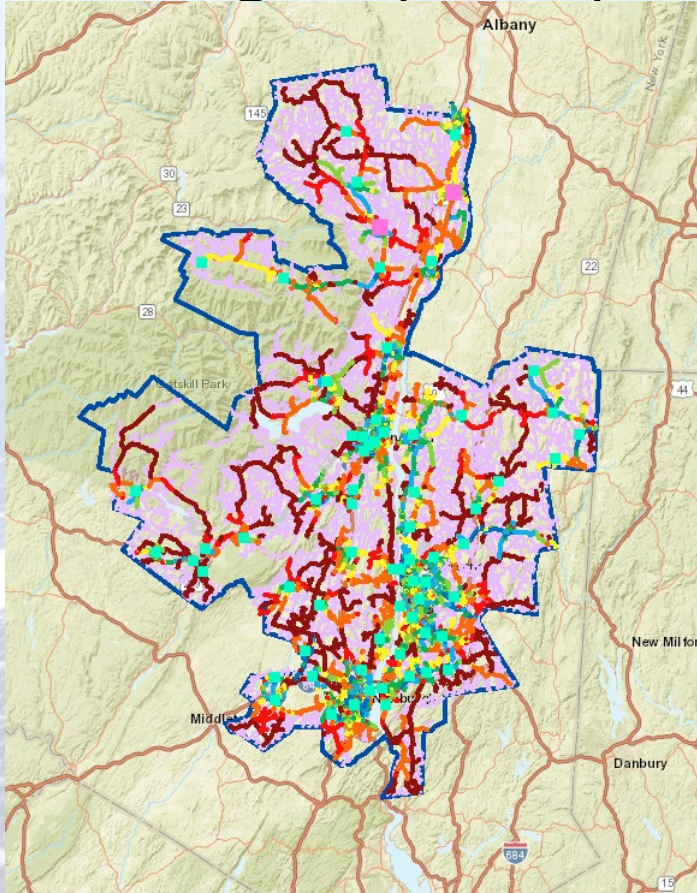


Central Hudson Hosting Capacity Maps

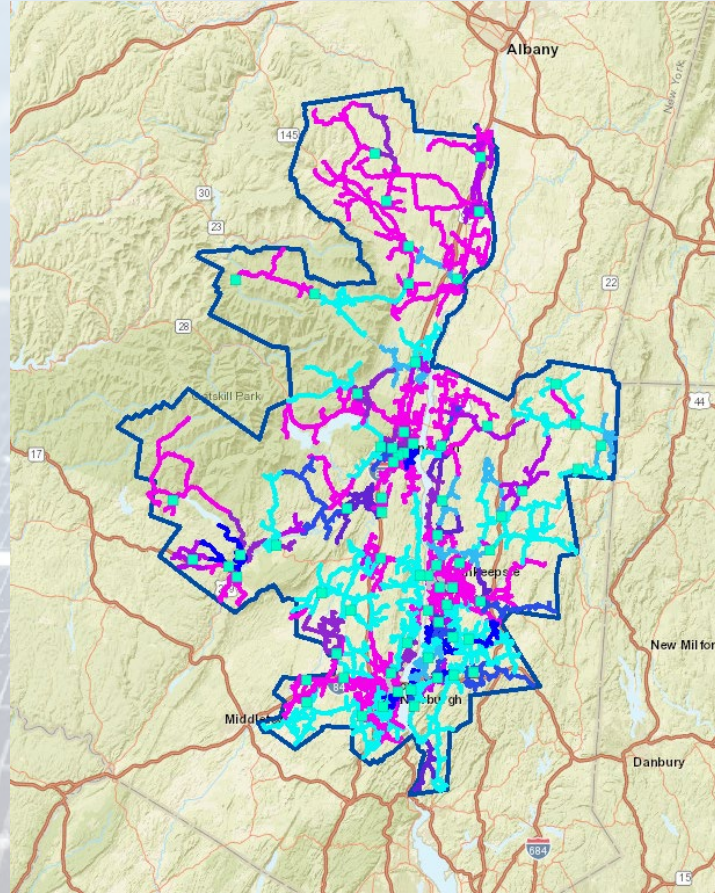
Dylan Piccorelli & John Scalo

Central Hudson –Distribution Planning & Interconnections

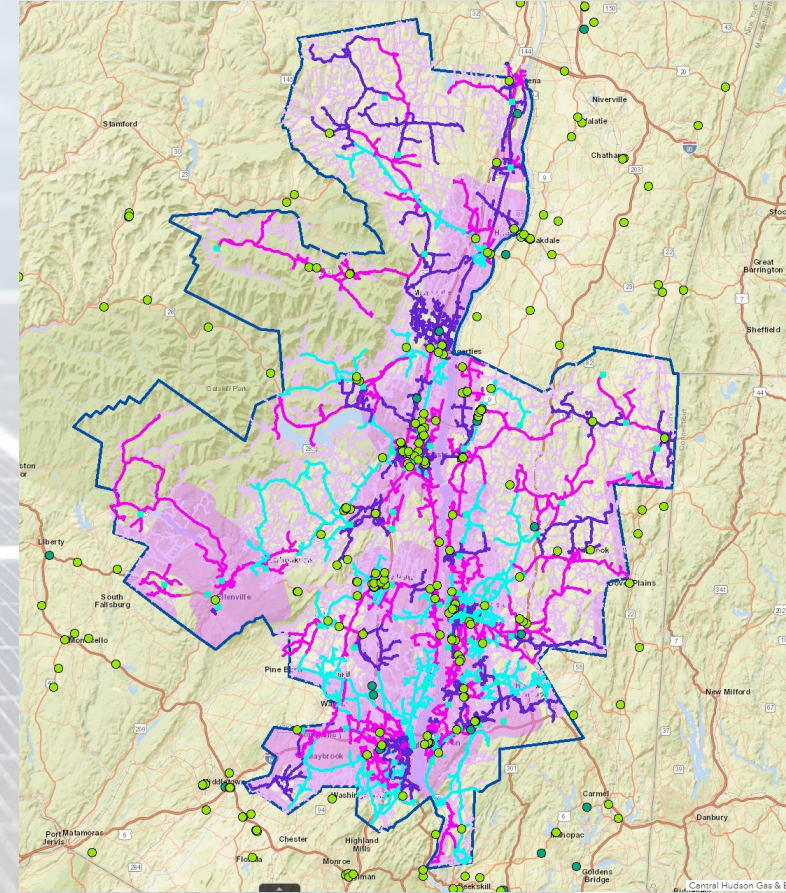
Hosting Capacity Maps



Photovoltaic Map



Energy Storage Map



Electrification Map

<https://www.cenhud.com/en/my-energy/distributed-generation/>

<https://www.cenhud.com/en/my-energy/distributed-generation/hosting-capacity-maps/>

NEW

What Factors Impact Hosting Capacity?

