COMMENTS OF THE JOINT UTILITIES IN RESPONSE TO THE PUBLIC SERVICE COMMISSION’S REQUEST FOR POST-CONFERENCE COMMENTS


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2 The Notice also announced that a working group meeting will be hosted by the Department of Public Service Staff (“Staff”) on Friday, September 21, 2018 to “discuss rate design principles to be applied to electric vehicle charging stations.” Notice, p. [1].
3 See EVSE Proceeding, Staff Agenda for Technical Conference (filed July 10, 2018).
I. Introduction

The Joint Utilities have long been actively engaged in the State’s efforts to advance clean energy and reduce greenhouse gas (“GHG”) emissions. The Joint Utilities have raised concerns that sectors other than the electricity sector must also begin to more meaningfully contribute to emissions reductions in order to meet the State’s ambitious 40 percent reduction in GHG emissions goal by 2030.4 Electrification of the transportation sector is a critical step toward meeting the State’s GHG emission reduction goals and simultaneously reducing localized criteria air pollutants and their attendant impacts on public health.

Recent analyses demonstrate that the total cost of ownership of an electric vehicle (“EV”) is reaching parity with vehicles fueled by gasoline or diesel in multiple market segments.5 As battery and technology costs continue to decline, the improved value proposition for consumers will drive higher EV adoption rates. In short, the Joint Utilities see the EV market as poised for substantial growth in the near future. The time is now to develop the policies and approaches that will support and accelerate the development of the EV market in New York.

Utilities have an important role to play in jump-starting EV adoption in New York. However, for the State’s efforts to be successful, stakeholders from across the EV market spectrum must commit to joint action and work together to accelerate transportation electrification. The Joint Utilities appreciate the opportunity to provide these comments and look forward to working with the Commission, Staff, and other stakeholders as the EVSE proceeding progresses.

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4 This 40 percent reduction in GHG emissions from 1990 levels targets the energy sector (i.e., power generation, industry, buildings, and transportation). The State has established a longer term goal of decreasing total carbon emissions 80 percent by 2050.

5 See, e.g., Bloomberg New Energy Finance Long-term Electric Vehicle Outlook 2018 (May 21, 2018), which reports that total cost of ownership (“TCO”) price parity in the mid-2020s is due to decreasing battery costs.
Policies at the State level should recognize the need for and seek to encourage collaboration among the stakeholders. Furthermore, policies should recognize the strengths of respective stakeholders and identify specific roles that each stakeholder can fill. There are many specific roles for utilities in accelerating the adoption of EVs, including making EV charging infrastructure investments, designing cost-reflective rates, conducting education and outreach to customers, identifying the need for developing incentive programs, and forming strategic partnerships. The Joint Utilities address these various roles and corresponding actions in the body of these comments.

Each segment of the EV charging market will likely require a different solution or set of solutions; the best solution(s) will depend on many variables including, but not limited to, the segment itself, demographics, population and building density, routes of major thoroughfares, and workplace charging options. The EV market is still in its early stages and will likely develop differently across the State. As such, policies regarding utility roles should provide broad flexibility to accommodate local needs and should encourage the development of utility-specific investment plans that address the unique characteristics of each utility’s service territory. These investment plans should allow utilities to propose cost-recovery mechanisms that support near-term actions that may be taken before investments are incorporated into future rate case proceedings.

The Joint Utilities recognize that any policy discussion must carefully consider the potential impacts on all customers. Because EV charging will increase the use of the electricity grid, EVs have the potential to increase system utilization, and can place downward pressure on electricity rates. However, this will only be true if EV charging is subject to proper price signals to guide charging away from local or system peaks. If the opposite occurs, EVs have the
potential to increase system peak, exacerbate existing constraints, increase power sector emissions, and raise costs for all customers. For these reasons, the Joint Utilities support the use of time-varying rates for EV charging as well as the retention of demand-based rates for EV charging that exceeds the minimum requirements to be placed on a demand rate, e.g., Direct Current Fast Charging (“DCFC”) equipment.

II. Post-Conference Comments in Response to Notice Questions

1. What role should the utility play in supporting Electric Vehicle Supply Equipment (EVSE) deployment? Please address this question from the perspective of utility ratepayers, Electric Vehicle (EV) suppliers, and providers of EVSE. How should utility investment costs, if any, be compensated or recovered? Should utilities have the opportunity for earnings adjustment mechanisms related to successful EVSE deployment?

The EV market remains in its early stages of growth and will likely develop differently in various parts of the State due to many factors, including, but not limited to, demographics, population, building and housing density, and the location of major thoroughfares. Given the significant differences among communities across the State, e.g., New York City, Newburgh, and Utica, it is appropriate to develop transportation electrification solutions that reflect such differences. The Joint Utilities, with their understanding of the unique characteristics of their service territories, can play a key role in facilitating and/or providing EV charging infrastructure deployment.

In order to provide a more comprehensive response to this question, the Joint Utilities have opted to answer this question more broadly than the limited meaning of “EVSE deployment,” which typically refers exclusively to the hardware that connects an EV to the
The electric utility can play an important role with respect to EV charging infrastructure investment, which can include various options, including, but not limited to, the following:

- Make Ready. Electric utility funds the installation and supply infrastructure costs up to the charging equipment via utility construction or rebates to site hosts. The customer procures and pays for the charging equipment.

