCS, even when heavily subsidized, was occupied for 0.2 charging events per day on average, *i.e., only 1.4 charging events per week.*[39]

This enormous amount of data belies any suggestion that these costly installations represent a prudent use of ratepayer funds. That said, any and all data collected within Missouri utility service territory must be publicly available if ratepayers are funding the EVCS development and deployment. It is important to point out that, if this market research is of such importance and value to the company, there is nothing prohibiting shareholders from paying for the expense of developing such information. At a minimum, all data Ameren is required to provide associated with the Corridor Charging Sub-Program should be required of any electric utility receiving subsidies from its ratepayers for an EVCS network.[40] Among the data collected, ratepayers must have access to: all costs to purchase, install, maintain, and operate each EVCS installation, including the costs of any upgrades to the distribution circuits or transformers; the timing/length of every charging event at each EVCS; the rate (cents/kWh) paid for each charging event; cumulative utility revenue generated from each EVCS; utility rate of return received for each EVCS; utility depreciation

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[37] *E.g.*, U.S. Department of Energy, Idaho National Laboratory, Plugged In: How Americans Charge Their Electric Vehicles, *available at* https://avt.inl.gov/sites/default/files/pdf/arra/PluggedInSummaryReport.pdf (last accessed April 25, 2019).

[38] *Id.* at 8.

[39] *Id.* at 14.

[40] *See, supra*, n.14 and accompanying text.

claimed for each EVCS; utility cost recovery for each EVCS; and, any federal, state, and local taxpayer subsidies for each EVCS.

c. Consumer Education

The customer education programs contemplated in the pilot are nothing more than thinly disguised marketing expenditures seeking to increase demand for EVCS. These programs only benefit electric utility shareholders, not customers. These programs should be identified as such.

d. Cost/Benefit Analysis

The Commission has previously found the costs of EVCS networks outweigh their benefits, a finding that remains unaffected by the Court of Appeals' opinion in *Kansas City Power & Light Co. 's Request for Auth. to Implement a Gen. Rate Increase for Elec. Serv. v. Missouri Pub. Serv. Comm'n*, 557 S.W.3d 460 (Mo. Ct. App. 2018). Moreover, it should be noted that Ameren's request for $240,000-360,000 per EVCS is 200-300% higher than the installation and operating costs cited by the National Academies of Science.[41] AFPM respectfully requests the Commission provide justification and an opportunity to comment on any change in its prior conclusions as they relate to ratepayer-subsidized EVCS. As part of any future evaluation of the cost of EVCS, the Commission should include:

a. EVCS unit hardware costs, including:
    i. EVCS unit;
    ii. Additional hardware (*e.g.*, electric usage sub-meter, radio-frequency identification card reader, payment processing, distribution system "smart meters" to track, communicate and respond to changing circuit power flows); and
    iii. Hardware extended warranty(ies);

[41] Transportation Research Board and National Research Council, Overcoming Barriers to Deployment of Plug-in Electric Vehicles 92 (2015), a*vailable at* https://doi.org/10.17226/21725 (Cost to install and maintain for three years public DC fast-charging stations: $109,500 to $122,000 each) (last accessed April 25, 2019) (*hereinafter* "NRC 2015 Report").

b. Installation costs, including:
    i. Contractor labor and materials;
        1. Connecting EVCS to the electrical service (*e.g.*, panel work, trenching/boring, line extension, and repaving parking);
        2. New electrical service or upgrades (*e.g.*, transformers, distribution circuits);
        3. Meeting Americans with Disabilities Act requirements;
        4. Traffic protection;
        5. Signage; and
        6. Lighting;
    ii. Permitting and inspection;
    iii. Engineering review and drawings; and
    iv. Repair labor warranty;
c. Land/parking space purchase or lease, including any applicable local property taxes;
d. Incentive credits (to reduce EVCS equipment or installation costs), including:
    i. Rebates;
    ii. Tax credits/exemptions;
    iii. Grants; and
    iv. Loans;
e. Operation and maintenance costs:[42]
    i. Electricity consumption (cents/kWh) and demand charges ($/kW), including
        1. Incentive charging credits (below market rates) to EV owners, and
        2. Renewable energy credit (REC) purchases
    ii. EVCS network subscription to enable additional features;
    iii. Utility overhead and management time;
    iv. Billing transaction costs;
    v. Preventative and corrective maintenance on EVCS unit;
    vi. Repairs (scheduled and unscheduled); and
    vii. Fire and emergency response plans and training.

In addition to the costs above that are directly attributable to the EVCS, the Commission's consideration of the public interest should recognize that Missourians continue to be forced to subsidize EV owners through various existing programs, including:

[42] AFPM notes operation and maintenance costs were apparently not contemplated by Staff for consideration, given the absence of any reference to these cost classes in either the Request for Party Submissions or Request for Additional Comments. *See, supra*, nn.23, 27, and accompanying text.

1. Federal taxpayer funded EV buyer credits of up to $7500 per EV;[43]
2. Federal and State taxpayers offsetting the revenue lost from liquid fuel taxes that are not paid by EV drivers.
    i. For each Missouri EV traveling 12000 miles per year that replaces a gasoline vehicle with a fuel economy of 25 miles per gallon, federal and state taxpayers must offset $171 in lost liquid fuel taxes per EV per year;
3. Federal grants/stimulus to fund the installation of over 12,000 public EVCS;
4. State/city taxpayer credits, grants, and tax exemptions;
5. Federal Department of Transportation Corporate Average Fuel Economy regulations that result in gasoline/diesel car buyers unknowingly paying hundreds to thousands of dollars in price premiums on their vehicle to subsidize EV manufacturers and EV buyers;[44]
6. U.S. Environmental Protection Agency ("EPA") regulations for mobile source greenhouse gas emissions that force buyers of gasoline/diesel vehicles to unknowingly pay a premium on their vehicles to fund emission 'multiplier' credits to subsidize EV manufacturers and EV buyers at costs of approximately $2000 per EV;[45]
7. Regulations imposed by the State of California and adopted by nine other states (Connecticut, Maine, Maryland, Massachusetts, New York, New Jersey, Oregon,

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[43] *See* U.S. Dept. of Energy, Federal Tax Credits for All-Electric and Plug-in Hybrid Vehicles, https://www.fueleconomy.gov/feg/taxevb.shtml (last accessed April 29, 2019).

[44] The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks, 83 Fed. Reg. 42986, 43084-85 (Aug. 24, 2018).

[45] *Id.* at 43084.

Rhode Island, Vermont) and approved by the EPA[46], that allows California to force U.S. auto manufacturers to sell an increasing number of EVs every year. These mandated vehicles cost more than the public is willing to pay, forcing manufacturers to buy 'ZEV' credits from EV manufacturers that effectively subsidize each EV sold in the U.S. by thousands of additional dollars, at the expense of gasoline/diesel car buyers.[47] "Because the ZEV program mandates sales of a certain percentage of [Plug-in]EVs, its impact could be larger than the incentives under the federal CAFE-GHG national program."[48]

The Commission's public interest determinations might also consider the following costs:

1. EV price premiums;

    i. Management consulting firm, McKinsey & Co., recently noted:

> there is a problem: today, most [original equipment manufacturers ("OEMs")] do not make a profit from the sale of EVs. In fact, these vehicles often cost $12,000 more to produce than comparable vehicles powered by internal-combustion engines (ICEs) in the small- to midsize-car segment and the small-utility-vehicle segment. What is more, carmakers often struggle to recoup those costs through pricing alone. The result: apart from a few premium models, OEMs stand to lose money on almost every EV sold, which is clearly unsustainable.[49]

2. Battery replacement costs:

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[46] 42 U.S.C. § 7543(b)(1).

