NARUC Electric Vehicles State Working Group

AVAILABILITY OF HOSTING CAPACITY INFORMATION FOR EVSE NOVEMBER 28, 2023, 3:00 - 4:30 PM



EV SWG Chair

Commissioner Katherine Peretick, Michigan Public Service Commission

EV SWG Vice Chair

Commissioner Milt Doumit Washington Utilities and Transportation Commission

NARUC Staff

Danielle Sass Byrnett and Robert Bennett



Feel free to enter questions into chat at any time

| 3:00 PM | Welcome and Announcements – Commissioner Katherine Peretick Agenda review |
|---------|---|
| 3:05 PM | Sejal Shah, Joint Office of Energy and Transportation Kara Podkaminer, U.S. Department of Energy (DOE) |
| 3:20 PM | Alex Young, National Grid |
| 3:35 PM | Speaker Q&A |
| 3:55 PM | Danielle Sass Byrnett, NARUC |
| 4:00 PM | Peer Sharing Discussion |
| 4:30 PM | Adjourn |



Moderator: Commissioner Katherine Peretick, Michigan PSC

Guest Speakers

- Sejal Shah, Joint Office
- . Kara Podkaminer, DOE
- Alex Young, National Grid

Why are we discussing Hosting Capacity Maps in relation to EVs and EVSEs?

Accelerated Adoption of EVs

- Light Duty
- Private Commercial Fleets
- Transit Fleets

Funding for EVSEs

- Federal
- State
- Regional
- Electric Utilities

Examples of EVSE funding programs

Clean School Bus Program (U.S. EPA)

\$5 billion in support of electric school bus deployments



Low-No Emissions Grants Program for Transit (U.S. DOT)

\$5.6 billion in support of low- and no-emission transit bus deployments



Charging & Fueling Infrastructure Discretionary Grant Program (U.S. DOT)

\$2.5 billion in community and corridor grants for EV charging, as well as hydrogen, natural gas, and propane fueling infrastructure

National Electric Vehicle Infrastructure (NEVI) Formula Program (U.S. DOT)

\$5 billion for states to build a national electric vehicle (EV) charging network along corridors, including The Electric Vehicle Charger Reliability and Accessibility Accelerator, a **\$100 million** funding opportunity to repair and replace chargers

How do Hosting Capacity Maps relate to funding opportunities?

- 99% of NEVI state plans note a requirement for available electric capacity as part of the solicitation response
- Some state DOTs have obtained and included electric capacity information prior to releasing NEVI solicitation

- For each potential NEVI site, electric utilities will receive multiple service requests/questions
- Electric capacity information will have to be updated for every year of the five NEVI program years
- This is just one example

Coming Soon – DOE Website: Publicly Available Hosting Capacity

- Explains what hosting capacity maps are and how they can be used
- Provides stakeholders with link to publicly available hosting capacity maps



Benefits:

- Informs site selection (first level of assessment)
 - Doesn't replace need for early conversations with utilities
- Potential to reduce costs by leveraging existing capacity
- Levels the playing field by providing transparency

Room for Improvement:

- Advanced methods may be able
 - Reduce staff time necessary to updated/maintain
 - Better reflect real time conditions



System Data Portal Overview

nationalgrid

Evolution of the System Data Portal & Roadmap

The Joint Utilities (JU) of New York was established in response to the NYS Reforming the Energy Vision (REV) initiative in 2014. Since then, the utilities have worked together to advance state policy goals, respond to Public Service Commission proceedings, and collaborate with stakeholders with an emphasis on distribution-connected, small-scale energy resources.

This led to the creation of the System Data Portal and subsequent hosting capacity maps.

The JU helps to gain alignment among utility members and drive consistency of solutions and information presented.



Why Multiple Maps?

| National | Grid New Yor | k System Data Port | al | | | | | | | |
|--------------|-----------------|------------------------------|---------------------|--------------------------|----------------------|-----------|-----------------|-----------------|----------|-----|
| Introduction | Company Reports | Distribution Assets Overview | PV Hosting Capacity | EV Load-Serving Capacity | ESS Hosting Capacity | LSRV/VDER | DG Cost Sharing | CESIR Pass Fail | REST API | NWA |

- Each map is unique in its use case and tailored to a specific user base
 - PV Hosting Capacity Solar developers
 - ESS Hosting Capacity Energy Storage System developers
 - EV Load Serving Capacity Electric Vehicle charger installers
- Specific analysis criteria is applied to each map based on the technology (PV, ESS, EV)
 - PV Hosting Capacity Map data/results reflects expected operation of a PV site
 - ESS Hosting Capacity Map data/results reflect operation of ESS site (discharging or charging to/from grid)
 - EV Load Serving Capacity High level thermal capabilities of circuits
- Value/limitations of maps
 - Varying levels of granularity
 - PV&ESS Hosting Capacity maps Nodal level data (capacity per 3PH line)
 - EV Capacity map Circuit level data (capacity per circuit)

