November 9, 2018

Chief Clerk’s Office
Illinois Commerce Commission
527 East Capitol Avenue
Springfield, IL 62701
ICC.EVNOI@illinois.gov

Submitted via USPS and by email

Re: 18-NOI-01. Notice of Inquiry Regarding Electric Vehicles

Dear Sir or Madam,

Please accept for filing the Reply Comments of Sierra Club and Natural Resources Defense Council, filed in response to the Commission’s Notice of Inquiry Regarding Electric Vehicles.

If you have any questions about the material in the comments, please do not hesitate to contact me at 415.200.9778 or nathaniel.shoaff@sierraclub.org.

Respectfully submitted,

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I. The benefits of widespread transportation electrification are clear.

In its Notice of Inquiry Regarding Electric Vehicles, the Commission asked commenters to describe the benefits associated with increased electric vehicle (EV) deployment.

Of the more than 20 commenting parties, the vast majority agree: increased EV deployment supports health, security, electricity grid, economic, and environmental benefits.\(^1\) This consensus view is not surprising. The body of evidence concluding that EVs support these benefits is overwhelming.\(^2\) At the same time, it is worth noting the diversity of the parties that share agreement. The represented interests include those of Illinois’ two largest electric utilities, the 275 Mayors of the Chicago Metropolitan Mayors Caucus, technology companies, manufacturers, ratepayer and consumer advocates, environmental groups, and the Chicago-Area Clean Cities, representing six Chicago-area counties, among others.

The reasons to move quickly to electrify are clear. At scale, the benefits of transportation electrification are enormous. MJ Bradley and Associates estimate that a mass market for EVs consistent with projections by Bloomberg New Energy Finance could provide cumulative benefits of $43 billion to the State of Illinois.\(^3\) Those benefits include: $1.8 billion in ratepayer benefits from reduced electricity bills from improved utilization of the grid; $5.6 billion in societal benefit, as the monetized value of reduced greenhouse gas emissions; and $35.2 billion worth of benefits for Illinois drivers in the form of reduced maintenance and fuel costs. Beyond the MJ Bradley study, additional benefits would also accrue from reduced transportation

\(^1\) See ABB at 3-4, 6-7; Advanced Energy Economy at 1; Ameren at 1; Alliance for Transportation Electrification at 1-3, 8-10; Chicago-Area Clean Cities Coalition at 2-4; ChargePoint at 1-2; ComEd at 3, 7-8; Citizens Utility Board and Environmental Defense Fund at 3-4; Elevate Energy at 1-2, 3-4; Metropolitan Mayors Caucus at 2-3; Office of Attorney General at 4 (recognizing that EVs can place downward pressure on rates); Siemens at 3; Tesla at 9-10; Union of Concerned Scientists at 1-5; Workhorse at 2.

\(^2\) See Comments of Sierra Club and Natural Resources Defense Council at 12-14.

pollution health impacts and improved energy security. Action should be taken now to “pull forward” these benefits, making it so Illinois will realize them sooner rather than later.

While the $1.8 billion that MJ Bradley estimates in reduced electric bills from improved grid utilization is squarely within the Commission’s purview, the much larger $35.2 billion in reduced fuel and maintenance costs would accrue to Illinois residents who are also utility customers. The Commission and its regulated utilities have a long history of advancing energy efficiency and bill-assistance programs to help those customers who spend a disproportionate share of their income on electric bills. However, the average American spends twice as much on gasoline annually as they do on electricity. Transportation electrification can offer relief for the total household energy burden, cutting the transportation bill at least in half (and potentially more if customers charge during off-peak hours on well-designed TOU rates). Because of the diverse mix of energy sources and utility regulatory bodies like the Commission, the price of electricity in dollars-per-gasoline-gallon equivalent terms has been steady around the dollar-per-gallon mark for over 20 years. In market contrast, gas prices swing wildly due to events over which we have no control. Given that, it is shocking, although not surprising, to see American Petroleum Institute and Americans For Prosperity-Illinois suggest that transportation electrification will only serve to harm low-income populations and that the preferable path is to keep them on the fuel price rollercoaster depicted below.

![Graph showing gasoline and electricity prices](image)

*Shown in $/eGallon* or the cost of fueling a vehicle with electricity compared to a similar vehicle that runs on gasoline

Data source: Energy Information Administration, Aug 2018; Monthly averages

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4 American Petroleum Institute at 1-2; Americans For Prosperity at 1, 3.
II. The need for the Commission and utilities to plan for transportation electrification and to actively support vehicle-grid integration is clear.

To maximize the benefits described in Section I, it is critical that the Commission and utilities have an active role in planning for an EV future and ensuring that EV load is well integrated with the electricity grid. The comments filed in this docket reflect a consensus that there are basic issues that the Commission or its regulated utilities are well situated to address, including system planning, rate design, and the strategic and equitable deployment of infrastructure. Moreover, the Commission is uniquely situated to convene the many stakeholders at the intersection of the transportation sector and utility regulatory field that now share a common interest in electricity regulation.