[47] *See* 13 Cal. ADC § 1962.2(d)(5)(E)(1) (credits for hydrogen fuel cell vehicles "delivered for sale and placed in service in California or in a Section 177 state"); § 1962.2(d)(5)(E)(2) ("Optional Section 177 Compliance Path" providing up to 50% credits for certain types of ZEVs sold in Section 177 states).

[48] NRC 2015 Report, *supra* n.41, at 116.

[49] McKinsey & Co., Making Electric Vehicles Profitable (March 2019), https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/making-electric-vehicles-profitable?mod=article_inline (last accessed April 30, 2019). In effect this amounts to a hidden subsidy for EV manufacturing that may be passed on to car purchasers. *See, also, infra* n.74 and accompanying text regarding hidden subsidies on ratepayers associated with utility transmission and distribution system upgrades due to increased demand from EVs.

i. While the overwhelming majority of EVs on the road today are within their 8-year (or 100,000 mile) manufacturer warranty, the cost for a replacement battery will depend on the size of the battery and ranges from $5,500 (plus installation) for a small Nissan Leaf 24 kWh battery, to nearly $16,000 (plus installation)[50] for a 60 kh Chevy Bolt battery, to $20,000 (plus installation)[51] for a 65 kWh Tesla Model S battery.

3. Battery 'disposal' costs:

   i. Currently, the extent of battery-recycling infrastructure for EV car batteries is limited.[52] To date, it is AFPM's understanding that automakers transfer any damaged, defective, or spent batteries to third parties for indefinite storage. AFPM is not aware of any U.S.-based recycling plant and the recycling costs currently appear to be cost-prohibitive. Nor is AFPM aware of any landfill disposal of any EV lithium-ion batteries. Most batteries are shipped to a third party for disassembly and testing of cells/modules, some of which are being repurposed for secondary market uses, extending their life and further delaying any ultimate disposal or recycling. It is unclear if the secondary market users are liable for disposal.

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[50] J. Voelcker, Greencarreports.com, How Much Is a Replacement Chevy Bolt EV Electrical-Car Battery? (June 9, 2017), https://www.greencarreports.com/news/1110881_how-much-is-a-replacement-chevy-bolt-ev-electric-car-battery (last accessed April 29, 2019).

[51] InsideEVs.com, 3 Ways to Ruin Your Tesla Battery, Plus What It Costs To Replace It (Aug. 27, 2018), https://insideevs.com/news/339193/3-ways-to-ruin-your-tesla-battery-plus-what-it-costs-to-replace-it/ (last accessed April 30, 2019).

[52] U.S. Dept. of Energy, Alternative Fuels Data Center, Batteries for Hybrid and Plug-In Electric Vehicles, https://afdc.energy.gov/vehicles/electric_batteries.html (last accessed April 29, 2019).

4. Higher insurance premiums for EVs;[53]

5. Charging conversion losses:

    i. Greater than 10 percent of the electricity consumed at EVCS during charging does not translate to any useful output or vehicle miles traveled. A study by the University of Delaware and one of the country's top EVCS suppliers shows charging conversion losses of 12.38% at 40 Amps and 17.22% at 10 Amps.[54]

6. Electric transmission and distribution line losses:

    i. Five percent of electricity generated, including to supply EVCS, is consumed by energizing the transmission and distribution lines and does not translate to any useful output or vehicle miles traveled.[55]

7. EV batteries suffer losses in efficiency of 41+% in cold weather (20 degrees F and below) and losses of 17+% in hot weather (95 degrees F and above), and translating to much higher electricity consumption and cost per vehicle mile traveled during those periods.[56]

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[53] Nerdwallet.com, Why Car Insurance Costs More for Electric Vehicles (Oct. 1, 2015), https://www.nerdwallet.com/blog/insurance/car-insurance-quotes-electric-cars/ (last accessed April 29, 2019).

[54] E. Apostolaki-Iosifidou, *et al.*, Energy, Measurement of Power Loss During Electric Vehicle Charging and Discharging Tbl. 7 (May 15, 2017), *available at* https://www.sciencedirect.com/science/article/pii/S0360544217303730 (last accessed April 30, 2019).

[55] U.S. Energy Information Admin., How Much Electricity is Lost in Electricity Transmission and Distribution in the United States? (Jan. 9, 2019), https://www.eia.gov/tools/faqs/faq.php?id=105&t=3 (last accessed April 23, 2019).

[56] R. Stumpfe, Thedrive.com, Cold Weather Can Cut an Electric Car's Range by More Than 40 Percent: Report (Feb. 7, 2019), https://www.thedrive.com/news/26383/cold-weather-can-cut-an-electric-cars-range-more-than-40-percent-report (last accessed April 30, 2019).

8. EVs are typically purchased by high-income households as a second or third vehicle.[57]

On the benefits side of any EVCS assessment, the Commission should include zero benefits for the oft-promoted, and never delivered, utility talking point that EVs can be used to store power and resell that power to balance the grid. As the National Academies of Sciences notes, "issues associated with customer access to their vehicles and effects on battery life will need to be resolved before vehicles can be fully integrated into the utility of the future."[58]

e. Utilization

AFPM's evidence will show that EVs are not expected to reach the adoption rates presented by KCP&L. Barring unending, even larger EVCS subsidies, AFPM believes efforts to support EVCS will fail as the technology fails to reach a sufficient adoption rate by the public that would justify the cost of the infrastructure. Moreover, as noted above, the world's largest EVCS study found that more than 96% of charging occurs at home and the workplace and the typical public charging facility is visited only 1.4 times per week,[59] demonstrating the lack of customer need for costly, subsidized, public charging infrastructure.

For example, utilization of utility EV charging infrastructure was of such concern to California regulators they lamented

> it would be foolhardy to authorize a pilot project . . . using ratepayer money, without some assurance that EV drivers will be using these site installations and

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[57] *See*, NRC Interim Report, *supra* n.34, at 18 ("If someone has access to a second vehicle, the small range of most BEVs might not constitute as substantial a value loss as it will for a household that has only one vehicle." *Id.*).
[58] NRC 2015 Report, *supra*, n.41, at 107.
[59] *See*, *supra*, n.37, at 14.

charging stations on a frequent basis, and that such a deployment will contribute materially to the widespread adoption of EVs for everyday transportation.[60]

Despite our comments, should the Commission approve rate recovery of EV charging infrastructure, it should tie such approval to performance metrics beyond existing projections for growth of electric vehicle deployment. In addition, the National Academies of Sciences concluded that the "major barriers to consumer adoption of [plug-in] EVs"[61] include numerous non-EVCS-related issues, such as EVs are more expensive than conventional vehicles; cost and timing of battery replacement; time required to charge and actual (non-subsidized) electricity cost; risk of fire; and low resale value. Collectively, these issues are much bigger impediments to EV adoption than the provision of heavily subsidized EVCS to reduce 'range anxiety' for a small number of EV drivers, and further underscore that providing subsidized EVCS is not in the public interest.

f. Cost Recovery, Rate Design, and Incentives

On the combined topics of cost recovery, rate design, and incentives, cost recovery from non-EVCS customers should be prohibited.

i. Cost Recovery

Rates charged to EVCS customers should cover the true cost for production, transmission and distribution of the electricity, in addition to any costs related to EVCS infrastructure outlined above. A study by the University of California Los Angeles finds that in all scenarios they considered, the net present value of EVCS were negative. The least negative scenario, Level 1

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[60] Decision Regarding Underlying Vehicle Grid Integration Application and Motion to Adopt Settlement Agreement, *In re: Application of San Diego Gas & Electric Co. (U902E) for Approval of its Electric Vehicle-Grid Integration Pilot Program*, D.16-01-045, 103 (P. Util. Comm. Cal., Jan. 28, 2016), *available at* http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M158/K241/158241020.PDF (last accessed April 30, 2019).

