

# Interconnections: Current Status & What's New

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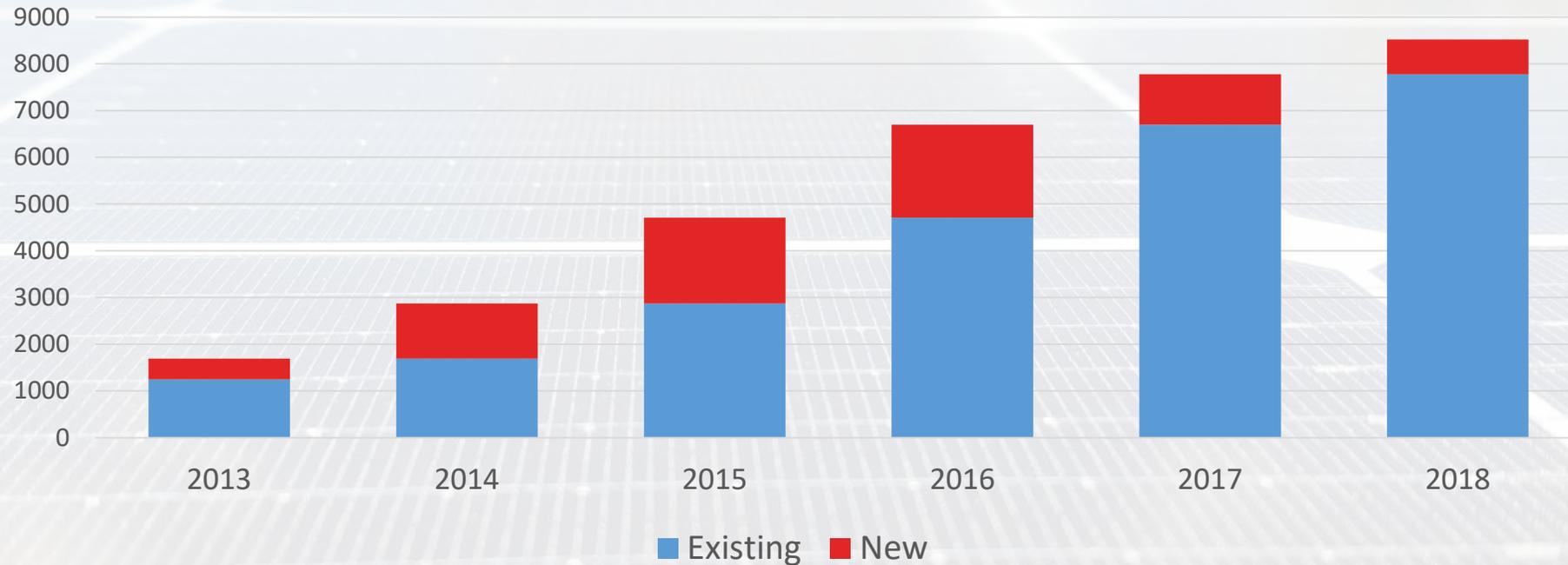
**Central Hudson Electric Distribution Planning**

# Topics

- Current Status
  - Net-Metered PV Growth
  - Energy Storage Systems
  - Current VDER Allocations
  - NYISO Projects
- What's New
  - IOAP Updates
  - Collaborative Working Group Activities
  - Central Hudson Interconnection Guidelines
  - Hosting Capacity Update