- Full Ownership. Electric utility funds and owns the full installation, up to and including the charging equipment.

- Charger Only. Electric utility funds and/or owns the charging equipment, utilizing the existing supply infrastructure on the premises and/or offsetting any installation costs.

The Joint Utilities envision these different roles to likely vary by market segment. In certain cases, the utility may own and operate EVSE. In other cases, the utilities may serve more of an enabling role, for example, investing in make-ready infrastructure and/or chargers, offering incentives, providing education and outreach, and providing technical support. A priority for the utility will continue to be providing appropriate rate design. A variety of creative business arrangements can be created within and around these fundamental roles.

Full utility ownership and operation of charging infrastructure may be appropriate in certain situations. For example, these might include, but are not limited to, instances where there are public benefits to addressing areas that lack investment capabilities, partnering with municipalities to add public facing chargers, or in cases where the customer may be looking for a complete “turn-key” solution. With respect to public benefits, these types of public sites might include parking lots, municipal installations, or on-street installations. Conversely, utility-

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6 The Joint Utilities consider the role of the utility in EV charging infrastructure deployment to encompass the broader investments required to support the EVSE and EV market.
provided “make-ready solutions” may be more appropriate for other segments such as commercial installations. While some customers may opt for the flexibility of owning their own equipment, others may decide that a more holistic, utility-owned solution offered as a service is preferable. An illustration of the latter is an apartment building where building owners may not see a value in dedicating parking spots and providing charging to a limited number of tenants with EV.

These examples illustrate the importance of the value proposition to a site host. In cases where that value is modest or unproven, make-ready infrastructure investments may not be sufficient to drive the necessary scale of adoption. Such cases suggest a strong rationale for utility ownership of charging infrastructure.

It is possible that the utility’s role will change over time. In the near future, utilities can play an important role in multiple parts of the EVSE value chain to help drive increased transportation electrification. For example, the business model around DCFC services is not well-defined. In the longer term, a defined DCFC services business model will catalyze the EV market and prompt a revised utility role in electrification services.

In light of the many considerations and potential market dynamics outlined above, it remains premature to foreclose options by limiting the utility role at this early stage. The Joint Utilities are participating in ongoing demonstration programs and pilot projects to test EVSE deployment, business models, and partnership arrangements. These models may evolve in many ways.

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7 The Joint Utilities view the near future as the next three-to-five years.
For these reasons, the Joint Utilities urge Staff and the Commission to allow flexibility in the approach taken to EV charging infrastructure investment by the different utilities. These approaches could be outlined and discussed in further detail in utility-specific EV investment plans.

Regardless of the approach adopted, cost recovery will be crucial to enabling utilities to make these investments. The proposals should be treated as capital expenditures for the purposes of utility ratemaking and accounting. Program-achievement-based or outcome-based earning adjustment mechanisms may also be appropriate additional measures for EV charging infrastructure deployment. The Joint Utilities seek a strong signal from the Commission indicating that utilities will be able to recover the costs associated with activities in support of deploying EV charging infrastructure.

Utility investments in EV charging infrastructure will provide numerous benefits. They will advance multiple state policy objectives—including air quality improvement and GHG emissions reductions—that benefit all customers. Particularly when coupled with appropriate rate design, these investments are likely to place downward pressure on volumetric electricity rates for customers by increasing the overall utilization of the electricity system. Accelerating deployment of charging installations and increasing charging accessibility may reduce range anxiety for prospective EV customers and accelerate EV adoption.

2. What are the most significant changes the Commission can make in order to enhance the utilities’ roles in supporting EVSE deployment? What are the benefits and problems with utility ownership of EVSE?

The Joint Utilities provide the following recommendations for Commission actions to enhance the utilities’ roles in supporting EVSE deployment:
• The Commission can provide the utilities the opportunity to file EV investment plans as part of the EVSE Proceeding. These investment plans could explore multiple options for EV charging infrastructure deployment and propose approaches specific to their respective customer base and service territories.

• The Commission can allow EV charging infrastructure investments to be treated as capital expenditures and provide utilities with a mechanism to seek cost recovery for near-term investments prior to when these costs can be included in future rate case proceedings.

Utility investment in EV charging infrastructure presents an important opportunity to spur market adoption. As noted in the response to the preceding question, utility investment can take many forms—including creative partnerships with third parties. In many cases, utility investment may help bring charging to communities where it otherwise may not have been installed; for example, in less-densely populated areas and for low and moderate income (“LMI”) customers, where individual EV adoption may proceed more slowly than in other areas.

Potential arguments against utility ownership of EVSE include the potential for anti-competitive behavior; the potential for subsidizing via rate base a particular subset of customers (i.e., EV owners); and limitations on site host flexibility. The Joint Utilities assert, however, that these arguments are generally over-stated and can be overcome through collaboration, transparency, and Commission oversight.