[61] NRC 2015 Report, supra, n.41, at 51.

charging stations requiring 8-plus hours for a full charge, requires customers to pay more than 20 cents/kWh to breakeven.[62] By way of example, the costs of Level 1 chargers are a tiny fraction of the costs that Ameren is proposing for DC fast chargers, suggesting that any fair-market rate charged by Ameren for any future fast charging stations must be many multiples higher than 20 cents/kWh. And, when we examine prices offered by the private sector to use Level 2 and DC fast charging stations, they range from 39-69 cents/kWh on the Blink Network, for example.[63]

ii. Rate Design

It is also critically important that the Commission understand the true costs buried in the Ameren proposal. Fees charged by EVCS owners to EV users include monthly utility demand charges (typically in the range of $15/kW) based on summer/winter peak power drawn from the charging station.[64] For example, for the 150 kW charging stations that Ameren proposes, the monthly demand charge (just to offer the service, prior to supplying any electricity to any customers) would be 150kW multiplied by ~$15/kW, for a charge of $2,250/month, or $27,000 per year. In other words, if each Ameren DC fast charging station receives one EV customer per day, that customer should pay a $74 demand charge, prior to "filling up," to cover the cost of the generating capacity to supply that EVCS. The cost of the generation is separate and additional.

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[62] D. Chang, *et al.*, UCLA Luskin School of Public Affairs, Financial Viability Of Non-Residential Electric Vehicle Charging Stations 3 (Aug. 2012), *available at* https://luskin.ucla.edu/sites/default/files/Non-Residential%20Charging%20Stations.pdf (last accessed April 30, 2019).

[63] Blinknetwork.com, Smart, Convenient Charging Wherever You Go, https://www.blinknetwork.com/drivingelectric (last accessed April 30, 2019). Much of the cost of this infrastructure was paid for by federal taxpayers, and, because the prices are artificially low, embed those subsidies. Ecotality received $125 million in federal funding to install EV charging stations, then went bankrupt and sold the assets for $3 million. Their assets are now branded as Blink stations.

[64] National Renewable Energy Laboratory, A Survey of U.S. Demand Charges, https://www.nrel.gov/solar/assets/pdfs/2017-us-demand-charges-webinar.pdf (2017).

There is no justifiable reason for excluding EVCS from these fees paid by other industrial and commercial ratepayers to ensure there is sufficient, reliable capacity online to meet peak demand.

In fact, failure to impose equivalent peak demand charges on EVCS was recognized by the National Academies of Science as a significant disincentive to other commercial and industrial ratepayers providing EVCS to employees or customers at their own facilities. They noted "[t]he economic effect on commercial or industrial customers that are providing charging could be substantial and strongly negative if a single hour with unusually high charging demand were to cause an increase in the demand charge."[65] "Exceeding the demand threshold by any amount will increase the total cost of energy to the facility and, in some cases, will hold the demand rate charges at the higher level for many months to more than a year."[66] The price at the pump for liquid transportation fuel includes all of the costs for production, distribution and infrastructure. The State should adopt a free market approach, treating all EVCS-related costs and prices in the same manner, rather than establishing an artificial incentive for this specific technology.

iii. Incentives

The Commission should not adopt any EVCS incentives. There is no justification for creating incentives that transfer wealth from the large majority of ratepayers to a small number of (typically much wealthier) ratepayers. Moreover, to the extent any cost recovery for EVCS is permitted it should discount the rate of return based on any subsidies, grants, or credits that accrue to the utility, and should also reduce the return by the value of the depreciation claimed by the utility, ensuring the utility does not have outsized returns on investments, particularly those whose

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[65] NRC 2015 Report, *supra*, n.41, at 105.
[66] *Id.*

costs are borne by the majority of ratepayers and whose benefits flow to a small portion of ratepayers.

Similarly, on the topics of flexibility and choice, sound public policy dictates that all market participants should have the same opportunities, so the State does not preordain market winners and losers. The market's judgment should prevail, particularly with EVCS, where a robust market exists to provide these services and the only barrier to entry is the high cost of the product/service relative to the value of the service. The Commission should not use programs to promote "flexibility and choice" of EVCS as a pretense to obscure high costs by forcing the large majority of ratepayers to fund the small portion of ratepayers who would use the EVCS.

AFPM similarly believes there should be no special treatment for EVCS operators under the Make Ready Program. There should be no difference in line extensions for EVCS vis-à-vis other electric utility customers. Likewise, there should be no difference in the assessment of line extension charges based on whether the customer is an EVCS operator. These extensions, and any waivers of associated charges, should be treated no differently than for other commercial customers. The Make Ready concept is being marketed by utilities to their state commissions across the entire country as a ploy to expand their monopoly, increase capital expenditures, increase cash flow, and increase profits by further subsidizing an already heavily subsidized technology. The costs and cross-subsidies associated with the Make Ready concept are clearly outside of the public interest and should be promptly rejected.

The Commission should note that the Edison Electric Institute, the national trade association for all U.S. investor-owned electric companies, has assisted them in developing and promoting the Make Ready concept as a huge new source of revenue. In their own words, the Edison Electric Institute states, "**Electrification Is Our Biggest Opportunity**. Against the

backdrop of slowing growth in the electric power industry, bringing electricity to the transportation sector is a huge, albeit long-term opportunity for load growth."[67] On the subject of "Electric Utilities Need Transportation Electrification," the Edison Electric Institute continues:

> Stagnant growth, rising costs, and a need for even greater infrastructure investment represent major challenges to the utility industry. To maintain our critical energy infrastructure while investing for the future, today's electric utilities need a new source of load growth—one that fits within the political, economic and social environment.[68]

It is clear the Edison Electric Institute sees a strategic opportunity, and is encouraging utilities take advantage:

> Leaders shape the market. Some of the benefits might not even occur unless we invest now. **Utilities have the opportunity to help shape the market in a way that** not only **benefits our business** but also **allows us to stay ahead of future regulations.**[69]

Not unsurprisingly, Wall Street has taken notice. A top UBS analyst sent the following note to clients regarding his coverage of stock in a major California electric utility:

> Why are we still Bullish on Shares? What to Watch for.
> . . .
> Electric Vehicle capex: Mgmt has yet to reflect the ~$200 Mn of capex from the pilot EV projects in its formal budget; once approved, this would likely flow into expectations with corresponding reflection in formal ratebase.[70]

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[67] Edison Electric Institute, Transportation Electrification: Utility Fleets Leading the Charge 1 (June 2014), *available at* http://www.eei.org/issuesandpolicy/electrictransportation/FleetVehicles/Documents/EEI_UtilityFleetsLeadingTheCharge.pdf.

[68] *Id.* at 3.

[69] *Id.* at 4 (emphasis added).

[70] UBS, Edison International, Articulating a Vision for the Future, https://neo.ubs.com/shared/d1vuk9JrdzXU6C/ (Sept. 16, 2016) (copy available upon request).

Simply stated, electric utilities and Wall Street recognize that the Make Ready program and additional EVCS investment is a huge opportunity to print new money and increase returns.[71] Most interestingly, none of the statements by the utilities or Wall Street analysts on this issue consider whether these costs are in the interests of the ratepayers. The utilities have even taken it on themselves to *use ratepayer dollars* to gradually replace their gasoline and diesel vehicles with significantly more expensive electric vehicles as part of their push to expand the electrification of transportation.[72]

g. Ownership Models

Turning to ownership models, the specific type of ownership is irrelevant. Rather, those entities who willfully and intentionally participate in this market should be the same who must pay all associated entry costs. Only this market-based approach will allow the service provider to offer an accurate price for a product, and allow willing buyers to drive the market toward its most efficient outcome. Conversely, ratepayers, who are passive and hostage to the regulated monopoly electric utilities, should not be obligated to reimburse market entry costs for the utility or the EVCS owner and operator.