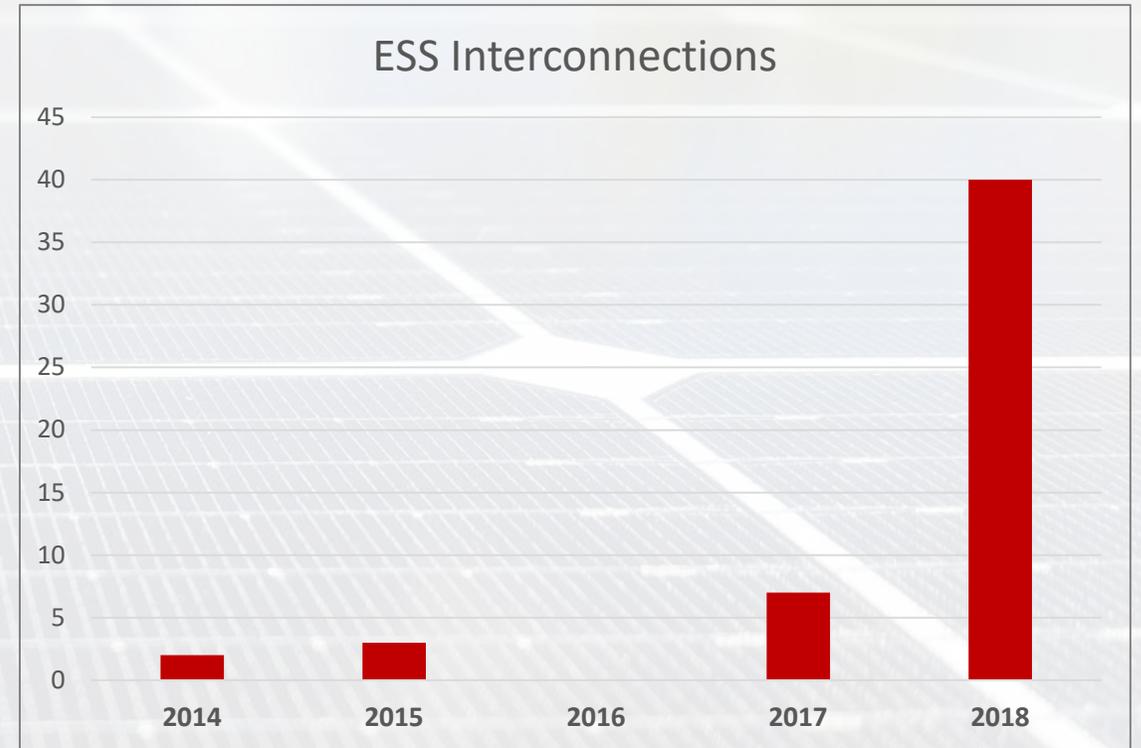
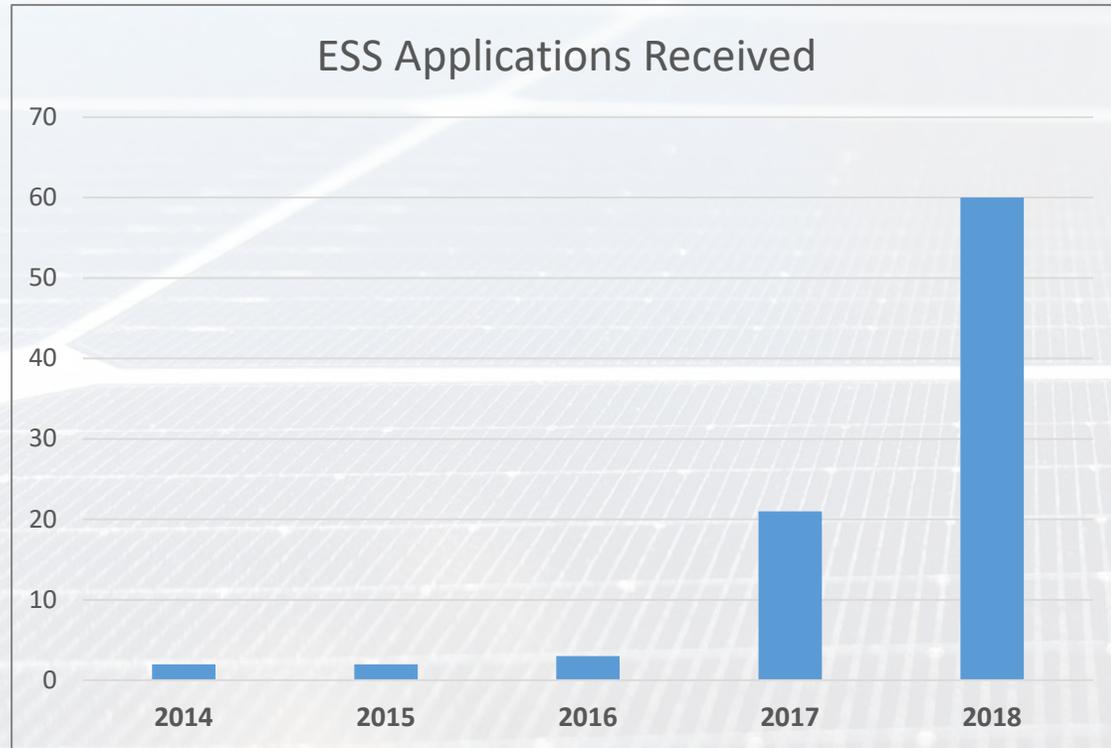
# Net-Metered PV Growth

