

VIA ELECTRONIC FILING

February 28, 2023

Hon. Michelle L. Phillips
Secretary to the Commission
New York State Public Service Commission
Empire State Plaza
Agency Building 3
Albany, NY 12223-1350

*RE: Comments by ChargePoint regarding Case No. 22-02356: In the Matter of the EV
Technical Standards Working Group.*

Dear Secretary Philips,

Attached for electronic filing in the above-referenced matter, please find comments by ChargePoint, Inc. regarding Joint Utilities' proposal for a method to test the accuracy of managed charging-enabling technologies.

Respectfully,

/s/ Matthew Deal
Matthew Deal
Manager, Public Policy
ChargePoint

Comments by ChargePoint

Case No. 22-02356

Background

On January 10, 2023, Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., New York State Electric & Gas Corporation, Niagara Mohawk Power Corporation d/b/a National Grid, Orange and Rockland Utilities, Inc., and Rochester Gas and Electric Corporation (collectively the “Joint Utilities” or “JU”) submitted a proposal to assess the accuracy of managed charging-enabling technologies, including electric vehicle supply equipment (EVSE) and electric vehicle (EV) telematics.¹ The JU’s filing is a response to a directive within the Public Service Commission’s (“Commission”) Order Approving Managed Charging Programs.² The testing proposal was discussed at two meetings of the Technical Solutions Working Group (“TSWG”) on December 9th, 2022, and February 15th, 2023. ChargePoint, Inc. (“ChargePoint”) appreciates the opportunity to offer comments on the proposal.

About ChargePoint

ChargePoint is a world-leading EV charging network, providing scalable solutions for every charging scenario from home and multifamily to workplace, parking, hospitality, retail, and transport fleets of all types. ChargePoint’s cloud subscription platform and software-defined charging hardware is designed to enable businesses to support drivers, add the latest software features and expand fleet needs with minimal disruption to overall business. ChargePoint’s hardware offerings include Level 2 (L2) and DC fast charging (DCFC) products, and ChargePoint provides a range of options across those charging levels for specific use cases including light duty, medium duty, and transit fleets, multi-unit dwellings, residential (multi-family and single family), destination, workplace, and more.

ChargePoint’s software and cloud services enable EV charging station site hosts to manage charging onsite with features like Waitlist, access control, charging analytics, and real-time availability. With modular design to help minimize downtime and make maintenance and

¹ Joint Utilities’ Proposal For A Method To Test The Accuracy Of Managed Charging-Enabling Technologies, (“testing proposal” or “proposal”).

² Case 18-E-0138, *Proceeding on Motion of the Commission Regarding Electric Vehicle Supply Equipment and Infrastructure* (EV Proceeding), Order Approving Managed Charging Programs with Modifications (issued July 14, 2022) (“Managed Charging Order”).

Comments by ChargePoint

Case No. 22-02356

repair more seamless, all products are UL-listed and CE (EU) certified, and Level 2 solutions are ENERGY STAR® certified.

Introduction and summary of position

ChargePoint generally supports the JU's proposal to study the accuracy of managed charging-enabling technologies. Managed charging-enabling technologies, specifically networked Level 2 EV chargers, may bring a myriad of benefits to ratepayers in New York, including reduced cost barriers to installation of EVSE at homes and businesses, expanded access to EV rate options and load management strategies that can reduce costs to customers and enable vehicle-grid integration, and increased cost efficiency of EV charging deployment by utilizing the embedded metering and networking capabilities of EVSE to their full potential. These efforts will ultimately help enable widespread adoption of electric vehicles, vehicle-grid integration, and subsequent benefits to the grid and the environment.

The objective of the JU's effort is rightfully focused to assess the strengths and limitations of each tested technology to inform future utility program design and metering approaches, rather than to establish New York-specific accuracy standards for submetering or managed charging. The JU's proposal identifies several implementation issues that must be addressed to accurately assess the accuracy and capabilities of both EVSE and vehicle telematics as managed charging enabling technologies. ChargePoint's position on these issues is summarized here:

- Testing procedure. EVSE metrology testing procedure should align with National Institute of Standards and Technology ("NIST") Handbook ("HB") 44. As relevant testing standards do not yet exist for accuracy testing of EV telematics, a transparent testing procedure should be designed by a third-party with industry input.
- Testing Administrator. The testing administrator(s) must both be familiar with NIST HB 44 and must be capable of developing a testing procedure for telematics. A hired third-party, the New York State Department of Weights & Measures, or combination thereof would be appropriate to provide the required experience.

Comments by ChargePoint

Case No. 22-02356

- Laboratory testing. ChargePoint agrees with the JU's recommendation to focus data collection on laboratory testing of EVSE and telematics metrology.
- AC and DC use cases. It is not necessary to duplicate testing of AC managed charging for commercial use cases. However, it would be appropriate to conduct metrology accuracy tests of commercial DCFC, with greater direction from Department of Public Services (DPS) Staff.
- Data quality and usability. The JU's final compliance report should include their experiences with data collection from the implementation of the managed charging program.