Specific determinations regarding growth and maintenance of the EVCS industry, including the specific types of technology to be used, should be left to the free market and market participants.

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[71] *See* Consultancy.uk, Shift to Electric Vehicles a Boon for Utilities as Demand Mounts, https://www.consultancy.uk/news/17091/shift-to-electric-vehicles-a-boon-for-utilities-as-demand-mounts (May 10, 2018); *and* Forbes.com, 4 U.S. Electriv Vehicle Trends to Watch in 2019, https://www.forbes.com/sites/energyinnovation/2019/01/02/4-u-s-electric-vehicle-trends-to-watch-in-2019/#5d5fb3385a3c (Jan. 2, 2019) (last accessed April 30, 2019).

[72] GreentechMedia.com, Utilities Get More Proactive on EVs and Charging Infrastructure: Some are aiming to get the charging network rate-based, https://www.greentechmedia.com/articles/read/utilities-get-more-proactive-on-evs-and-charging-infrastructure#gs.66lszg (June 11, 2015) (last accessed April 30, 2019).

Ultimately, AFPM's concern is that the vast majority of the ratepayers will incur additional costs without benefit, while EVCS owners and operators will be artificially supported and engorged by incentives and profits. Increased demand on the system will affect supply costs and demand charges to ratepayers, because it is they who have financed the current surplus of electricity and investments in generation, transmission and distribution that the electric utilities will be exploiting for increased demand from EVCS. Electric utilities are expecting ratepayers to essentially re-finance this surplus, in the form of additional transformers, distribution circuits, more net dependable generating capacity, and other "necessary" grid upgrades. For example, a case study for the city of Sacramento identifies a need to replace 12,000 transformers at an average cost of $7,400 per transformer to accommodate 240,000 EVs in the city.[73] This translates to a hidden utility ratepayer subsidy of an additional $370 per EV on the road.[74] In effect, this provides an opportunity for non-eligible ratepayers, *i.e.*, those who will not or cannot utilize EVCS, to subsidize high energy users, which is unfair and incompatible with proper rate making.

Consumer demand for and acceptance for EVs remains low because there are few, if any, functions they perform that are not provided by alternative market-based options that are available at a lower price and offer greater convenience. It is unclear how the Commission could justify allowing the large majority of ratepayers to fund the significant costs of a service that is available in the private market, is not wanted or utilized by the overwhelming majority of ratepayers, and subsidizes the wealthiest of all ratepayers.

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[73] *See* Smart Electric Power Alliance, Utilities and Electric Vehicles: The Case for Managed Charging, 13, *available at* http://emotorwerks.com/images/PR/Articles/sepa-managed-charging-ev-report.pdf (last accessed April 26, 2019).

[74] *Cf.*, *supra*, n.49 and accompanying text.

Policy considerations such as those under review in this Working Case require legislative input. AFPM suggests the Commission request guidance from the legislature and recommend that the legislature set a policy that allows EVCS to be built on a level playing field. Additionally, protections for ratepayers who will not utilize EVCS should be implemented to prevent ratepayers from being charged for costs from EVCS.

III. Beneficial Electrification

An argument in favor of EVCS, and, by extension, mechanisms to allow electric utilities to recover costs associated with development and deployment of EVCS, is based on a theory of "beneficial electrification," often promoted by the very regulated monopoly utilities that will increase sales, revenue and profits, if this theory is adopted by their regulators. The Regulatory Assistance Project, during its presentation as part of the March 21, 2019 workshop, recommends that beneficial electrification should mean more than simply load growth, and that positive responses to one or more of the three identified conditions is needed:

1. the project must save customers money;
2. the project must meaningfully reduce environmental impacts (in the state); and
3. the project must enable better grid management.[75]

Given that the Commission is empowered to investigate and

> order such reasonable improvements *as will best promote the public interest, preserve the public health and protect* those using such . . . electricity, . . . and those employed in the manufacture and distribution thereof, and have power to order reasonable improvements and extensions of the works, wires, poles, pipes, lines, conduits, ducts and other reasonable devices, apparatus and property of . . . electrical corporations . . .[76]

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[75] Test. of D. Farnsworth, RAP Senior Associate, *Beneficial Electrification of Transportation*, 5, EW-2019-0229, Dkt. 16 (March 21, 2019).

[76] § 393.140(2), RSMo (emphasis added).

AFPM believes that a full review of the facts shows ambiguous, if not negative, results to these conditions, and therefore fail to satisfy the conditions to the Commission's authority.

AFPM will go further, however, and assert that, based on the powers of the Commission, any EV charging infrastructure investment program should meet all three conditions to meet the threshold for implementation.

a. Consumer Impacts - Inequitable Benefits and Impacts Associated with Electric Vehicles

Missouri electricity customers are served primarily by two regional power markets (*i.e.*, "power pools"), the Southwest Power Pool ("SPP") in the western part of the state and the Midcontinent ISO ("MISO") in the eastern part of the state. Utilities in these markets find themselves with surplus generation that they are seeking to use. For example, in the SPP, the total generating capacity is more than 43% higher than the amount of capacity that supplied the historic peak demand level;[77] and, in MISO, total capacity is more than 30% higher than the capacity that supplied the historic peak.[78] Yet, the utilities have surplus "available" because ratepayers pay costs to increase and maintain excess capacity to protect their – the ratepayers' – interests and to guarantee reliable power supply, recognizing that some of the generation is undergoing outages for maintenance or is not dependable baseload (*e.g.*, wind, solar). Rather than preserving this surplus for the ratepayers, who have and continue to bear the cost of maintaining this plant capacity, utilities seek to enter a new market to use the surplus by supplying drivers of electric vehicles with fuel. Adding injury to insult, utilities are seeking to pay for this new business model by spreading

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[77] Southwest Power Pool, An Overview of the SPP System, https://www.spp.org/about-us/fast-facts/ (last accessed April 18, 2019).

[78] Midcontinent Independent System Operator, Inc., Corporate Information (February 2019), https://cdn.misoenergy.org/Q1%202019%20Corporate%20Fact%20Sheet%20Update_2_8_19317878.pdf (accessed April 18, 2019).

the costs of EVCS market entry to all ratepayers. In effect, ratepayers face the specter of having to pay for their investment in reliable generating capacity twice, while they risk losing the benefit of the investment itself as it drives on down the road: utility infrastructure installed along highway corridors will likely lead to utility customers subsidizing out-of-state vehicles passing through, which would largely undermine any benefits to utility customers.[79] In fact, the parties who would benefit most would be electric generators, transmission and distribution utilities, EV manufacturers, EVCS equipment makers, their respective shareholders, and end users of EVs and EVCS.

Importantly, the benefits of EVCS are not shared across socio-economic boundaries. Rate increases disproportionately impact low income electricity consumers. Increased rates to fund EVCS will impact families, workers, small businesses, and the most vulnerable among us who spend a greater percentage of their income on transportation and energy costs.[80]

EVs themselves are significantly more expensive than a comparably-equipped internal combustion engine vehicle.[81] A large portion of this price disparity is hidden from consumers and voters through a wide variety of direct and indirect market-distorting incentives.[82] EV public policy must account for the true price and environmental differentials, based on an understanding of the costs of various, viable alternatives.

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[79] *See* Test. Andrew C. Slater, DE Div. of the Public Advocate, *In re: Application of Delmarva Power & Light Co. for Approval of a Program for Plug in Vehicle Charging*, 17-1094, at 9, Dkt. 31 (May 18, 2018), *available at* https://delafile.delaware.gov/CaseManagement/ViewFileNetDocument.aspx?Id=4c43a3a4-6d13-4493-b7c7-6b2683569378&Type=Docket (last accessed April 26, 2019).