## Cumulative PV Systems Installed by Year

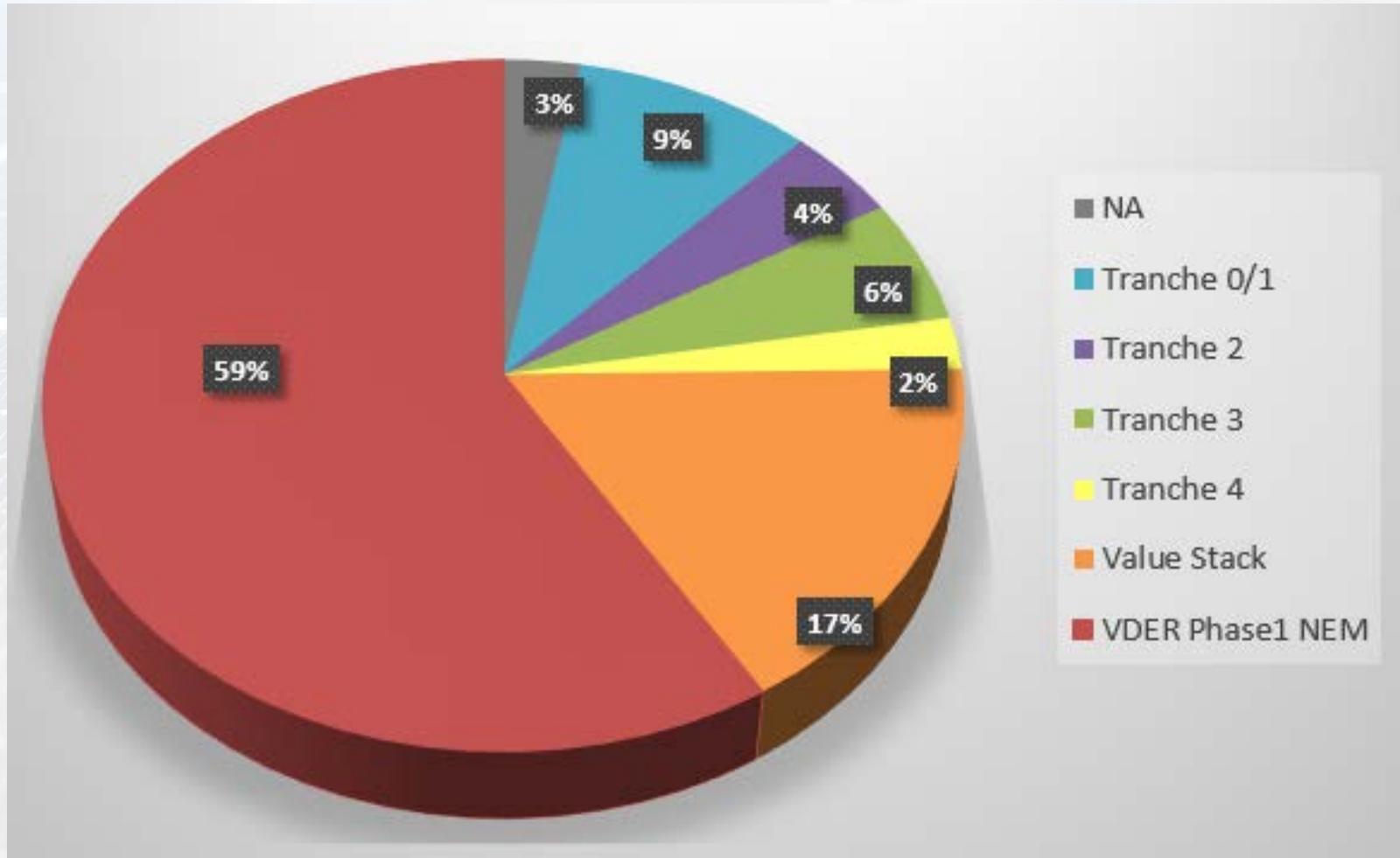


As of 12/31/18	# of Systems	MW's
Interconnected	8,500	86
In Queue	310	182

# Energy Storage



# Value Type of Proposed DER Systems

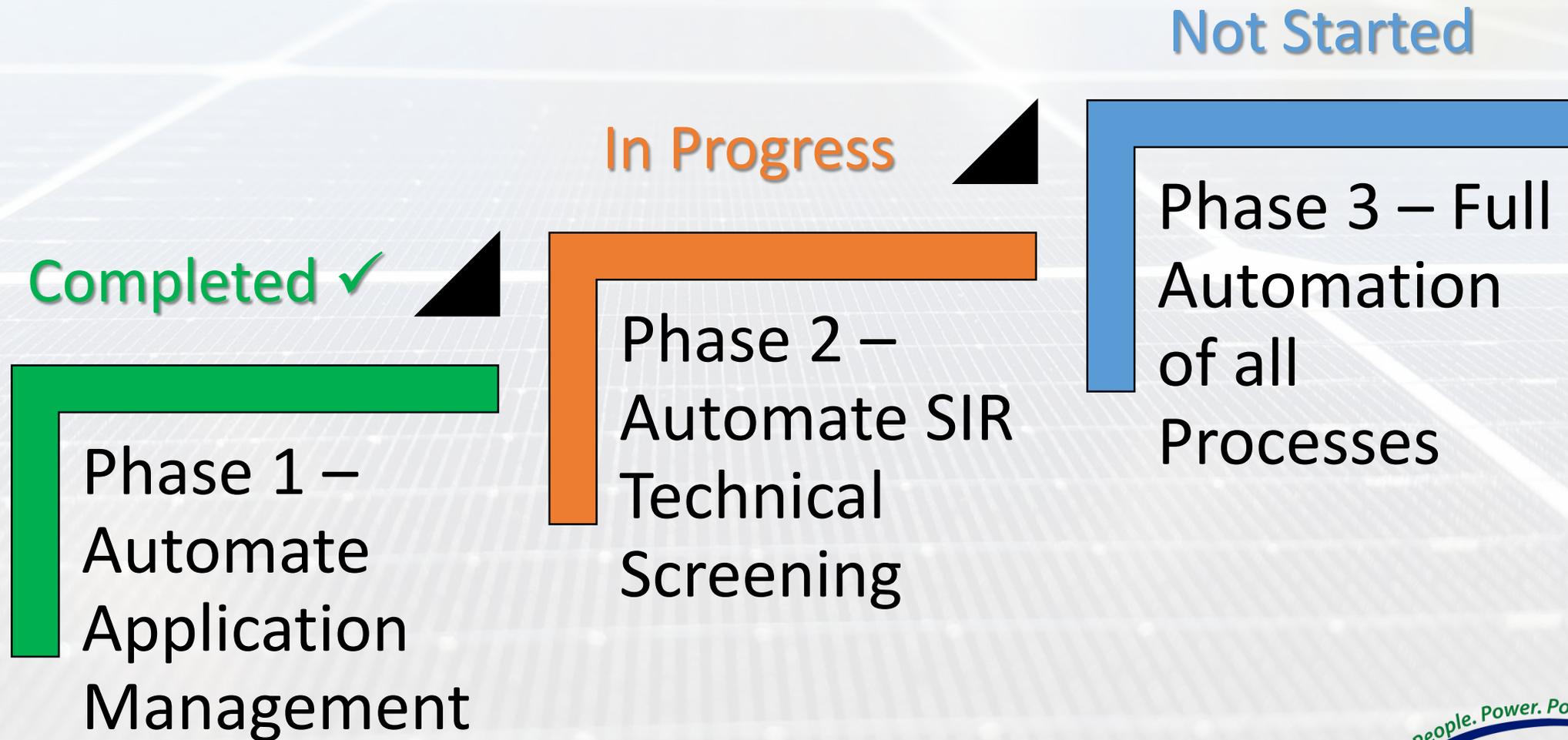


# NYISO Projects

- Cairo (1) ESS – 20 MW
- Coeymans (1) PV – 20 MW
- Cocksackie (5) PV – 170 MW total
- Crayville (1) PV – 60 MW
- Montgomery (1) Combined Cycle & (1) ESS – 220 MW total
- New Baltimore (1) PV – 20 MW
- Saugerties (1) PV – 20 MW
- Wallkill (1) PV – 20 MW
- Warwick (1) PV – 20 MW



# Interconnection Online Application Portal



# IOAP Phase 2 Requirements

## KEY FUNCTIONALITIES



- Improved public facing experience in the application process
- Improved efficiency for interfacing with internal processes
- Link into different utility systems
- Enable data transfer in common formats to streamline process and reduce error
- Implement the ability to calculate SIR technical screens A-F based on utility data and recognize as pass or fail
- Push applications to engineer if fails any SIR screen or if data does not exist to complete SIR screen