Well-designed rates are a key component of achieving transportation electrification benefits. As Sierra Club and NRDC explained in our initial comments, time-variant rates are an effective tool for managing EV charging loads and can encourage off-peak charging that reduces strain on the grid and lowers the cost of electricity for all ratepayers. The vast majority of commenters here agree on the importance of rate design in optimizing the grid benefits of transportation electrification. For example, comments representing a diverse set of viewpoints addressed the benefits of time-of-use rates (or other time variant hourly rate structures) for long-dwell locations such as home and workplace charging. Indeed, the 120 (and counting) signatories of the Transportation Electrification Accord, including ABB, Advanced Energy Economy, the Alliance for Transportation Electrification, Illinois Citizens Utility Board, Respiratory Health Association Siemens, and Workhorse endorse the use of time-variant rates and other forms of load management to optimize grid benefit and integrate renewable generation. Additionally, many commenters noted that modifications to utilities’ existing demand-based commercial tariffs that would apply to DC fast charging stations or medium- and heavy-duty vehicle charging could better align rates with cost-causation principles and facilitate higher levels of vehicle adoption and infrastructure investment.

Most commenters also agree that the Commission plays a valuable role in bringing together stakeholders, including utilities, gathering information on lessons learned from experiences in Illinois and elsewhere, and establishing best practices and policies for the state moving forward. As the map included as Exhibit 1 illustrates, utility regulators in at least 26 states and the District of Columbia either have or are in the process of reviewing and adopting approaches to address EV-grid integration issues such as those before the Commission in this proceeding.

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5 Illinois Commerce Commission, Docket No. 18-NOI-01, Comments of Sierra Club and NRDC at 17 (Oct. 23, 2017).
6 Illinois Commerce Commission, Docket No. 18-NOI-01, Comments of ABB at 9, Ameren at 19, ATE at 16, ChargePoint at 3, UCS at 6, Tesla at 15-16, Elevate Energy at 2-4.
7 See https://www.theevaccord.com/.
8 E.g., Comments of Alliance for Transportation Electrification at 17, Metropolitan Mayors Caucus at 4, Tesla at 18-19.
9 E.g., Comments of Ameren at 2, EVGo, Metropolitan Mayors, AEE, ABB at 8, ChargePoint at 11-13, CUB and EDF at 1-2.
Multiple commenters here also identified a lack of sufficient EV charging infrastructure as a key barrier to EV adoption and advocated for policies aimed at strategic infrastructure deployment to achieve transportation electrification benefits at scale.\(^{10}\) At minimum, the Commission should evaluate the varied roles that the utility can play with respect to charging infrastructure. Utilities are well positioned to support early deployment of EV charging infrastructure, particularly at multi-unit dwellings and other areas where private incentives may not provide sufficient justification for optimal build-out. In making investments at this critical, early stage, utilities can help resolve the “chicken and egg” market coordination problem by helping to grow the charging networks necessary to support widespread EV adoption. In turn, this will generate a more robust market for EV charging. Indeed, many state utility commissions have already approved utility transportation electrification programs that include infrastructure deployment in addition to other efforts to support EVs and EV-grid integration, such as education and outreach, load management and smart charging programs, and tariff modifications for the operation of DC fast charging stations.

Finally, it is worth noting that while a minority of commenters raised concerns about competition from utilities stifling private investment in a still-nascent EV charging market, those concerns are not shared by EV charging providers themselves. EVGo states that, “utilities have been, are, a critical partner in the EV charging space.”\(^{11}\) Likewise, ChargePoint notes, “[w]e believe that there is a vital role for utilities in supporting efficient integration of EV load and that the right program design can encourage the installation of more charging stations around the state in a manner that complements, and does not duplicate or conflict with, the private market.”\(^{12}\) Siemens and ABB also agree that utilities play a critical role.\(^{13}\)

III. The need to plan for transportation electrification is underscored by the increased demand for, and availability and affordability of, electric vehicles.

There is little debate on whether transportation electrification will become widespread; the question is when and how fast. The Commission should act now as part of its role to ensure access to electricity is safe, reliable, and affordable. The Commission must also address issues related to EVs and EV charging, resolution of which can enable and maximize EV benefits.