[80] Inside Energy.org, High Utility Costs Force Hard Decisions for the Poor, http://insideenergy.org/2016/05/08/high-utility-costs-force-hard-decisions-for-the-poor/ (May 8, 2016) (last accessed April 30, 2019).

[81] Edmunds.com, The True Cost of Powering an Electric Car, https://www.edmunds.com/fuel-economy/the-true-cost-of-powering-an-electric-car.html (March 6, 2019) (last accessed April 30, 2019).

[82] *See, supra*, nn.43-58 and accompanying text.

EVs currently benefit from an array of direct subsidies designed to entice consumers to purchase them. In addition to a $7,500 federal tax credit, many states provide additional tax credits or other incentives. As discussed below, these EV tax credits have proven ineffective at driving significant sales of EVs, but they do reallocate scarce resources away from education, emergency responders, infrastructure projects, and primarily benefit only the wealthy. Indeed, these subsidies represent a wealth transfer from lower-income households to high-income households.

An analysis of IRS Statistics of Income data illustrates that in 2014, 78.7% (or $207.1 million) of the federal consumer tax credits for EVs were received by households with an adjusted gross income (AGI) of $100,000 or above.[83] Furthermore, 20.5% of the tax credits ($54.1 million) were received by households with an AGI between $50,000 - $100,000.[84] Overall, 99% of the total tax credits went to households with an AGI over $50,000.[85] University of California-Berkeley researchers have dubbed EV tax credits the most regressive of any green energy subsidies currently available, with more than 90% of EV tax credits claimed by filers with adjusted gross incomes in excess of $75,000, and 70% of EV tax credits claimed by filers with adjusted gross incomes in excess of $200,000/yr.[86]

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[83] Pacific Research Institute, Subsidies for Electric Vehicles Favor the Wealthy (March 12, 2018), *available at* https://www.pacificresearch.org/subsidies-for-electric-vehicles-favor-the-wealthy/ (last accessed April 26, 2019).

[84] *Id.*

[85] W. Winegarden, Ph.D., Pacific Research Institute, Costly Subsidies for the Rich: Quantifying the Subsidies Offered to Battery Electric Powered Cars 6 (Feb. 2018), *available at* https://www.pacificresearch.org/wp-content/uploads/2018/02/CarSubsidies_final_web.pdf (last accessed April 30, 2019).

[86] *See* L. Davis, Energy Institute at HAAS, Univ. of Cal.-Berkeley, Are Clean Energy Tax Credits Equitable?, https://energyathaas.wordpress.com/2015/07/20/are-clean-energy-tax-credits-equitable/ (July 20, 2015) (last accessed April 26, 2019); *and* S. Borenstein, *et al.*, Energy Institute at Haas, Univ. of Cal.-Berkeley, The Distributional Effects of U.S. Clean Energy Tax Credits (July 2015), *available at* http://ei.haas.berkeley.edu/research/papers/WP262.pdf (last accessed April 26, 2019).

Subsidies and mandates, including state tax incentives, distort purchasing decisions. When these artificial mechanisms are removed, demand for EVs evaporates. For example, after Georgia eliminated its $5,000 EV tax credit in 2015, EV sales decreased over 80 percent.[87] Similarly, after Hong Kong eliminated its tax break for EVs in April 2017, registrations of new Tesla EVs fell from 2,939 to zero.[88] These drastic sales reductions are an indication that the EV demand is based on market distortions created by poor government policy, rather than actual consumer demand. Existing EV owners also are finding that there are unanticipated costs of ownership such as the installation of a home charger and the replacement of expensive battery packs resulting from the reduction of battery capacity over the life of the vehicle.[89]

In addition, EVs waste a significant percentage of the power they consume. Transmission line losses to deliver the power waste approximately 5% of the electricity,[90] conversion system losses waste an additional 12-17%,[91] cold weather in Missouri can compromise the vehicle's range by up to 40% and hot Missouri weather will compromise range and use an additional 17+% of electricity going to charge the vehicle.[92]

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87 C. Joyner, The Atlanta Journal-Constitution, Here's Why Electric Car Sales are Plummeting in Georgia (Jan. 12, 2017), *available at* https://www.ajc.com/news/state--regional-govt--politics/here-why-electric-car-sales-are-plummeting-georgia/lNGjfnDMALGkv2iUzwwXIO/ (last accessed April 30, 2019).

88 T. Higgins & C. Rollet, The Wall Street Journal, Tesla Sales Fall to Zero in Hong Kong After Tax Break Is Slashed, (July 9, 2017), *available at* https://www.wsj.com/articles/teslas-hong-kong-sales-gutted-by-tax-change-1499598003 (last accessed April 30, 2019).

89 F. Lambert, Electrek.co, Nissan starts new program to replace old LEAF battery packs, (July 26, 2018), *available at* https://electrek.co/2018/03/26/nissan-leaf-battery-pack-replacement-program/ (replacement battery packs range from approximately $2,850 for refabricated packs to approximately $7,800 for new 40 kWh packs) (last accessed April 30, 2019).

90 U.S. Energy Information Admin., How Much Electricity is Lost in Electricity Transmission and Distribution in the United States? (Jan. 9, 2019), https://www.eia.gov/tools/faqs/faq.php?id=105&t=3 (last accessed April 23, 2019).

91 *Supra*, n.54 and accompanying text.

92 *Supra*, n.56 and accompanying text.

The EV batteries are themselves a net cost burden on ratepayers. Battery efficiency decreases in cold and very hot weather – prevalent environmental conditions within Missouri every year – which causes increased need for charging resulting in reduced efficiency and negative impacts to grid productivity during these times. A recent AAA study found that on average, an ambient temperature of 20°F resulted in a 12% decrease in combined driving range (when compared to testing conducted at 75°F).[93] HVAC use at the same ambient temperature further diminishes EV performance, resulting in a 41% decrease in combined driving range.[94]

EV fires involving cars with large lithium-ion batteries also present new safety challenges and costs on ratepayers and the general population, as well. [95] Some leading executives of major American automakers have stated that electric vehicles are not cost-effective, that lithium-ion

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[93] Automotive News, AAA Shows Consumers How Temperature Extremes Hurt EV Performance, https://www.ajc.com/news/state--regional-govt--politics/here-why-electric-car-sales-are-plummeting-georgia/lNGjfnDMALGkv2iUzwwXIO/ (February 8, 2019) (last accessed April 26, 2019).

[94] *Id.*

[95] *See* NTSB, Preliminary Report, HWY18FH011 (June 7, 2018), *available at* https://www.ntsb.gov/investigations /SitePages/dms.aspx (after first responders used water and foam to extinguish the fire, with the assistance of fire safety experts from Tesla, the vehicle was transported to an impound lot and the battery re-ignited five days later); NTSB, Preliminary Report, HWY18FH013 (June 26, 2018) (after first responders extinguished the fire with water and foam, the vehicle burst into flames again while it was being loaded for transport. Once first responders extinguished the second fire, the Tesla was transported to a storage yard where it ignited for a third time); NTSB, Preliminary Report, HWY18FH014 (Sept. 4, 2018) (vehicle ignited without being involved in a collision; local fire department extinguished the fire with water and foam; the battery continued to smolder, requiring the fire department to don self- contained breathing apparatuses and disassemble portions of the vehicle to access the battery; a Tesla representative warned that the re-ignition was a risk until the battery was completely cooled). *See, also,* Aylin Woodward, *Why the Fire that Incinerated a Tesla was Such a Nightmare to Put Out*, Live Science (2018), *available at* https://www.livescience.com/62179-tesla-fire-cleanup-danger.html; *and* Alan Levin, *Electric-Car Era Threaten Firefighters with New Road Risks*, Bloomberg (2018), *available at* https://www.bloomberg.com /news/articles/2018-05-15/electric-car-era-threatens-firefighters-with-new-roadside- risks.; ABC 7 News, Fire chief: Tesla crash shows electric car fires could strain department resources (Mar. 26, 2018) ("The crash shut down a carpool ramp and two lanes on the freeway for almost 6 hours – twice as long as most accidents of this type … Mountain View's Fire Department typically puts out a car fire in minutes."). Tesla, Model X Emergency Response Guide, *available at* https://www.tesla.com/sites/default/files/downloads/2016_Model_X_Emergency_Response _Guide_en.pdf ("A burning or heated battery releases toxic vapors. . . . Responders should always protect themselves with full PPE, including a SCBA" and use "fog streams or positive-pressure ventilation fans" to "protect civilians downwind from the incident." *Id.* at 21).