With respect to arguments regarding competitiveness, there are several important considerations that mitigate such concerns and ways in which such concerns can be addressed. First and foremost, it is important to recognize that the EVSE market is made up of a variety of participants, including hardware manufacturers and equipment retailers, installers and
maintenance providers, charging station owners and hosts, charging station network operators, system operators, and utility providers. Further, there are a variety of business models in the market today that bundle the services that each market participant is expected to provide; some providers only sell the physical hardware or networking services to site hosts, whereas others sell both services. In some cases, site hosts own and operate the infrastructure; in some cases, the installer maintains ownership. In sum, the EV charging market has multiple actors, and each is providing different competencies, products, and services.

Perhaps most importantly, end-to-end utility ownership of EV charging infrastructure does not eliminate any of these market participants or change fundamentally their respective roles. Rather, utility ownership in some markets may provide the investment necessary to accelerate innovation in a market that to date, has had limited growth. In this case, utility ownership may help to achieve the benefit of a fully developed supply chain for charging services to the benefit of all market participants.

Utility ownership of EV charging infrastructure, and where appropriate EVSE, can accelerate transportation electrification to help meet State targets including clean energy targets, GHG emission reductions, and improved air quality. Moreover, the benefits of transportation electrification are distributed broadly. As discussed previously, the Commission should not foreclose utility investment in EV charging infrastructure today based on long-term concerns about committing customers to investments in this market. Over time, the role of the utility is likely to change significantly, and it is too soon to tell how the utility’s role will evolve. Further, allowing utility investment today is a decision that can be modified in the future. California’s regulatory environment offers an example: the California Public Utility Commission (“CPUC”) originally ruled in 2011 that utilities could not recover costs related to EV service equipment
from ratepayers, nor could they own EVSE. It was not until several years later, in large part because of concerns around the slower-than-expected deployment of EV charging infrastructure, that the CPUC reversed this decision. The Joint Utilities seek to avoid a similar situation in New York’s EV and EV charging infrastructure markets.

The concern that utility investment and ownership of EV charging infrastructure, especially in EVSE, can still be compatible with active choice and markets has previously been addressed in the proceeding. This was discussed by stakeholders at the Technical Conference.

There are other benefits to utility ownership of EV charging infrastructure including enhancing safety, bolstering a positive consumer experience, and the ability to improve system efficiency through grid-integrated rate design.

3. What role should the utility play in encouraging EV adoption? Should the role of the utility extend beyond customer education and awareness? Please address this question from the perspective of utility ratepayers, EV suppliers, and providers of EVSE. How should utility costs, if any, be compensated or recovered?

Utilities are already playing a role in encouraging EV adoption and are expanding their efforts and partnerships. Increasing consumer awareness is a key area for utility involvement through ride-and-drive events, coordination with dealerships, bill inserts, social-media outreach, and utility websites as an online resource for customers. However, such activities are simply part of what the Joint Utilities view as a broader portfolio approach to transportation electrification. Current utility EV programs range from EV-appropriate rates filed in compliance with Public Service Law (“PSL”) Section 66-0 to vehicle charging rebates available to EV drivers, to demonstration projects developed with public and commercial partners.

Examples of these efforts include:
• Con Edison: (1) implemented its SmartCharge program that provides discounts to light-duty vehicles and was recently expanded to medium- and heavy-duty vehicles, (2) filed a Reforming the Energy Vision (“REV”) demonstration project for EV school buses, and (3) provides an internet channel for customers to compare EV automobile prices on the cars.conedison.com website, which gives consumers the ability to understand price differentials between electrified and traditionally powered vehicles.

• O&R: (1) provides an internet-based calculator, that will help prospective EV buyers fully understand the benefit of owning an EV and the true cost of EV ownership, (2) provides a link to various Level 2 chargers currently in the marketplace and highlighted rebates provided by the manufacturer of these chargers, and (3) promotes incentives and rebates offered by EV manufacturers.

• RG&E: (1) started implementing a DC Fast Charger paired with stationary storage that will give public access to DCFC while demonstrating how storage can be used for demand management, and (2) offers and promotes Level 2 chargers through its online marketplace.

• NYSEG: (1) started implementing a DC Fast Charger pilot project in order to design and test investment models and a programmatic approach that encourages site host investment in charging equipment, and (2) offers and promotes Level 2 chargers through its online marketplace.

• National Grid: As result of the Company’s rate case which concluded in March 2018,9

(1) commenced implementing an Electric Transportation Initiative under which the

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Company will make capital upgrades to accommodate the future installation of EV charging stations at commercial customers’ properties and provide incentives to property owners to encourage station installation, and (2) established an Environmentally Beneficial Electrification earnings adjustment mechanism (“EAM”) metric to incentivize low-carbon technologies, including EVs; and (3) proposed a beneficial electrification rate for residential customers. National Grid also offers workplace charging and vehicle incentives to employees to stimulate adoption and learn by doing.