As an initial matter, the JU's proposal recommends formal outreach to collect existing testing and accuracy related information by May 31, 2023. ChargePoint welcomes the opportunity to work collaboratively with the JU to share our insights into the embedded meter capabilities of EVSE.

The JU's proposal rightfully recognizes existing EVSE accuracy-testing protocols and must utilize them to deliver meaningful results.

The testing proposal acknowledges that accuracy-testing protocols for commercial EVSE are relatively well-established compared to protocols for EV telematics or for residential EVSE. Testing protocols that apply to commercial AC products should guide the evaluation of residential AC products. Therefore, the JU's study should adopt standardized evaluation of EVSE models along the lines of the metrology compliance requirements for Section 3.40 of the National Institute of Standards and Technology ("NIST") Handbook ("HB") 44.

NIST HB 44 is the industry standard for EVSE metering accuracy. NIST HB 44 was developed by expert EVSE technology developers to reflect the specific characteristics of EVSE technology and includes EVSE-specific considerations for submetering accuracy and testing, including specification of where to locate the metering point for third-party testing and elimination of irrelevant accuracy tests such as those at unrealistically low power factors. As the JU notes in its proposal, NIST HB 44 was permanently codified as of January 1, 2023.

Considering the varying levels of standardized testing specifications between EVSE and EV telematics, the testing proposal must completely align with established testing procedures where they exist and support the design of new testing procedures where they do not. The JU's proposal provides a good framework but lacks critical details, and it is important to specify exactly which tests are to be conducted, how they are to be conducted, and how the results should be reported, as faulty and non-transparent test procedures can undermine the objectives of this study.

The testing procedure for telematics will need to be developed, and it must be done transparently with input from the TSWG. Phase 2 of California's statewide submetering pilot provides an illuminating example of the importance of transparent testing procedures.³ The pilot's study, which was conducted in 2019 and included both field and laboratory accuracy testing of EVSE, did not utilize a testing setup consistent with NIST HB 44. The subsequent back-and-forth over testing specifications led to disputes regarding the interpretation of results that complicated the development of a submetering protocol. As a primary purpose of the JU's study is to understand the metering accuracy of EVSE and telematics, it is important that the results provide meaningful data.

Likewise, if the TSWG considers core issues to managed charging program implementation beyond the scope of the meter accuracy testing proposal, such as what device standards should be in place and how to define the accepted or preferred ways to meter or submeter EV charging loads, these should also fully align with NIST HB 44.

The testing administrator to conduct meter accuracy testing should be a third-party and must be familiar with NIST HB 44 testing protocols.

One of the items that need clarification regarding the implementation of the testing proposal is identification of a testing administrator. According to the JU's proposal, the testing

³ California Statewide PEV Submetering Pilot – Phase 2 Report at 54, submitted to the California Public Utilities Commission on April 26, 2019 and available at: <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M325/K033/325033739.PDF>

Comments by ChargePoint

Case No. 22-02356

administrator could be one of more of the Joint Utilities, a state agency, one or more members of the TSWG or a hired third-party.

To successfully execute the study, the testing administrator must both be familiar with NIST HB 44 for EVSE testing procedure and be prepared to support the development of a testing procedure for telematics with input from stakeholders. Based on these needs, the testing administrator should be a hired third-party administrator, a state agency with relevant experience, such as the New York State Department of Weights & Measures, or both.

As NIST HB 44 has been permanently codified as of January 1, 2023, NYS Weights & Measures may already have experience regarding the testing procedure for AC EVSE that would be valuable to the study and may be able to contribute a suitable laboratory location to conduct testing. However, the agency may not be equipped to develop new testing procedures, as the telematics component of the study requires, so a hired third-party should provide the needed experience. Although a third-party implementor would incur additional costs, they would also add legitimacy to the outcome of the testing procedure and more meaningfully advance the Commission's goal of moving the industry forward on standards development.⁴

ChargePoint supports the JU's suggestion to test managed charging enabling technologies in a laboratory setting.

The JU's proposal suggests a testing method that captures and compares data from a utility meter, EVSE, and EV in a laboratory setting to assess the meter accuracy of the managed charging enabling technologies. ChargePoint supports the JU's suggestion to focus on laboratory testing only. Field testing of customer equipment introduces additional complexity due to logistics regarding data storage, connectivity, and integration with utility billing systems, which, as the JU notes, is not within the scope of the Commission's Order.⁵ Meter accuracy and data transfer are separate topics and should be assessed separately.

⁴ "...the Commission is interested in leading the development of EV electric consumption measuring technology, including onboard telematics and L2 chargers," per the Managed Charging Order at 26.

⁵ Testing Proposal at 2.