# Major IOAP Updates

- Updated Preliminary & Supplemental Screens
- Moved Contract Execution for project >50kW to 25% payment step
- Added Moratorium Attestation Form
- Added DER Registration Compliance Affirmation Form
  - Required for all applications received on or after 7/2/18
- Added DER Compensation Form
  - For Value Stack applicants to make compensation selections
  - RNM & CDG applicants can submit their allocations forms here
- Incorporated Protection & Control Review
- Incorporated Combined Project Studies
- Added additional Energy Storage System fields

# FormSense

The screenshot displays the Central Hudson Gas & Electric Portal interface. At the top left is the Central Hudson logo with the tagline "People. Power. Possibilities." and "A FORTIS COMPANY". At the top right is the PowerClerk logo and a user greeting: "Welcome, Diana Barton | Log Out". A dark blue navigation bar contains the following items: HOME, PROGRAM DESIGN (with a dropdown arrow), ADMIN (with a dropdown arrow), SETTINGS (with a dropdown arrow), and SUPPORT. Below the navigation bar, the page title is "CENTRAL HUDSON GAS & ELECTRIC PORTAL". A main content area on the left lists "New Interconnection Application for Projects 50 kV" and "New Interconnection Application for Projects greater than 50 kV". Below this are several filter buttons: "All Projects", "Pre-App Review", "App Review", "Incomplete CESIR Package", "Incomplete Final Review", "Construction", "Interconnected", "Unsubmitted", "Under Review", "On Hold", "Supp. Review", "CESIR Package", and "CESIR Study". A "SETTINGS" dropdown menu is open, showing a "Settings" title and four options: "My Account" (gear icon), "Grant Access" (handshake icon), "Add Programs" (plus icon), and "FormSense" (document icon). The "FormSense" option is highlighted with a grey background.



# FormSense Defaults



HOME PROGRAM DESIGN ▾ ADMIN ▾ SETTINGS ▾ SUPPORT

CENTRAL HUDSON GAS & ELECTRIC - DISTRIBUTED GENERATION INTERCONNECTION ONLINE APPLICATION PORTAL [Change Program](#)

 **FormSense** Select a form to edit its default values

Interconnection Application for Projects 50 kW and less

Data Field Label	Type	Default Value	On Forms	Created By
No data available in table				

[Delete All My Default Values](#)

# FormSense (Continued)

## FormSense

Use this page to enter and save default values for forms.  
The FormSense screen has a list of all saved default values.  
Saving defaults will not affect existing applications.

### Interconnection Application

1

Utility Customer Information

2

Applicant/Agent Information

3

Contractor/Installation Information

Applicant/Agent

Name \*

Company \*

Address \*

Email \*

## CENTRAL HUDSON GAS & ELECTRIC - DISTRIBUTED GENERATION INTERCONNECTION ONLINE APPLICATION PORTAL

[Change Program](#)



Select a form to edit its default values

Data Field Label	Type	Default Value	On Forms	Created By
Applicant/Agent City	Contact	Poughkeepsie	Interconnection Application for Projects 50 kW and less,	You
Applicant/Agent Company	Contact	Sunny D Solar	Interconnection Application for Projects 50 kW and less,	You
Applicant/Agent Email	Contact	dg@cenhud.com	Interconnection Application for Projects 50 kW and less,	You

# Collaborative Working Group Activities

## Interconnection Technical Working Group (ITWG)

- Standardized CESIR Template
- Standardized Screening Template
- JU Technical Guidance Matrix
- PV + ESS Interim Guidelines
- ESS Appendix K

## Interconnection Policy Working Group (IPWG)

- Construction Payment Task List
- Standardized Compensation Letter
- PV + ESS Interim Guidelines
- Material Modifications

# Central Hudson Interconnection Guidelines

## Updates



- Visibility into technical requirements
- Application guidance
- Incorporate new standards & technologies