- Central Hudson: (1) established an Environmentally Beneficial Electrification earnings adjustment mechanism (“EAM”) metric as a result of its most recent rate case to reduce carbon emissions by facilitating low-carbon technologies, including EVs;¹⁰ (2) will evaluate EV programs to be included in the Carbon Reduction Implementation Plan to be filed in June 2019; (3) developed a new strategic focus on Utility Infrastructure, Vehicle Charging, and Advocacy and Education, including the following: (a) attending and exhibiting at local events and issuing information via print and digital channels; (b) planning an inaugural EV Summit event for this fall; (c) regularly promoting available manufacturer, state and federal incentives, and providing links to educational guides, charging station apps, comparison and calculator tools via its website; (d) offering and promoting Level 2 chargers through its digital marketplace platform; and (e) proposing an EV time-of-use (“TOU”) rate.

In addition to dedicated utility efforts to improve customer awareness of EVs and EVSE availability, automobile manufacturers, dealers as well as government and non-governmental

organizations, have a role to play to encourage EV adoption. For example, manufacturers, dealers, and governments can offer rebates and lower prices to assist in increasing EV adoption. Regional grassroots organizations can also provide education and awareness.

As noted previously, cost recovery is a critical factor in the EVSE Proceeding. The Joint Utilities will seek cost recovery where appropriate for investments that support EV adoption, including costs for dedicated outreach and education activities. Specific cost recovery for these items can be handled individually for utilities.

4. What is the best way for utilities, charging station providers, and site hosts to work together to locate charging stations where they best meet electric system, customer, and community needs? What data is needed to further this collaboration?

The Joint Utilities continue to look for ways to address this issue and are committed to working with charging station providers and sites hosts to locate charging stations in locations where they best meet the needs of customers. Utilities are well positioned to facilitate the deployment of EV charging infrastructure by providing an understanding of distribution system capabilities and the costs associated with any needed service connections or upgrades. Collaboration among the utilities, public officials, site owners, and charging station providers will be key in developing locations that will serve the public while not resulting in excessive make ready costs or electric system upgrades. One suggested method to assist in identifying appropriate locations for EV charging stations is for utilities to provide developers the locations where the electric distribution system can adequately serve the large point loads of high capacity charging stations. The Joint Utilities already provide large amounts of system data to assist in the development of distributed energy resources (“DER”) while also using that data internally to plan for and maintain an electric distribution system that provides safe and reliable service. The
Joint Utilities have a System Data working group that is available to advance system data collaboration. To the extent that developers of EV charging stations require additional information that is not already provided them, they should provide clear requirements so that the Joint Utilities System Data working group can work collaboratively to investigate ways to develop this information and how this information can be disseminated.

Another aspect of this collaboration will be working with the charging station providers to develop standard service or interconnection requests, and standard load and load shape estimates for the various charging station configurations. This will assist utilities in understanding how these stations will impact the electric system and reduce some uncertainty in these requests for service. As part of the interconnection process, charging station providers will need to provide utilities with data and information necessary to establish the models and loads of various charging station configurations.

Finally, to better identify the needs of the community, public officials and site hosts should share long-term plans or identified charging station needs so that these can be assessed for the compatibility with existing and planned utility infrastructure and distribution capacity.

5. Are there any communities or customer groups that require special consideration in the placement of EVSE facilities? What role should the utility play in encouraging or facilitating increased EV usage by low- to moderate-income households?

The Joint Utilities’ approach to investments that will spur EV adoption in their respective service territories will consider various market segments and customer groups. This will include consideration of investments that support charging at home, workplaces, destinations or in-route charging and for fleets. The Joint Utilities recognize that there are customer groups within each

11 More information is available online at http://jointutilitiesofny.org/system-data/.
of these categories that may require special consideration, and each utility will work within its unique market, to deploy charging solutions that best meet the needs of its customers. For example, charging solutions will need to fit the needs of drivers who live in multi-unit dwellings, those that rely on on-street parking and other residents who face hurdles to convenient charging options. The utilities also expect that strategies for placement of EVSE facilities will evolve as the market develops and more information regarding successful implementation is available.

Regardless of the market segment or the customer group, the Joint Utilities recommend that each utility be able to assess community needs with respect to transportation electrification, rather than assuming that utility intervention is the solution. The Joint Utilities seek a positive and robust precedent for investment that spurs EV adoption, and that reflects the diversity of transportation options that require consideration in each utility’s service territory.

Focusing on LMI customers, the Joint Utilities will seek to provide opportunities for EV usage in LMI households through an emphasis on electrified mobility—inclusive of a broad range of transportation options, including EV ownership, deploying EVs in ride hailing and car-sharing fleets, vanpool fleets, and public transit. In New York City, for instance, transit bus electrification enables significantly more passenger miles travelled per dollar than a comparable investment in Level 2 charging at a multi-family property.

The Joint Utilities support providing equitable access to transportation electrification opportunities to customers of all income households, including those living in environmental justice communities.

6. What rules, requirements, and standards are needed to enable EVs and EVSE to operate as a source of grid services and system value, including possible data and instrumentation needs?
The Joint Utilities are committed to working with stakeholders, including the New York Independent System Operator (“NYISO”), to identify the grid services products and programs that fit the capabilities and needs of emerging use cases for the vehicle-grid integration (“VGI”) market. EVs and EVSE have the potential to provide a variety of grid services, including, but not limited to, load balancing, demand response (“DR”), congestion relief, frequency regulation, voltage support, ramp rate mitigation, and reductions in peak demand. The viability of different use cases associated with these grid services depend on a combination of technology and consumer behavior. There is a lot to learn about customer behavior with respect to transportation electrification, and how that behavior aligns with the need and the ability to provide grid services. Where EVs are not explicitly identified in existing grid services products and programs, they may need to be added, or new ones developed.