technology will never be cost-effective compared to improving efficiencies of gasoline vehicles, and that EVs will not be cost-effective at least until solid-state batteries are developed at significantly lower costs than are anticipated in 2023. [96]

b. Environmental Impacts

Environmental considerations also suggest against devoting significant ratepayer resources to EV infrastructure. According to the U.S. Energy Information Administration, coal fuels more than three-fourths of Missouri's net electricity generation, and eight of the ten largest power plants in the state are coal-fired.[97] Whereas emissions from petroleum-fueled vehicles affect the local environment, emissions caused by electric vehicles will generally be far removed, near power plants, and dispersed widely due to the height of power plant stacks. This transfers the impacts associated with EVs, resulting in a not-in-my-backyard scenario.

Proponents of EV often claim that EVs are necessary to improve air quality. However, EVs are neither necessary, nor a cost-effective means of improving air quality in Missouri. In fact, it is possible that EVs are degrading air quality. Currently, based on data collected during the 2015-2017 timeframe, the entire State of Missouri shows concentrations of particulate matter that are well below the National Ambient Air Quality Standard ("NAAQS"), levels that have been chosen

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[96] Automotive News, Six Superstars Ponder the Future of an 'Irrational' Auto Industry, (Aug. 3, 2015), *available at* http://www.autonews.com/article/20150803/INDUSTRY_ON_TRIAL/308039971/six-superstars-ponder-the-future-of-an-irrational-auto-industry ("I don't know if anybody noticed, but full-size sport-utilities used to be — just a few years ago used to be $42,000, all in, fully equipped. You can't touch a Chevy Tahoe for under about $65 [thousand] now. Yukons are in the $70 [thousands]. The Escalade comfortably hits $100 [thousand]. Three or four years ago they were about $60,000. What this is, is companies trying to recover what they're losing at the other end with what I call compliance vehicles, which are Chevy Volts, Bolts, plug-in Cadillacs and fuel cell vehicles.").

[97] U.S. Energy Information Administration, Missouri: State Profile and Energy Estimates, https://www.eia.gov/state/analysis.php?sid=MO (last accessed April 18, 2019).

to protect the most vulnerable populations, such as the elderly and children, with a considerable margin of safety.[98]

In 2017, average annual fine particulate matter concentrations in Missouri were 33% below the NAAQS and peak daily concentrations were 25% below the NAAQS. There is one metropolitan area, St. Louis, that shows ozone concentrations that are 2 parts per billion (ppb) above the NAAQS of 70 ppb, but this is just for a small number of hours per year. Importantly, because of technological innovation and greater energy efficiency, as new equipment replaces old equipment, and the latest emission control technologies are widely deployed, air quality throughout the U.S. and Missouri is improving rapidly.

In Missouri, ozone concentrations have declined more than 10% in the past decade and EPA projects that this trend will accelerate with the implementation of existing regulations and continued replacement of older generation technology with newer. Between 2011 and 2017, emissions of nitrogen oxides (NOx) in Missouri, which contribute to the formation of particulate matter and ozone, have declined 20%, and by 2023 will have been reduced by more than 50% below 2011 levels.[99] EPA shows that all areas of Missouri will have ozone concentrations well below the 70 ppb threshold, with average peak annual levels of 58 ppb in 2023, nearly 20% below the maximum allowable levels.[100] This accomplishment is all the more impressive when one

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[98] *See* U.S. Environmental Protection Agency, Air Quality Design Values: PM10 and PM2.5 Design Values, 2017 (July 23 & 24, 2018), *available at* https://www.epa.gov/air-trends/air-quality-design-values#report (last accessed April 30, 2019).

[99] *See* U.S. Environmental Protection Agency, State-Level Annual Anthropogenic NOx and VOC Emissions for 2011 through 2017 and for 2023 (November 2018), *available at* https://www.epa.gov/sites/production/files/2018-11/state-sector_annual_emissions_data_1.xlsx (last accessed April 30, 2019).

[100] *See* U.S. Environmental Protection Agency, Ozone Monitoring Site Design Values for 2008 through 2017 and for 2023 (November 2018), *available at* https://www.epa.gov/sites/production/files/2018-10/ozone_design_value_data_2.xlsx (last accessed April 30, 2019).

considers that natural background levels of ozone plus foreign contributions to ozone comprise 30-50 ppb,[101] *i.e.*, up to 86% of the projected maximum concentrations in Missouri in 2023.

A significant portion of current and projected emission reductions are a result of the turnover of the nation's motor vehicle fleet. For example, federal emission standards set in 2014 require an 80% reduction in NOx emissions compared to vehicles on the road in 2014.[102] Prior to considering any further subsidies of EVs, the State of Missouri and the Commission should consider that its citizens already are funding the requirements of numerous federal and state emission reduction policies and should recognize that most of these policies are significantly more cost-effective at lowering emissions compared to investments in EVs. For example, consider that current "Tier 3" mobile source emission standards for light duty vehicles and light duty trucks will require that new vehicles emit less than 1 pound of NOx per year (*i.e.*, 30-50 mg/mi multiplied times the average annual VMT of 11,346 miles);[103] then, consider that a typical new EV requires 33 kWh of electricity per 100 miles traveled under ideal conditions,[104] and, after accounting for the aforementioned 12-17% charging inefficiency, the 5% transmission and distribution grid losses, and weather impacts on battery use and performance, [105] typical EV use in Missouri will require

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[101] D. Jaffe, *et al.*, Scientific assessment of background ozone over the U.S.: Implications for air quality management, § 1, Elementa (2018), *available at* https://www.elementascience.org/articles/10.1525/elementa.309/ (last accessed April 30, 2019).

[102] Control of Air Pollution from Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards, 79 Fed. Reg. 23414 (April 28, 2014). Note that the emission reductions from tier 3 (and other preceding regulations) are NOT affected by the current Administration's proposal to modify the 2022-2025 fuel economy and greenhouse gas emission standards for mobile sources.

[103] *Id.*

[104] *See* Fueleconomy.gov, New All-Electric Vehicles, https://www.fueleconomy.gov/feg/PowerSearch.do?action=noform&path=3&year1=2018&year2=2019&vtype=Electric&srchtyp=newAfv&pageno=4&sortBy=Comb&tabView=0&rowLimit=10 (last accessed April 30, 2019). This shows a range of battery rating for new EVs from 25 kWh/100 miles to 47 kWh/100 miles for large EVs. A rating of 33 kWh represents a conservative estimate.

[105] *See, supra*, nn.90-92 and accompanying text.

well over 40 kWh per 100 miles traveled. In turn, consider that the average MWh of power production in the Missouri region produces about 1.1-1.3 lbs of NOx emissions[106]. If so, then the typical EV operating in Missouri will generate more than 5 lbs of NOx emissions per year,[107] roughly 5 times the amount of NOx emissions as a new gasoline light duty vehicle.[108] So, not only would the cost premium of an EV plus the associated infrastructure costs make any incremental avoided emissions cost-prohibitive, it appears that it would result in an increase in Missouri NOx emissions and contribute to a net increase in ozone and particulate matter concentrations.