Benefits of Maps

External Benefits

- Better siting of DG facilities Higher success rates of DG interconnection
- Can function as a preliminary assessment of circuit's ability to host DER (distributed energy resource)
 - Give developers a general sense of magnitude for grid-side upgrades that may be necessary to connect
- Facilitate understanding of system and function as visual aid for interconnection application review meetings

Internal Benefits

- System data more easily accessible to other internal organizations
- Review system-wide data with respect to geographic location (circuit topology, DG on system, etc.)



System Data Portal Resource Needs

| Feeder Level Hosting Capaci | ty for PV |
|---|-------------|
| Feeder | 36_31_37253 |
| Substation/Bank Name | SYCAWAY TB |
| Feeder Voltage (kV) | 13.20 |
| Feeder Maximum Hosting Capacity (MW) | 0.00 |
| Feeder Minimum Hosting Capacity (MW) | 0.00 |
| Anti-Islanding Hosting Capacity Limit (MW) | 0.59 |
| Feeder DG Connected (MW) | 0.35 |
| Feeder DG in Queue (MW) | 10.96 |
| Feeder DG Connected Since Last HCA Refresh Date (MW) | 0.02 |
| Feeder DG Connected/In | 10/30/2023 |
| Zoom to | |

Maps are updated at least annually

- Annual update includes a complete map/data refresh
 - Update date/time specific to each map based on Order requirements
- Some metrics are updated more frequently
 - DG connected & In Queue data Monthly
 - Circuits with > 500kW of new DG Six-months
- Annual updates are most time intensive, requires several resources a few months to perform
- Resource needs for other updates depend on frequency and complexity
- IT/Software Resources
 - Various software licensing costs
 - Electric network modeling & power flow software (i.e. CYME, OpenDSS, etc.)
 - EPRI Distribution Resource Integration and Value Estimation (DRIVE) software
 - ESRI ArcGIS Online platform used to host Portal
 - Scripting/automation expertise is useful to accelerate data gathering/manipulation
 - Several servers utilized to host Portal

Future of the System Data Portal

- Maps currently available on System Data Portal were developed based on a specific set of use cases to meet stakeholder needs.
 - The Joint Utilities host various stakeholder sessions each year to discuss upcoming changes to the map and gain feedback from users on a development roadmap.
 - Many recent discussions have focused on the maps reflecting different DER operational scenarios (i.e. ESS schedules, flexible connections, etc.)
 - Use cases can be specific to each map since user base is different.
 - Maps are in various stages of maturity & granularity.
 - Most robust/granular: PV Hosting Capacity map
 - Most high level: EV Load Serving Capacity map
- Impact of technologies like AMI & ADMS under exploration
 - May improve system model accuracy
- Near-term developments
 - EV Load Serving Capacity map to be retired and replaced with Electrification Map that will show capacity in both winter and summer.

PV Hosting Capacity Map





EV Load Serving Capacity Map

Additional Resources / Questions



LEARN HOW THE JOINT UTILITIES ARE SUPPORTING THE CLEAN ENERGY TRANSITION

https://jointutilitiesofny.org/



Moderator: Commissioner Katherine Peretick, Michigan PSC Guest Speaker: Alex Young, National Grid

NARUC Grid Data Sharing Framework

Danielle Sass Byrnett, NARUC Center for Partnerships & Innovation

www.naruc.org/cpi-1/energy-distribution/derintegration-compensation/grid-data-sharing/

Public Webinar: December 6, 2-3pm ET / 11am – 12pm PT

Register: https://us02web.zoom.us/webinar/register/WN_WrXQ en0OSQmvYOTSzB8r9w#/registration



Peer Sharing

• Has the Commission in your state required hosting capacity information to be shared publicly? Or,

has your Commission or state expressly not allowed hosting capacity information to be shared publicly?

 If your Commission/state has discussed whether or not to share hosting capacity information, what concerns or issues are being raised? All working group members are invited to share about their state

Transportation Electrification Planning Workshop

Thank you to those who attended the November 15th, 2023, TE Planning Workshop. The materials have been shared via email for those who could not attend. Please contact Robert Bennett if you did not receive them.

No meeting in December!

Next meeting on January 30th, 3:00-4:30 pm via Zoom

WWW.NARUC.ORG/CPI-1/ENERGY-CUSTOMERS/ELECTRIC-VEHICLES/