The Joint Utilities highlight the expected temporal evolution of EV and EVSE to provide grid services. The Joint Utilities are currently focused on cost-reflective rate design for EVs and EVSE that encourages optimal charging to improve system efficiency. However, the Joint Utilities also recognize that EV and EVSE can be part of a DR program through managed charging, thereby giving the utilities the flexibility to shift the load using financial incentives other than TOU rates.

In the context of DR for EV and EVSE, there is a need to understand three critical aspects of EV charging: (1) when vehicles are charging, (2) where vehicles are charging, and (3) how much power is being delivered to the vehicle. Additional data about how customers use their vehicles and charging equipment will help utilities and other stakeholders understand these trends. The Joint Utilities support working with stakeholders to understand the most cost-
effective way to collect and analyze these data to characterize more accurately the potential grid services that EV and EVSE can provide.

The Joint Utilities recommend prioritizing various elements of pathways towards vehicle-grid integration that have been outlined by the National Renewable Energy Laboratory (“NREL”),12 the California’s Independent System Operator (“CAISO”),13 and the New York State Energy Research and Development Authority (“NYSERDA”).14 There are several goals and strategies from documents developed by those entities that the Joint Utilities present as guidance with respect to the rules, requirements, and standards needed to enable grid services from EVs and EVSE with some modification here:

- Develop use cases. The use cases can help define the possible variants and combinations of VGI functions, which then enables analysts to determine the corresponding benefits and costs and identify regulatory hurdles. NREL references the CAISO use cases as well as a separate set of use cases developed by the SAE International Hybrid Communication Task Force and the International Organization for Standardization (“ISO”).

- Focus on interoperability. Unified standards for the interconnection, communications, and information exchange among components in a VGI system will facilitate interoperability. To the extent that the Joint Utilities invest in EV charging infrastructure, the Joint Utilities seek leeway to incorporate stringent interoperability requirements into initiatives—thereby capturing the evolution of grid services that EV and EVSE can

provide. The Joint Utilities are focused on capitalizing on the potential of near-term grid services such as price responsive load/DR while not losing sight of the potential long-term benefits of bidirectional power flow between the vehicle and the grid (“V2G”).

- Maintain consistent policy across DER value chain. The Joint Utilities encourage the Commission to remain technology-agnostic. This means identifying and recommending the instrumentation and standardization for EVs and EVSE that reflect the nuance of EV and EVSE use, e.g., EVs charge at many EVSE in different locations, and existing instrumentation and standardization may not be appropriate. This also means developing rules that are consistent with other DER options. For instance, in the Value of DER (“VDER”) Proceeding, as part of the determination for the expanded eligibility of the value stack to stand-alone energy storage, the Commission determined that storage is eligible for the VDER compensation tariff for any hourly injections to the grid including V2G systems.15

The expected evolution of the EV market indicates a clear need for the development of standards, communication protocols, and rules. These standards should be considered carefully, systematically, and harmonized with both existing standards and distribution system operation and planning to the extent feasible. Broadly speaking, the existing standards for EV charging include physical connectivity standards for wired charging and discharging (e.g., SAE J1772 and SAE J3072), communications standards (e.g., for distributed networks via IEC 61850 or between EVs and customers via SAE J2847/5), information exchange standards (e.g., IEC 61970, IEC 61970, IEC

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61968, IEC 62325 using the Common Information Model for DER), and cyber security standards (e.g., IEC 62351).

The data and instrumentation requirements for EV and EVSE to operate as a source of grid services depend on the end use. Both the NYISO and the Distributed System Platform ("DSP") markets have evolving requirements. For instance, DER participation in the NYISO wholesale markets requires aggregation to a minimum resource size—which could be a collection of EV or EVSE. The modest levels of EV and EVSE deployment today will limit the potential for aggregation as a grid service until the market matures and deployment increases substantially. The point of aggregation dictates the type of controls and communications technology required to be deployed. In either case, however, the NYISO needs to view it as a single resource. This will require potentially complicated metering and telemetry that can understand where, when, and how much energy an individual vehicle, as part of the larger "single resource," is consuming. This will require advanced metering infrastructure ("AMI") and sensing technologies for real-time energy management, and for grid quality and reliability. The market today is limited: the sensing and monitoring functions in most EVSE deployed today can measure power consumption and this limits the potential for full V2G bidirectional flow. Regardless, there are many ways to realize the benefits of aggregated EV or EVSE.