As with assertions of improved air quality, discussed above, proponents of EVs often claim that their policies are necessary in order to reduce carbon dioxide (CO_2) emissions. Notwithstanding the significant CO_2 emission reductions that have been achieved across the U.S. over the past decade, there are no federal statutes or regulations that require either the United States or the State of Missouri to reduce overall CO_2 emissions. And, if there were such policies, investment in EVs would be one of the least cost-effective means for achieving those reductions. Consideration of the numerous aforementioned costs of EVs and EV infrastructure, plus the cost of the numerous aforementioned subsidies and mandates, when compared to the alternative emissions profile and costs of a new gasoline-fueled motor vehicle, translates to an incremental cost of well over $1,000 per ton of CO_2 avoided in nearly every part of the country.

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[106] *See* U.S. Environmental Protection Agency, eGRID Summary Tables 2016 (Feb. 2, 2018), *available at* https://www.epa.gov/sites/production/files/2018-02/documents/egrid2016_summarytables.pdf (last accessed April 30, 2019).

[107] (40kWh per 100 miles) x (11346 miles per year / 100 miles) x (1 MWh / 1000 kWh) = 4.5 MWh * 1.1 lb NOx per MWh = 5.0 lb NOx.

[108] *Supra* n.107 and accompanying text.

In Missouri, however, the costs are significantly higher, and, based on the following information, it appears that EVs in the State currently are producing a net increase in total CO_2 emissions. The Energy Information Administration ("EIA") projects the on-road fuel economy of new light duty cars in 2020 to be 35.5 miles per gallon, increasing to 44.3 miles per gallon in 2030.[109] The fuel economy of the average new light duty car is a reasonable, but conservative, assumption when making comparisons to a new EV. It is a conservative assumption, because it is not comparing the most fuel efficient new motor vehicles that are more likely to be considered by EV buyers as their alternative option for purchase. In other words, using the average fuel economy of a new light duty car likely overestimates the benefits of a new EV. That said, using EIA's latest projections, the average new car's fuel economy of 35.5 miles per gallon in 2020 translates to annual CO_2 emissions of 3.1 tons.[110] The projected average fuel economy of a new car in 2030, of 44.3 miles per gallon translates to annual CO_2 emissions of 2.5 tons per year.

Comparing these numbers to the emissions associated with powering an EV in Missouri is startling. As outlined previously in our comments, an EV in Missouri will consume more than 40 kWh per 100 miles traveled, after consideration of 12-17% charging inefficiency, 5% transmission and distribution line losses, and impacts on EV battery efficiency and use from hot and cold weather.[111] So, recognizing that the real-world electric consumption is higher, let's conservatively assume 40 kWh per 100 miles traveled. For a typical driver, traveling 11,346 miles per year, this

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[109] U.S. Energy Information Administration, Annual Energy Outlook 2019. Table: Transportation Sector Key Indicators and Delivered Energy Consumption, https://www.eia.gov/outlooks/aeo/data/browser/#/?id=7-AEO2019&cases=ref2019&sourcekey=0 (last accessed April 30, 2019).

[110] (40kWh per 100 miles) x (11346 miles per year / 100 miles) x (1 MWh / 1000 kWh) = 4.5 MWh/yr * (1622.5 to 1966.5 lb CO_2 per MWh) (1 ton / 2000 lb) = 3.7-4.5 tons CO_2/yr.

[111] *See, supra*, nn.90-92 and accompanying text.

equates to 4,538 kWh of power consumption per year, or 4.538 MWh/yr. U.S. EPA data shows that CO_2 emissions associated with power consumption in the Missouri region range from 1622.5 to 1966.5 lbs. per MWh.[112] Multiplying these emission factors by the annual power consumption for a Missouri EV driver, translates to annual CO_2 emissions of 3.7 to 4.5 tons. Based on these data from federal agencies, each new EV operating in Missouri is projected to yield a net increase in CO_2 emissions of 0.6-1.4 tons in 2020, potentially increasing further to 1.2-2.0 tons in 2030. Presently, despite massive cost premiums, EV operation in Missouri provides no net emission reductions.

Finally, as addressed above, there are significant carbon emissions and environmental impacts associated with EV battery manufacturing and the ensuing increased demand for electricity.[113] Likewise, lithium-ion EV batteries necessitate dependence on China for the rare earth and other minerals needed to produce the batteries.[114]

While Beneficial Electrification proponents claim environmental benefits are grounds for the Commission to approve EVCS programs like KCP&L's CCN and Ameren's Charge Ahead Program, which share the general stated purpose and justification for approval of supporting the growth and widespread adoption of EVs, the Commission's granted powers are to oversee the adequate, safe and effective delivery of electricity for heat, light and power. These stated goals are incompatible with the public interests to be protected and endorsed by the Commission. Further,

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[112] *See* U.S. Environmental Protection Agency, eGRID Summary Tables 2016 (Feb. 2, 2018), *available at* https://www.epa.gov/sites/production/files/2018-02/documents/egrid2016_summarytables.pdf (last accessed April 30, 2019).

[113] N. Rolander, *et al.*, The Dirt on Clean Electric Cars, Bloomberg.com, https://www.bloomberg.com/news /articles/2018-10-16/the-dirt-on-clean-electric-cars (October 15, 2018) (last accessed April 30, 2019).

[114] S. Patterson & R. Gold, There's a Global Race to Control Batteries - and China is Winning, Wall Street Journal (Feb. 11, 2018), *available at* https://www.wsj.com/articles/theres-a-global-race-to-control-batteriesand-china-is -winning-1518374815 (last accessed April 26, 2019).

Missouri has not adopted any superseding law that would prioritize the advancement of electric vehicles and expansion of a utility into the transportation fuels sector.

c. Grid Impacts

The proliferation of EVCS will likely require additional funding to upgrade electrical infrastructure. Has the Commission accounted for a potential billion dollars in costs to upgrade transformers that electric utilities seek to have passed through to ratepayers in the form of higher electrical rates? [115] Missouri ratepayers stand to bear the exorbitant costs of the new EVCS infrastructure necessary to support their operation.

Increased demand for electricity, even where a surplus is currently present, will have an impact on the distribution network. This is particularly true within the "last mile," the local distribution grid where use of EVs may be more prevalent. As Colorado has experienced recently due to significant growth in the number of electric vehicles within the state, some distribution grids at the local level are not built to accommodate the huge increase in power demand. [116]

Likewise, a study conducted in Austin, Texas found that the local grid may not sustain a majority of EV drivers plugging in their cars upon returning from home from work, at the same time electricity use within the home peaks to accommodate lighting, cooling, cooking and appliances within the home.[117] This is particularly relevant during the warm summer months, which Missouri also experiences.

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[115] Wires Group, The Coming Electrification of the North American Economy: Why We Need a Robust Transmission Grid (March 2019) *available at* https://wiresgroup.com/new/wp-content/uploads/2019/03/Electrification _BrattleReport_WIRES_FINAL_03062019.pdf (last accessed April 29, 2019).

[116] Fleet Carma, The Impact of Growing Electric Vehicle Adoption on Electric Utility Grids, (Aug. 28, 2017), *available at* https://www.fleetcarma.com/impact-growing-electric-vehicle-adoption-electric-utility-grids/.