## Timeline



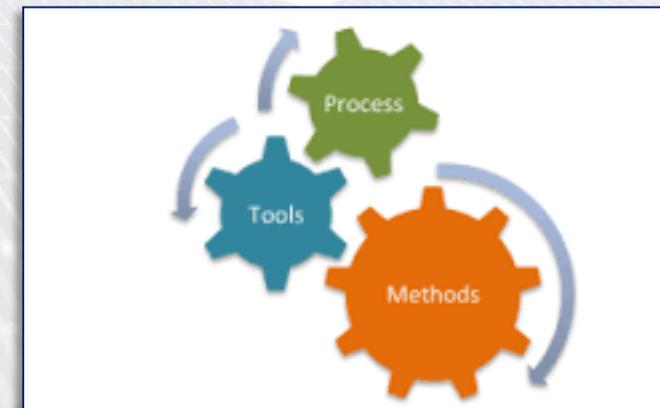
- Last overhauled 2002
- Draft completed 2018
- Publish to DG website 2019

Central Hudson Gas & Electric Corporation (CHG&E)  
Interconnection Protection Requirements for Distributed Generators of  
Greater than 300 kVA Connected in Parallel with the CHG&E  
Electrical Delivery System

Dated: May 5, 2002

# Hosting Capacity: A Tool for Guided PV Deployment

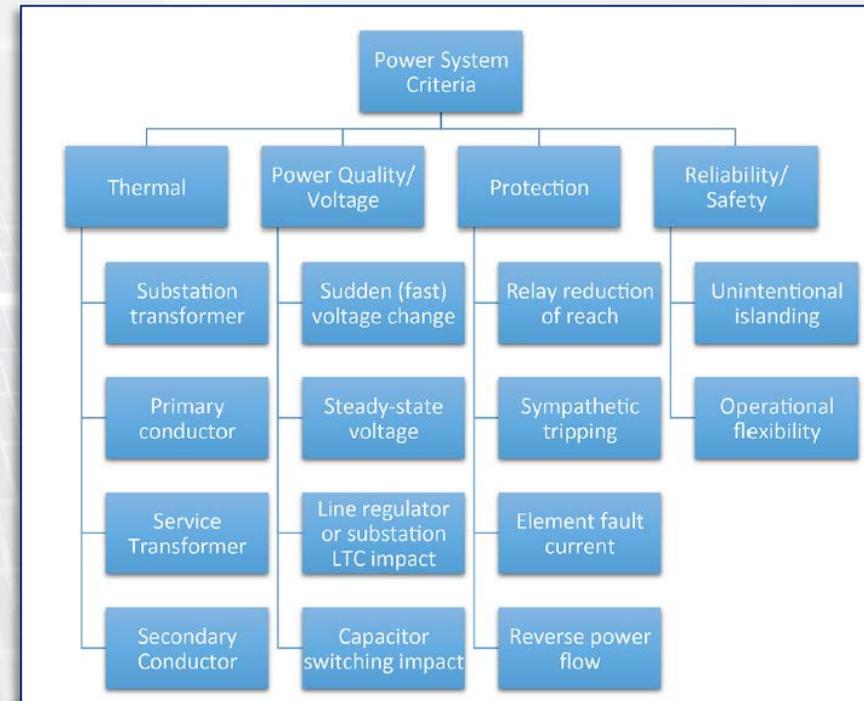
- Development
  - NY State Utilities and Electric Power Research Institute (EPRI)
  - *Defining a Roadmap for Successful Implementation of a Hosting Capacity Method for New York State*
- Methodology
  - Definition
  - EPRI's Streamlined Hosting Capacity Tool
  - System Impacts
  - Map Display