Comments by ChargePoint

Case No. 22-02356

Nonetheless, seamless data transfer between the utility and the managed charging enabling technology is vital to the real-world implementation of managed charging programs. There must be a scalable path forward to enabling the efficient and reliable communication of EV charging data for customer billing or demand response incentives. Successful managed charging programs depend on the use of consistent and automated data transfer formats and protocols. Such protocols should be consistent across utility service territories and across the EVSE industry to minimize program costs and administrative complexity.

For example, automation would minimize the resources needed for data transfer. However, the JU may not be willing to make investments in developing application programming interfaces (APIs) to enable automated data sharing until they gain broader experience with implementing managed charging programs. To inform future discussions, it is appropriate for each utility to file their documented experiences regarding data quality and data accuracy from the managed charging programs in their comprehensive report on the submetering data collection exercise due by October 1, 2024.⁶ ChargePoint looks forward to providing more input on the issue of data quality after the foundational question of submetering accuracy is addressed.

It may be appropriate to conduct commercial DC testing with greater guidance from DPS Staff, but commercial AC testing is not necessary.

The directive to the JU in the Managed Charging Order is to study submetering accuracy of technologies that enable participation in residential managed charging programs. NIST HB 44 is the standard for commercial AC products, not residential AC products, so the proposed meter accuracy study will provide information where there is a gap in the existing standard. Subsequently, the JU's testing proposal is limited to testing residential charging equipment and vehicle telematics. ChargePoint agrees that focusing the data collection exercise on residential EVSE products aligns with the Commission's directive in the Managed Charging Order.

The JU's proposal notes that the testing of non-residential charging use cases may warrant further discussion and requests greater direction from DPS Staff and stakeholders.⁷ Separate

⁶ Testing proposal at 3.

⁷ Testing proposal at 15.

Comments by ChargePoint

Case No. 22-02356

testing for commercial AC chargers is both arbitrary and unnecessary, as NIST HB 44 has already established accuracy standards of 1% accuracy tolerance and 2% maintenance tolerance for commercial Level 2 chargers. It is for this reason that the California Public Utilities Commission adopted NIST HB 44 regulations for the purposes of establishing the submetering protocol for all AC use cases.⁸ The testing proposal need not conduct redundant testing for commercial AC use cases.

Stakeholders at the last two TSWG meetings expressed interest in expanding the scope of the study to test commercial DCFC in anticipation of the upcoming commercial managed charging programs.⁹ ChargePoint agrees that it may be appropriate for the JU to investigate the meter accuracy of EV chargers and telematics in the context of DCFC sessions. DC products require a different testing procedure and specialized testing equipment compared to what is currently used for AC products. As the additional testing procedure for DCFC would be substantially expand the scope of work for the study proposal and extend beyond the Commission's direction in the Managed Charging Order, it should be conducted with more guidance and direction from DPS Staff.

The full cost and benefits of all possible submetering alternatives should be reported.

One of the key outcomes of the testing proposal is to assess the strengths and limitations of each tested technology to inform future utility program design and metering approaches. The JU identifies utility-owned meters, including traditional, smart, and submeters, as one of several alternative pathways for EV charging data to reach the utility for billing purposes. The JU's testing proposal further notes that, while out of scope for this proceeding, it is important to "understand the costs and constraints of implementing an EVSE and EV telematics submetering protocol, including the utility costs associated with back-office billing integrations and customer costs."¹⁰

⁸ California Public Utilities Commission, Decision 22-08-024 in Rulemaking 18-12-006, Decision Adopting Plug-In Electric Vehicle Submetering Protocol and Electric Vehicle Supply Equipment Communication Protocols, issued on August 5, 2022.

⁹ The Commission ordered for the JU to establish commercial managed charging programs in its Order in Case 22-E-0236, issued on January 19, 2023.

¹⁰ Testing proposal at 9.

Comments by ChargePoint

Case No. 22-02356

ChargePoint agrees that the full costs and benefits of each alternative should be considered in future program design and notes that there are additional costs associated with utility-owned meter pathways that were not identified in the JU's proposal. It may be helpful for the final compliance report filed by the JU to include cost evaluations to take all costs and benefits of each alternative metering technology into account. For example, in a report on phase two of California's statewide submetering pilot, a cost evaluation found that it is at least \$350 less expensive for a customer to install a charging station with a submeter than it is to install a separate utility-grade meter.¹¹ A cost evaluation of each alternative would be helpful alongside accuracy information to identify appropriate use cases for each technology in future programs in New York.

Conclusion

ChargePoint thanks the Joint Utilities and the Department of Public Services for the opportunity submit comments on the proposed accuracy testing protocol for managed charging-enabling technologies. We look forward to reviewing the list of equipment that will be tested in the coming weeks and contributing to the TSWG's ongoing work to enable New York to realize the full benefits of managed charging.

¹¹ California Statewide PEV Submetering Pilot – Phase 2 Report at 9, submitted to the California Public Utilities Commission on April 26, 2019 and available at: <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M325/K033/325033739.PDF>