Circuit Loading



Existing DG



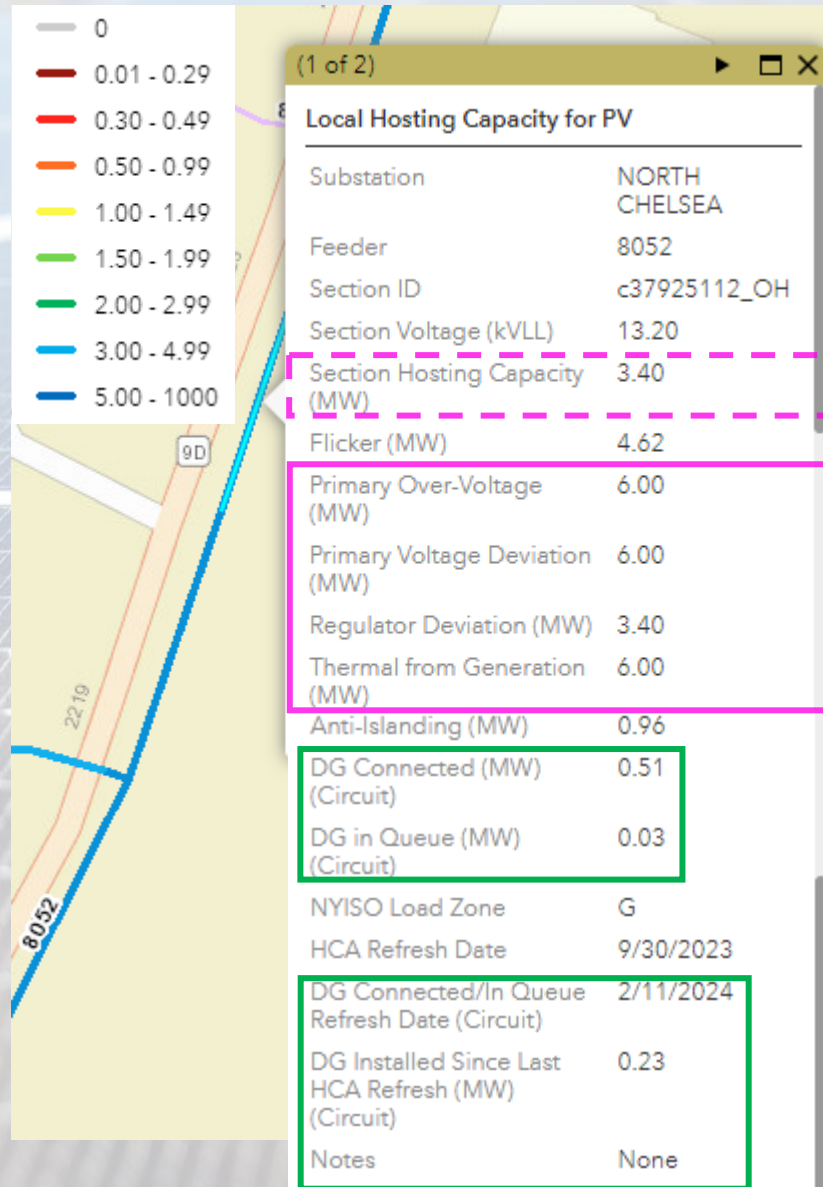
Distribution
Equipment



Conductor



PV Hosting Capacity Map Pop-Ups Explained



Section Hosting Capacity is based on the 4 criteria identified in **Pink**

Green indicates fields updated monthly with queue data.

All other fields are updated annually/semi-annually with each hosting capacity analysis.

ESS Hosting Capacity Map Pop-Ups

(1 of 2)

3 Phase Charging (MW)	
Substation	INWOOD AVE
Feeder	6062
Section ID	c3264451_1_OH
Base Voltage (kVLL)	13.20
Section Hosting Capacity (MW)	2.10
Primary Under Voltage (MW)	6.00
Primary Voltage Deviation (MW)	6.00
Regulator Deviation (MW)	6.00
Thermal from Load (MW)	2.10
DG Connected (MW)	0.16
DG In-Queue (MW)	0.00
NYISO Load Zone	G
Hosting Capacity Refresh Date	9/30/2023
DG Connected / In-Queue Refresh Date	2/11/2024
DG Installed Since Last HCA Refresh (MW)	0.10

[Zoom to](#)

Charging Layer

(1 of 2)

3 Phase Discharging (MW)	
Substation	INWOOD AVE
Feeder	6062
Section ID	c3264451_1_OH
Base Voltage (kVLL)	13.20
Section Hosting Capacity Generation (MW)	2.30
Flicker (MW)	6.00
Primary Over-Voltage (MW)	6.00
Primary Voltage Deviation (MW)	6.00
Primary Regulator Deviation (MW)	6.00
Thermal from Generation (MW)	2.30
Anti-Islanding Limit Generation (MW)	0.41
DG Connected (MW)	0.16
DG In-Queue (MW)	0.00
NYISO Load Zone	G
Hosting Capacity Refresh Date	9/30/2023
DG Connected/In-Queue Refresh Date	2/11/2024
DG Installed Since Last HCA Refresh (MW)	0.10
Notes	None

Discharging Layer

Legend

Substations

Substations

Energy Storage Hosting Capacity

3 Phase Charging (MW)

- Less than 0.30
- 0.30 - 0.49
- 0.50 - 0.99
- 1.00 - 1.49
- 1.50 - 1.99
- 2.00 - 2.99
- 3.00 - 4.99
- 5.00 - 10.00
- NULL

3 Phase Discharging (MW)

- 0.050000 - 0.299999
- 0.300000 - 0.499999
- 0.500000 - 0.999999
- 1.000000 - 1.499999
- 1.500000 - 1.999999
- 2.000000 - 2.999999
- 3.000000 - 4.999999
- 5.000000 - 10.000000
- NULL

1 & 2 Phase Lines

5kV Class Lines

Electrification Hosting Capacity Map Pop-Ups

(1 of 2)

Summer 3 Phase	
Feeder	6044
Substation/Bank Name	SPACKENKILL
Operating Voltage (kV)	13.20
Summer Peak Load (MVA)	4.05
Feeder Summer Rating (MVA)	6.00
Substation/Bank Summer Rating (MVA)	47.26
Summer Load Capacity Headroom (MW)	1.95
Refresh Date	1/15/2024

[Zoom to](#) ...