A small number of commenters may suggest that it is still too early to evaluate complementary investments to support transportation electrification. However, electrification is already beginning to fundamentally transform the transportation sector in the United States and abroad. Globally, automakers have announced plans to invest over $150 billion to scale EV production and drive technology innovation that supports economic development.\(^{14}\) Nationally, there are 60 light-duty Model Year 2018 EV models available, and that number is expected to

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10 E.g., Comments of ABB at 8, Ameren at 16, AEE, ATE at 5-7, ChargePoint, CUB and EDF, UCS at 1.
11 Comments of EVGo at 1.
12 ChargePoint at 14.
13 E.g., Comments of ABB at 8; Siemens at 2.
increase to 108 models by 2022. Moreover, EV sales are beginning to increase rapidly as the United States approaches 1 million cumulative EV sales: the chart below illustrates year-over-year sales growth in July, August, and September, where 2018 exceeded 100 percent. The Illinois EV market has increased to approximately 17,000 EVs; in a state with roughly 10 million registered light-duty vehicles, they make up a small but growing percentage of the overall vehicle fleet.

Figure 1 - Monthly Light-Duty EV Sales (Atlas Public Policy)

A small minority of commenters also suggest that the benefits of light-duty EVs are accessible only to a select few. In response, advancements in battery technology have pushed down the cost of battery packs – and EVs – precipitously over the last decade from $1,000/kWh to less than $300/kWh. Experts anticipate these costs will continue to decline past 2025, when the price of battery packs is widely expected to make EVs cost-competitive with internal combustion engine (ICE) vehicles on an upfront basis. However, given their superior efficiency and low maintenance, EVs are already competitive with ICE vehicles on a total cost of ownership basis: lower fueling and operation costs amount to over $35 billion in cumulative

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16 Atlas Public Policy.
17 Id.
19 Id.
savings for Illinois drivers by 2050 if the market is given a clear signal to support transportation electrification.\textsuperscript{20} Bloomberg New Energy Finance estimates that nearly 80 percent of battery electric vehicles are leased, meaning that after several years the vehicles return to the secondary market at modest prices.\textsuperscript{21} Moreover, a series of innovative electric car-sharing pilots targeted at low-income communities are making transportation electrification more accessible than ever before – all without conventional vehicle ownership.\textsuperscript{22}

Finally, some commenters appear to speak only to the electrification of light-duty vehicles. The market-ready technologies for medium and heavy-duty (MHD) vehicles—including transit and school buses, delivery trucks, and all manner of ground support equipment—are already in use across the country and provide similar benefits to light-duty EVs, as evidenced by Workhorse’s initial comments.\textsuperscript{23} These vehicles reduce the noise and air pollution associated with diesel vehicles (such as harmful nitrogen oxides and particulates that threaten local air quality and cause damage to human health, as well as greenhouse gas emissions) while improving access to clean transportation options and providing significant opportunity for grid benefit due to their predictable duty cycles. All Illinois residents stand to benefit from the electrification of these vehicles. Moreover, a robust and growing market for medium and heavy-duty electric vehicles already exists. According to Drive Clean Chicago, a program that seeks to scale alternative fuel transportation, there are over 30 all-electric bus and truck models eligible for program participation.\textsuperscript{24}

Sierra Club and NRDC strongly believe that the benefits of transportation electrification should be accessible to all, and the Commission should ensure that electrification of medium- and heavy-duty vehicles remains a core focus in future Commission engagement in transportation electrification.

\textbf{IV. Conclusion}

In short, transportation electrification is coming and it can provide substantial benefits to electricity customers, the grid, and the environment. However, certain barriers to widespread transportation electrification exist. There is broad agreement that the Commission and utilities must act now to ensure those barriers are addressed in partnership with other market participants. Failure to take action could hamper utilities’ ability to take full advantage of EVs,

\textsuperscript{20} M.J. Bradley & Associates, Plug-in Electric Vehicle Cost Benefit Analysis: Illinois at iii, September, 2017. Moreover, if most vehicle charging takes place at off-peak times, all utility customers will benefit from downward pressure on electricity rates.
\textsuperscript{22} Forth Mobility, The Future of Car Sharing: Electric, Affordable, and Community-Centered, June, 2018: https://forthmobility.org/storage/app/media/Documents/2018.07_cev_casestudy_FINAL.pdf; BlueLA is an electric car-sharing service launched in 2018 aimed at serving community members in Los Angeles with 100 cars and 200 charging points, more information at https://www.bluela.com/; Green Raiteros is a rural ridesharing program aimed at serving primarily low-income Latino communities in Central California, more information at https://sharedusemobilitycenter.org/news/sumc-celebrates-launch-of-new-ev-rideshare-green-raiteros/.
\textsuperscript{23} Workhorse Group, Inc., Re: Inquiry Regarding Electric Vehicles.
\textsuperscript{24} See http://www.drivecleanchicago.com/CleanTruck/EligibleVehicles.aspx.
cause grid integration issues, and ultimately hurt customers. For these reasons, the Commission and utilities should support – not impede – transportation electrification.

We thank the Commission for the opportunity to submit these reply comments and look forward to the opportunity to work with other stakeholders to advance transportation electrification solutions that support the Commission’s vision for a clean, modern, and integrated grid.

Respectfully submitted,

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Exhibit 1