7. What are the barriers to treating EVs and EVSE as Distributed Energy Resources (DERs)? How does rate design affect the ability of EVs and EVSE to provide this value? How does rate design affect the extent to which the value provided by EVs and EVSE (including environmental and economic benefits) is compensated?
Despite the fact that the Commission did not include EV on the initial list of DER which includes energy efficiency, DR, distributed storage, and distributed generation,\(^\text{16}\) it clearly articulated that EVs could function as grid assets and provide distributed storage or voltage support through DSP markets\(^\text{17}\) thus making them DER. Moreover, the Commission’s enumerated categories of DER include DR and flexible load. EVs represent one of the most flexible load categories.

In the short term, the low numbers of EVs in New York will limit their participation in providing grid services at scale. The extent to which EVs are available as grid resources will largely depend on their attractiveness as a viable transportation option. Grid services are unlikely to be the motivating factor for mass market purchasers.

The primary grid value that EV can offer in the near term is flexible load. It is incumbent upon all participants to see that they do not exacerbate peak loading, which will drive up costs for EV drivers and all other customers alike through increased capacity needs in the bulk system, and on more local networks. In the mid- to long-term, other opportunities for grid services may present themselves, including through the avoided curtailment of renewable generation as a result of over-supply. The notion of beneficial electrification load is more expansive than simply shifting loads from summer or winter peaks.

Rate design, likely enabled by AMI, is a crucial element in EV providing value to the grid as a DER encouraging an EV to inject or charge in patterns that do not exacerbate peak conditions. The Commission should work to establish that EV charging is done as far as possible under cost-reflective tariffs, including delivery demand charges and hourly pricing for


\(^{17}\) *Id.*, p. 26.
energy. Moreover, in many settings, including public charging at apartment buildings, hotels and other destination locations, EV loads will only comprise a modest piece of the customer’s energy and demand. Thus, to align the customers’ incentives with those of the system at large, and take advantage of the flexible nature of the EV demand, EV charging generally should not be required to be metered separately. To achieve New York State’s aggressive goals regarding transportation electrification, electricity prices that utility customers pay will need to reflect, as closely as practicable, the utility costs of the service, which, in turn, reinforces the need for well-designed demand-based rates for delivery.

Some of the value that EVs provide to society at large through lower tailpipe emissions than comparable internal combustion engines is not well-reflected in current pricing mechanisms. The damage functions from carbon dioxide do not vary by location, but the damage to human health due to the emissions of criteria pollutants, which vary dramatically by fuel and vehicle type are highly dependent on local population densities. Support for EVs should be a broad-based state policy, and the transportation sector should be responsible for its role in emissions.

Finally, utilities and customers have experience with certain types of DR products, but novel products may be required to unlock some of the flexibility of EV, or EV aggregated at the fleet level to provide support to the grid. Products should be defined in a technology-neutral way such that any flexible loads, including storage, EV or other types of DER can participate. The Joint Utilities already run demand management programs, but there will be space to support demonstration efforts that prime the market to facilitate EV participation as more vehicles reach the market.
8. Should EVs and EVSE be treated as DERs? If so, what factors need to be addressed to include EVs and EVSE within the DER market and compensation structure for DERs?

As discussed previously in the responses to Questions 6 and 7, EVs and EVSE could be treated as DER. In the near-term future, EVs and EVSE as DER will come through their role as flexible demand rather than through injections to the grid. To this end, cost-reflective tariffs are essential in sending proper price signals to EV, EVSE and the loads with which they are associated. As the Joint Utilities have cautioned across multiple proceedings, including VDER and the Energy Storage Roadmap, rates should be designed to reflect costs equitably, and should not be designed around the performance characteristics, or to support, a particular technology.

The Commission has created multiple constructs for compensating DER and should not create an EV-specific mechanism at this time. If EVs participate as a DER in DR or dynamic load management (“DLM”) programs, their contribution can be measured and compensated through existing, technology-neutral mechanisms developed on a program-wide basis. Moreover, the VDER Proceeding and VDER working groups are the appropriate place to discuss compensation for injecting DER. On September 12, 2018, the Commission expanded eligibility for the Value Stack compensation tariff to stand-alone energy storage resources,18 which may include EV injections.

9. What considerations should be taken into account in designing rates for charging stations? For example, should a typical three-part tariff (customer, demand and energy charge) be applied? Should the rate design be different for residential versus commercial use? Should the rate design be expected to change over time as EV penetration increases?

18 VDER Proceeding, supra, note 12.
Should time-of-use rates be required for EV charging? Should utility residential EV charging tariffs (filed in Case 18-E-0206) be modified? Please address these questions from the perspective of utility ratepayers, EV owners, and EVSE suppliers.

The Joint Utilities refer back to the rate design principles as presented during Panel 7 of the Technical Conference; which includes a review of selected REV Track Two Order rate design principles:19

- Cost causation. Rates should reflect cost causation, including embedded costs as well as long-run marginal and future costs. Delivery costs are driven primarily by customer demands and should be recovered primarily through demand charges.

- Encourage outcomes. Rates should encourage desired market and policy outcomes in a technology neutral manner. If proper rate design principles are followed, then there is no need for technology-specific rates.

- Decision-making. Rates should encourage economically efficient and market-enabled decision-making, for both operations and new investments, in a technology neutral manner. This assumes that price signals should encourage customers to make efficient use of the electric delivery system.