Unlike the PV & ESS maps, values are per circuit not per segment

(2 of 2)

Winter 3 Phase	
Feeder	6044
Substation/Bank Name	SPACKENKILL
Operating Voltage (kV)	13.20
Winter Peak Load (MVA)	2.62
Feeder Winter Rating (MVA)	6.00
Substation/Bank Winter Rating (MVA)	47.26
Winter Load Capacity Headroom (MW)	3.38
Refresh Date	1/15/2024

[Zoom to](#) ...

Note: "Operating Voltage (kV)" of the substation transformer does not necessarily reflect the voltage of the selected line segment.

Hosting Capacity Substation Pop-Ups

(3 of 4)

Substation Level System Data: NORTH CHELSEA #1

Substation/Bank Installed DG (MW)	2.84
Substation/Bank Queued DG (MW)	10.03
Transmission Node PTID	355582
Substation/Bank Total DG (MW)	12.87
2022 Substation/Bank Peak (MW)	10.35
Substation/Bank Thermal Capacity (MVA)	38.64
Estimated 3VO Protection Threshold (MVA)	N/A
Substation Backfeed Protection	Yes
DG Connected/In Queue Refresh Date	2/11/2024
HCA Refresh Date	9/30/2023

[Zoom to](#) ...

Green indicates fields updated monthly with queue data.

Example of a Strong PV Feeder

When looking for a “strong” feeder, look for the following:

1. Gradual decrease in hosting capacity as you move away from the substation
2. High feeder head hosting capacity
3. Minimum hosting capacity > 0.5 MW
4. Section hosting capacity provides an estimate of the DER connection that could be feasible at the location
5. Recommend >100 kW apply for a 3-phase interconnection

Local Hosting Capacity for PV	
Substation	SPACKENKILL
Feeder	6041
Section ID	c226631026_2_OH
Section Voltage (kVLL)	13.20
Section Hosting Capacity (MW)	2.00
Flicker (MW)	4.46
Primary Over-Voltage (MW)	5.50
Primary Voltage Deviation (MW)	5.10
Regulator Deviation (MW)	2.00
Thermal from Generation (MW)	6.00
Anti-Islanding (MW)	4.91
DG Connected (MW) (Circuit)	0.03
DG in Queue (MW) (Circuit)	0.00
NYISO Load Zone	G
HCA Refresh Date	9/30/2023
DG Connected/In Queue Refresh Date (Circuit)	2/11/2024
DG Installed Since Last HCA Refresh (MW) (Circuit)	0.02
Notes	Fault Current Limitation
...	