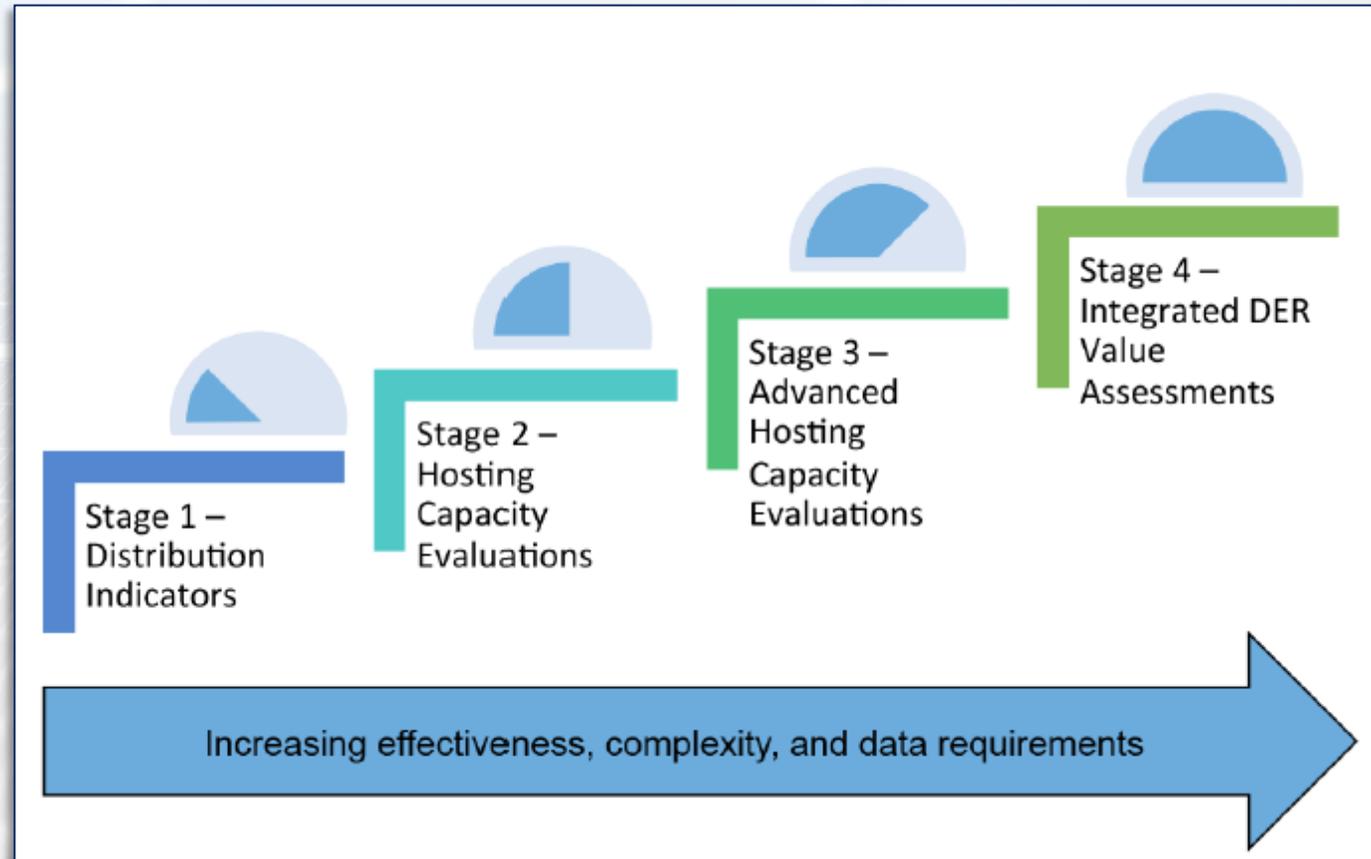
# What is Hosting Capacity?

## DEFINITION

“The amount of Distributed Energy Resources (DER) that can be accommodated without adversely impacting power quality or reliability under existing control configurations and without requiring infrastructure upgrades.”