[117] *Id.*

AFPM believes the Commission's previous rulings protecting ratepayers from utility expenses that are not justified for the safe and reliable transmission of electricity should be followed with regard to EVCS. Further the Commission previous rulings are not inconsistent with concerns in rulings from other jurisdictions.[118]

IV. Other Considerations

The Commission should continue supporting fuel neutrality.[119] AFPM strongly supports the equal treatment, including taxation and regulation, of all motor vehicles and motor fuels, including alternative motor fuels like electricity. As such, AFPM firmly believes Missouri should choose a public policy of fuel neutrality. No general population within the state subsidizes or otherwise sponsors petroleum manufacturers, wholesalers and retail fuel outlets for the costs associated with delivering petroleum-based fuel to the consumer. Rather, these costs are borne by the investors, owners, and operators of these refineries, distribution networks, and wholesale and retail outlets, as well as by the actual consumers of petroleum-based fuel. Intrinsic in this are environmental and regulatory concerns, the costs and obligations of which fall to the willful market participants, including individual end-users. Ratepayers to electricity utilities - who are not willful participants but rather a captive market to monopolistic utilities - should not be expected, or forced, to subsidize

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[118] *Supra,* n.80, at 3.

[119] *See Report and Order*, 9-10, *In re: the Application of Utilicorp United, Inc. d/b/a Missouri Public Service, for Permission, Approval, and a Certificate of Public Convenience and Necessity Authorizing it to Construct, Install, Own, Operate, Control, Manage and Maintain a Gas Distribution System for the Public in the City of Salem, Missouri and Certain Other Unincorporated Areas Located in Phelps County and Dent County, Missouri*, GA-95-216, Dkt. 32 (Aug. 8, 1995) (concurring with Staff that where "cost-based rates be set for the Salem area as a discrete entity, the cost of providing gas service will not be competitive with propane, its direct competitor. . . . the cost of providing service to Salem should be borne exclusively by the Salem consumers and should not become a part of the embedded costs for the remainder of the UtiliCorp service area." *Id.* at 4).

and enable the generators and distributors of electricity-based fuel. The participating investors, owners, and operators, as well as the actual consumers of these services, should bear these costs.[120]

Anything less than full fuel neutrality unjustly advantages electricity-based fuel providers over petroleum-based fuel providers. This unjust competition would be particularly egregious because petroleum-based fuel providers are themselves ratepayers of the electric utilities. In what other sector is one market participant *required* under public policy to subsidize a competitor? Railroads are not required to subsidize over-the-road trucking; fine dining establishments are not required to subsidize fast-food restaurants; and the National Football League is not required to subsidize Major League Baseball. Yet, the Commission is considering whether ratepayers engaged in the private sector supply of motor fuel - AFPM members and other private sector transportation fuel businesses alike, many of which are small, second or third generation, family-owned businesses - should be *required* to finance and support supply-side infrastructure that will directly compete against them. Such treatment is fundamentally unfair, and AFPM believes the public policy of the state should not legitimize an unfair competitive private sector advantage favoring any disparate groups within the state.

For example, operators of petroleum-based gas stations are responsible for seeing that the "customer costs" identified in paragraph 4 of the Request are servicing the site, which includes electricity, water and plumbing, and gas. The operator is responsible for seeing that the necessary underground storage tanks and associated lines are installed, site drainage is controlled and spill mitigation is in place, and fuel pumps are operating correctly. The operator must pay to have the

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[120] *Cf.* Office of the Public Counsel's Response to Order at ¶¶ 5-8, *In re: Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service*¸ ER-2016-0285, Dkt. 590 (Sept. 7, 2018).

concrete poured. The operator must satisfy all regulatory requirements, including obtaining construction and operating permits. These costs are then recouped through the sale of petroleum-based fuel and ancillary goods to the customer base, i.e., the people and businesses who elect to use that specific gas station. AFPM believes the same treatment is appropriate for electric vehicle charging infrastructure and the owners and operators thereof.

Consider an obvious scenario for electric vehicle charging infrastructure: many may be installed at gas stations, convenience stores, and interstate truck stops. AFPM does not object to this scenario; rather, AFPM believes such an outcome is a business decision for the owner/operator of the refueling station. Many other possible locations - particularly independently owned gas stations servicing smaller communities, where electric vehicle ownership will be virtually nonexistent - may decide not to install such equipment, again, based on the realities of their own businesses. Either way, no location should be coerced into installing such equipment to capture savings on increased rates. Yet, this is precisely what a policy that obligates ratepayers to finance such subsidies and special treatment for the electric vehicle infrastructure would do. An owner/operator of a petroleum-based gas station may have no choice to but to seek installation of an electric vehicle charging station to see some return on the increase in electricity rates that may otherwise fund a competitor.

AFPM believes in a level and fair playing field. If utilities want to enter and compete in the private sector retail motor fuel market, and therefore compete directly with private sector businesses, they should have to play by the exact same rules as other private sector motor fuel businesses. There is nothing limiting any corporation engaged primarily as an electric utility from accepting the same investment risk and opportunity as other transportation fuel providers by competing to earn the business of customers seeking to purchase the best quality product at the

most competitive price, so long as their transportation fuel business line is outside of their rate base and regulated business lines, and, in turn, outside of their market monopoly.

V. Unresolved Public Policy Considerations

Missouri's road transportation infrastructure is largely maintained by government and funded by tax receipts. Missourians pay 17 cents per gallon of gasoline which resulted in $706 million in state fuel taxes or road fees being collected in 2018 – nearly half of Missouri transportation funding. Given that the average electric vehicle is significantly heavier than a comparable vehicle powered by liquid fuel, the electric vehicle's usage of common roads would have greater wear and tear impact on Missouri's transportation infrastructure. Given this issue it might be prudent for the commission to explore the open public policy question of potential equivalent transportation fuel tax rates for electricity dispensed as transportation and/or motor fuels. Examples include Pennsylvania who charges a gasoline gallon equivalent for all fuels used for transportation or previous legislative language passed by the Missouri General Assembly that would have effectively created the same model as Pennsylvania – a policy that ends discrimination on technology and is fuel neutral.

In addition to the state transportation fuels tax, the Federal government charges 18.3 cents per gallon of gasoline which generated over $750 million in federal revenue supporting transportation. Transportation funding is a growing concern in Missouri as well as at the Federal level. Thus, promoting a new technology that disproportionally contributes to the degradation of our transportation infrastructure without paying towards its upkeep ill-advised until this public policy question is settled.

VI. Conclusion

AFPM, and certainly the majority of ratepayers within the state, encourage the Commission to deny any policy proposal that would see the large majority of ratepayers fund the significant costs associated with EV charging networks, given their already plentiful and growing presence within the state, and the fact that these networks are not wanted and will not be utilized by the overwhelming majority of ratepayers, for the benefit of subsidizing the wealthiest of all ratepayers.

AFPM seeks a fair and free market and does not object to more choices for consumers. However, AFPM opposes efforts to force decisions onto consumers and ratepayers, particularly decisions that may not be in their best interest. The benefits of electric vehicles remain debatable, but policy proposals at issue in these proceedings serve to force a paradigm shift in automobile and fleet fueling on ratepayers without the support of the market. The free market, as dictated by consumers, ratepayers and other demand-side forces, should be allowed to run its course.

For these reasons, and more, electric utilities should not be eligible for subsidies or special treatment to pay for internal utility costs associated with electric vehicle charging infrastructure, nor for "customer costs," as enumerated in paragraph 4 of the Request. The owner and/or operator of any new point of service for the consumer should pay all costs associated with bringing the new service on-line.

AFPM again thanks the Commission for opening this Working Case and for soliciting input from all interested parties as these important policy considerations are evaluated. AFPM would be happy to provide any additional or supplement information the Commission may desire.

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of the foregoing Party Submission of the American Fuel & Petrochemical Manufacturers and the Missouri Petroleum Marketers and Convenience Store Association was served on all parties participating in the Electronic Filing Information System on this 30th day of April, 2019.

/s/ David A. Shorr
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