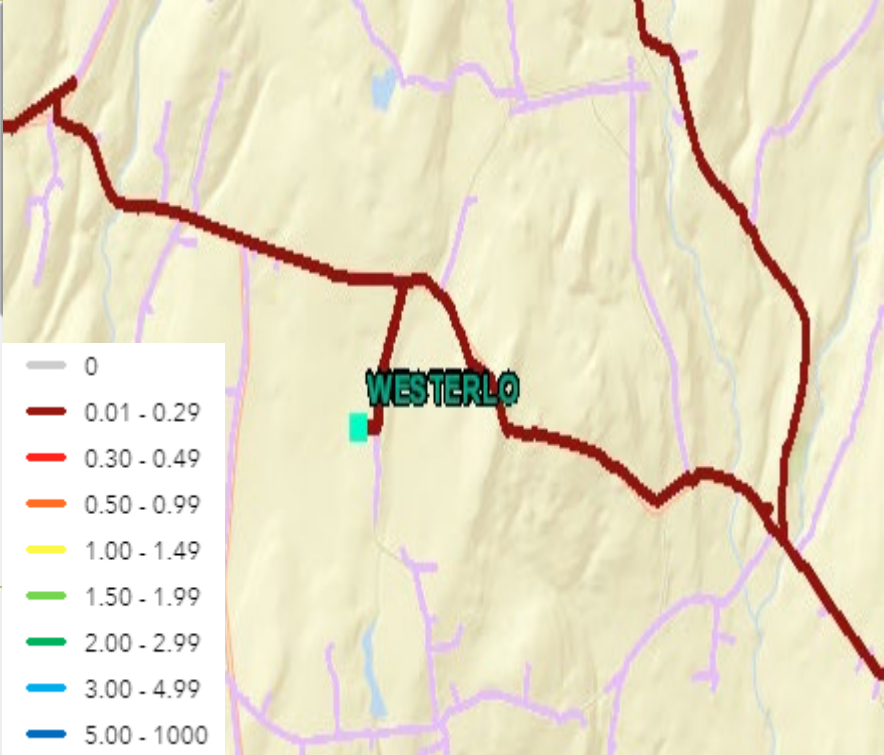


Example of a Weak PV Feeder

A "weak" feeder will have the following:

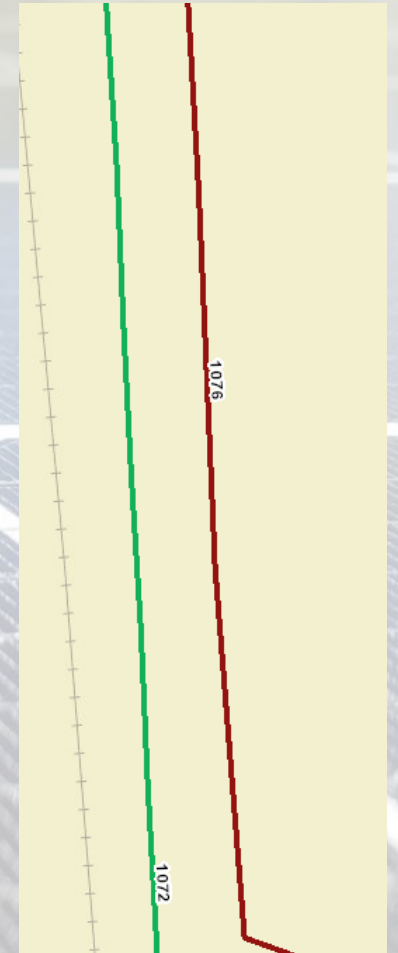
- 1. Rapid decrease in available hosting capacity on mainline
- 2. Low feeder head hosting capacity
- 3. Attempting to interconnect a large DER system to a circuit such as this one will likely occur in high upgrade costs and possibly some downsizing (or new feeder)

Local Hosting Capacity for PV	
Substation	WESTERLO
Feeder	1092
Section ID	c4675434_4_OH
Section Voltage (kVLL)	13.20
Section Hosting Capacity (MW)	0.10
Flicker (MW)	3.85
Primary Over-Voltage (MW)	3.80
Primary Voltage Deviation (MW)	0.10
Regulator Deviation (MW)	0.10
Thermal from Generation (MW)	3.00
Anti-Islanding (MW)	0.00
DG Connected (MW) (Circuit)	4.91
DG in Queue (MW) (Circuit)	0.07
NYISO Load Zone	G
HCA Refresh Date	9/30/2023
DG Connected/In Queue Refresh Date (Circuit)	2/11/2024
DG Installed Since Last HCA Refresh (MW) (Circuit)	0.30



Final Tips - Navigating the Hosting Capacity Map

1. Always be attentive on the queued-ahead DER and DER interconnected since the most recent refresh
2. For all circuits, especially weaker ones, the further you are from the substation the higher risk there is for expensive upgrade costs
3. Any significant and immediate drop in hosting capacity may identify the location of a stepdown transformer. You can check local voltage within the pop-up boxes to confirm.
4. If the location of a proposed system is adjacent to two circuits, you can use the hosting capacity map to see which circuit will give you the best chance of avoiding high upgrade costs.
5. POI determines substation and circuit interconnection



Links

[Central Hudson Links](#)

[PV Methodology & Usage](#)

[ESS Methodology & Usage](#)

[Distributed Generation Website](#)

[Hosting Capacity Maps](#)

[Joint Utilities of NY Links](#)

[Joint Utilities Hosting Capacity](#)

[Joint Utilities Stakeholder Session 5-18-2022](#)

[Joint Utilities Stakeholder Session 11-2-2022](#)

Thank You

Support: DG@cenhud.com