- Fair value. Customers and the utility should both be paid the fair value for the grid services they provide. Furthermore, one group of customers should not subsidize another group that is not paying its fair value of the services needed.

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• Economic sustainability. Rate design should reflect a long-term approach to price signals and the ability to build markets independent of any particular technology or investment cycle. The proper price signals are needed for the sustainability of the grid.

The goal of any rate design should be to adhere to these principles and each of the Joint Utilities should have the flexibility to develop rates that support these principles. The Joint Utilities recognize that residential and commercial EV charging may have different patterns, with residential customers more likely to charge overnight in off-peak hours, while public charging stations can have a harder time managing when charging occurs.

The electric grid is designed and built to meet peak demands, whether during periods of overall system peaks and distribution system peaks (i.e., coincident peak), local peaks, (i.e., by substation or circuit) or customer-specific peaks (i.e., non-coincident peak). While demand charge structures can have a variety of designs, their purpose is to recover the costs associated with meeting these coincident and non-coincident peak demands and to send price signals to customers to incent them to take actions that can reduce their peak demands and so reduce their bills while benefitting the system. This dynamic is equally appropriate for public charging facilities as for other comparable resources or customers. Public charging facilities would likely impact these coincident and non-coincident demands (e.g., morning and evening commutes) in ways that will be additive to upstream facilities and impact system peaks. Any solution that is developed should preserve appropriate price signals that encourage the design of fast charging facilities to limit impacts on the electricity grid from the outset. Demand charges are the mechanism to achieve this goal.
As discussed in the Joint Utilities’ May 29, 2018 filing in the VDER Proceeding,\(^{20}\) demand-based delivery rate structures for residential customers, \(e.g.,\) customers charging at home, should be considered since they appropriately align with the rate design principles and, in particular, strike an important balance among the principles of cost causation, customer orientation, and economic sustainability. However, these rate structures have additional metering requirements which could add to the costs, timing, and complexity of implementation. Because a demand-based rate structure more accurately reflects utility cost causation, it will deliver efficient price signals to residential customers and lead to investment decisions that appropriately reflect grid impacts and support REV goals. In the long run, these better-informed decisions will reward customers for investments and behaviors that support the grid, reduce burdens on the electric system, increase grid benefits, and lower costs for all customers compared to what would otherwise occur if current rate designs were left unchanged. Therefore, a three-part tariff in the context of residential customers is effective, applicable, and consistent with rate design principles.

More importantly, any financial assistance to promote public EV charging should only be considered as a temporary bridge during the interim period until utilization of public charging increases. Any financial assistance should allow for existing rate structures to remain in effect after this interim period. The Joint Utilities recognize that term- and MW-limited incentives or discounts can be used during this interim period of low utilization.

TOU rates should not be required for EV charging. However, TOU rates can be implemented as an option and could provide the appropriate pricing signals to encourage off-peak charging or demand mitigation. Residential customers or fleet vehicles that have the ability

\(^{20}\) VDER Proceeding, Joint Utilities’ Proposals on Rate Design Successor to Net Energy Metering for Mass Market Customers (filed on May 29, 2018), p. 5.
to shift their charging time to occur during off-peak hours would benefit from the lower rates and
the utilities will benefit from EV charging that occurs in periods that do not strain the system.

At this point in time, the Joint Utilities do not see a need to modify residential charging
tariffs that were filed under Case 18-E-0206. These charging tariffs are consistent with the
intent of incentivizing overnight charging to improve system efficiency and to help bring down
rates for all ratepayers over time. However, the Joint Utilities recognize that the TOU rates may
require modification in the future as technology advances and the uptake of other DERs evolves
over time.

10. How should the cost of recovering distribution network upgrades for EVSE be
recovered if not through the demand charges?

The Joint Utilities offer some clarification with respect to this question. First, the
propriety of demand changes is addressed in response to Question 9 above. With respect to
specific distribution system upgrades, this is dependent on the utility’s role in the deployment of
EV charging infrastructure. As discussed in response to Question 1, there are business models in
which the utility would be responsible for the costs (and subsequently obtain the ability to
recover those costs) from distribution infrastructure upgrades associated with investments in EV
charging infrastructure—including the make-ready model and utility ownership of EVSE.
Moreover, for the deployment of privately held EV charging stations, the costs of any
distribution upgrades should be recovered through the interconnection process and paid for by
the customer. In other words, network upgrades are recouped at the point of interconnection and
not via demand charges. Demand charges are not designed to address costs incurred from

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21 E.g., Case 18-E-0026, Tariff Filings to Effectuate the Provisions of Public Service Law Section 66-o
(Residential Electric Vehicle Charging Tariff), Consolidated Edison Company of New York, Inc. Compliance
with Public Service Law (“PSL”) Section 66-o (filed March 30, 2018).
infrastructure upgrades resulting from a specific project; rather, demand charges reflect the
requirements to service the overall system at peak loading capacity.

11. In designing EV and EVSE programs, how can the Commission ensure compatibility with ongoing regional initiatives, programs offered in other states, and potential private investment?