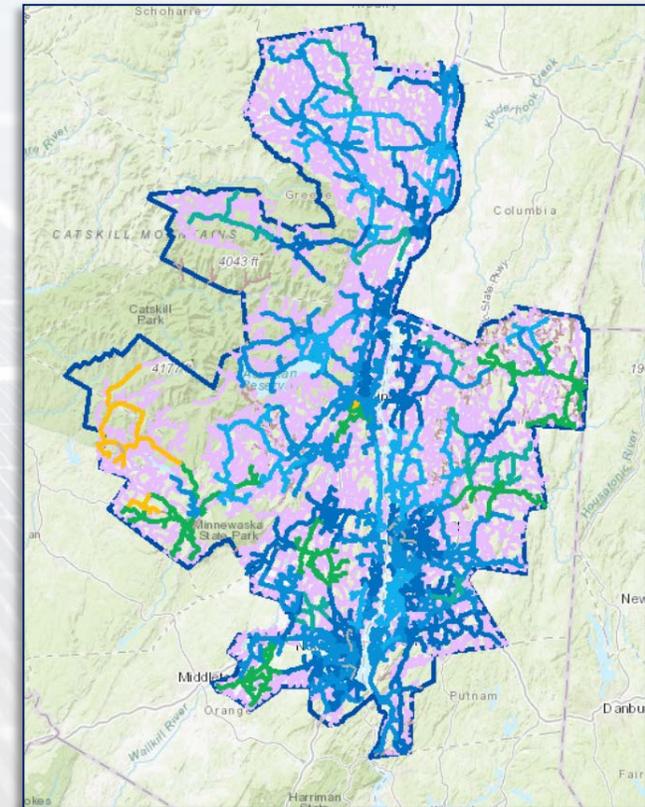
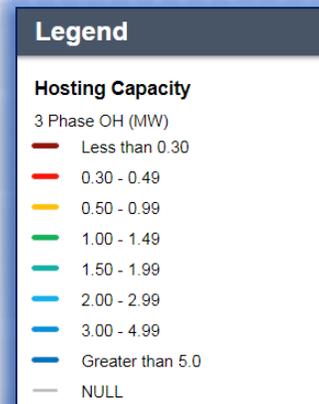
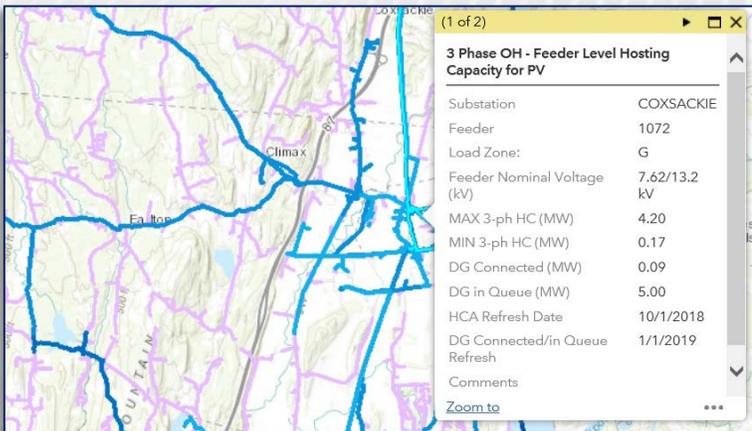


# Hosting Capacity Roadmap



# Initial Hosting Capacity Stages

- **Stage 1 Distribution Indicator Map [completed]**
- **Stage 2 Hosting Capacity Evaluations [completed]**
  - Feeder-level hosting capacity
  - Circuits 12kV and above by 10/1/2017
  - Enhanced with substation information 4/18/2018
  - Queue information updated monthly
  - HCA updated annually, last refresh 10/1/2018



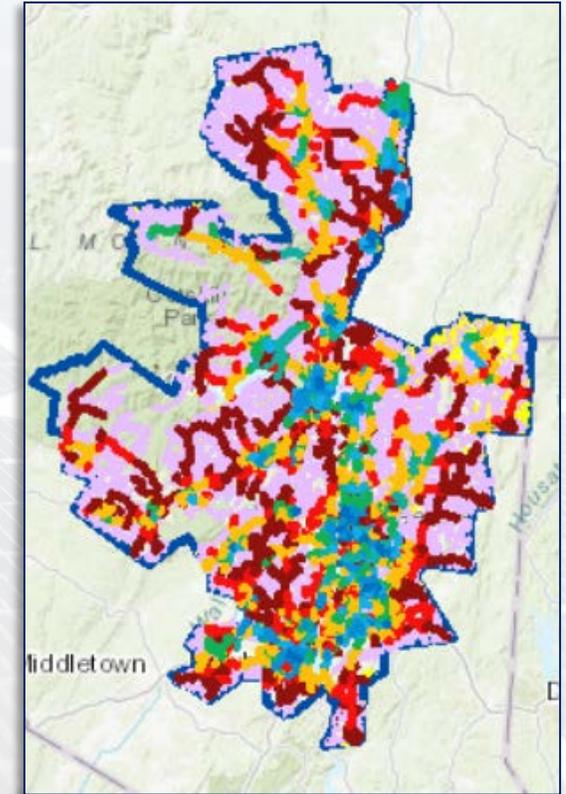
# Upcoming Hosting Capacity Stages

- **Stage 3.0 Advanced Evaluations [in progress]**

- Sub-feeder level hosting capacity
- Existing interconnected DER
- Refresh map 10/1/2019

- **Stage 3.X Advanced Evaluations [not started]**

- Hosting capacity for other DER
- Forecasted hosting capacity
- Increased refresh rate
- Upstream substation constraints
- Operational flexibility



# Future Hosting Capacity Stages

- **Stage 4 Fully Integrated DER Value Assessments [not started]**
  - HCA combined with DER value assessments
  - Identifies potential benefits
  - Means for increasing hosting capacity use of smart inverters and storage



Remote Net-Metered 1.368 MW Solar PV

# Questions?