The Joint Utilities as a matter of situational awareness, consistently track ongoing regional initiatives, programs in other states and levels of private investment. The utilities participate in nationwide and regional EV conferences in meetings to learn what others are doing and planning to do. Lessons from others inform the Joint Utilities’ ideas and plans. Moreover, the Joint Utilities have invited regional organizations to participate in various activities, including the EV Readiness Framework.22 Certain members of the Joint Utilities have affiliate companies that help facilitate regional integration and the spread of best practices.

For example, the utilities are active participants in the Transportation and Climate Initiative (“TCI”), a regional collaboration of thirteen Northeast and Mid-Atlantic jurisdictions that seeks to develop the clean energy economy, improve transportation, and reduce carbon emissions in the transportation sector. One of the hallmark elements of the TCI includes the Northeast Electric Vehicle Network, which seeks to enable travelers to drive their plug-in cars and trucks across the entire region. The goals of the TCI are consistent with those of the Joint Utilities; they are focused on helping states to develop partnerships with utilities and other stakeholders; to identify ways to streamline the installation of EVSE; to coordinate planning so that charging stations are deployed in a way that supports local and regional travel; and to have a consistently positive experience for EV drivers.

The Joint Utilities would like the EVSE Proceeding to provide each utility the flexibility to make targeted transportation electrification investments that are most likely to spur EV adoption in their respective service territories. As each of the Joint Utilities develop their respective business cases, it is imperative that they incorporate lessons learned from, and compatibility, with other initiatives. However, this should be left to utility discretion as each develops its programs considering the input of others as needed. This approach enables the Commission to consider utility proposals on a case-by-case basis and identify the key initiatives for which they seek compatibility, rather than forcing compatibility via potentially arbitrary requirements.

There may be uses where coordination across states may deliver better value for customers through more targeted deployment, as in the case of DCFC infrastructure across major travel corridors. For example, there may well be value in coordinating DCFC locations across I-90 or I-95 or across state lines in the early stages of the market.

The last component of this question is related to compatibility with private investment. The Joint Utilities believe that utility investment in strategies to encourage EV adoption, particularly investments in EV charging infrastructure, will spur third-party investment. The Joint Utilities seek to jump-start EV adoption to help New York State achieve its clean energy targets, and have consistently communicated that this can only be achieved through joint action, including investment. To that end, utility engagement in this space is inherently compatible with and can be the catalyst for more third-party private investment.

**12. Should the Commission address electrifying light-duty passenger vehicles, and medium and heavy-duty vehicles within this Case?**
Yes, the Commission should address electrifying light-, medium-, and heavy-duty vehicles within the EVSE Proceeding. The Commission should also consider other EVs, such as forklifts and ground support equipment at airports and ports. However, expanding the scope of the case may also slow it down. Thus, the Commission may find it worthwhile to clearly articulate where it will address the important market segments covered by medium- and heavy-duty vehicles to develop a complete record regarding electrification.

The Commission is already considering medium- and heavy-duty vehicles, as evidenced by its recent approval of a Con Edison proposal to include these vehicles in the current SmartCharge program.23 Perhaps there is a way to address EV issues in a priority order, with some vehicle types being addressed after higher priority issues. Fleet charging is anticipated to be one of the areas in which utilities will likely seek to make investments to spur EV adoption. These fleet engagements will likely share the need for concentrated charger deployment and demand management, regardless of the equipment or vehicles being electrified. The Joint Utilities anticipate that the needs of fleet managers of both on- and off-road fleets will have considerable overlap.

13. How should Staff structure future stakeholder engagement in this proceeding? Should additional issue-specific working groups be held prior to Staff issuing recommendations?

The Joint Utilities look forward to working with Staff and other stakeholders in the EVSE Proceeding. There is much to accomplish in the EVSE Proceeding. To assist in resolving issues, the Joint Utilities recommend that a priority list be developed and issues be resolved for each

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priority. Future stakeholder forums should include DPS Staff and subject matter experts that include clear topic and time boundaries. That way, these meetings will enable DPS Staff to gather the appropriate level of information required to advance the EVSE Proceeding. In addition to the EVSE Proceeding Rate Design Working Group meeting, the Joint Utilities recommend potential working group topics to include: data and information sharing, interoperability and standardization, regulatory requirements and EVs, DCFC corridor planning, and cost recovery of transportation electrification investments.

14. Any other issues that stakeholders wish to raise.

The Joint Utilities recognize the urgency of jump-starting the market for EV adoption in New York State. There are many ongoing transportation electrification activities and others yet to be initiated by utilities and other stakeholders alike. The Joint Utilities seek to move forward as quickly as possible within the EVSE Proceeding to align with these other activities that are promoting transportation electrification.

It is clear to the Joint Utilities that the availability of DCFC equipment to support and accelerate transportation electrification is at the forefront of stakeholders’ concerns at this point in time. The Joint Utilities also recognize that the combination of traditional rates with demand charges and low utilization for DCFC equipment as a result of modest EV adoption makes for a difficult business case. However, the Joint Utilities find that business incentives that are time-bound for these customers will enable greater utilization and the transition to a profitable business.
III. Conclusion

The Joint Utilities look forward to further engagement with Staff and stakeholders in future discussions regarding the wide range of issues impacting the EV market in New York State.

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