

**Town of Glen Volunteer Fire Department  
Meeting Presentation  
October 25, 2022**

# ConnectGEN

## Mill Point Construction Overview



*Connecting Power,  
Projects, and People*

Fall 2022

[www.connectgenllc.com](http://www.connectgenllc.com)

# Introduction

Supporting New York State's energy independence with locally-produced clean electricity



**Mill Point**  
SOLAR PROJECT

Host Community:

**Town of Glen, Montgomery County, NY**

Renewable Resource:

**Solar Energy**

Installed Capacity:

**Up to 350 MWac (Solar)**

Projected Project Footprint:

**Approximately 2,000 acres**

Projected Completion Date:

**2025**

Point of Interconnection:

**National Grid – Marcy to New Scotland  
345-kV**

New York Homes Powered:

**Approximately 95,000**



# Project Overview

- Project site and facility equipment will be designed in compliance with applicable state, federal, and international fire codes and standards, including:
  - National Fire Protection Act (NFPA – NFPA 855)
  - International Fire Code 2018 and 2019 (IFC 2018 & 2021)
  - Underwriter Laboratories Standards (UL Standards)
  - Institute of Electrical and Electronics Engineers
  - 2019 New York Code Supplement – New York State Building and Fire Code
- Compliance of facility with applicable fire codes is part of the NY State Office of Renewable Siting (ORES) Section 94-C siting permit assessment process



# Major Project Components

Project will use equipment that has been utilized successfully all over the United States



## *Photovoltaic (PV) Modules*

- PV modules generate electric current as sunlight passes through the layers of the solar cell
- Modules are grouped together in an array to maximize output, with groups connected to a power inverter unit
- Each generation facility hosts rows of multiple modules that are mounted on trackers, usually oriented on a North-South axis



## *Trackers & Racking*

- Project will use Single-Axis Trackers with driven steel foundations
- Modules will be mounted on racking fabricated from steel and aluminum
- Each row of trackers is self-powered by an electric motor or actuated by compressed air, allowing the module arrays to maximize output by following the direction of the Sun



## *Collection System*

- The collection system will aggregate DC electricity produced by the modules
- Inverters sited throughout the module array will invert DC electricity to AC electricity
- Buried insulated AC cables will deliver power from the inverters to the project substation located at the point of interconnection



# Major Project Components

Project will use equipment that has been utilized successfully all over the United States



## *Medium voltage transformer/inverter*

- The medium voltage transformer and inverters are two pieces of equipment located on the same “skid”
- The inverter inverts Direct Current (DC) electricity from the module array into Alternating Current (AC)
- The medium voltage transformer transforms electricity from the inverter AC output voltage (690 V) to the AC intermediate voltage (34.5 kV)



## *Substation*

- The project substation serves as the nucleus of the project’s operations
- Here AC power is collected, transformed via the Main Power Transformer, and metered for injection into the grid
- The substation control building houses a Remote Terminal Unit (RTU), the RTU aggregates project data via the SCADA system, and allows the operations desk a real time view into system conditions



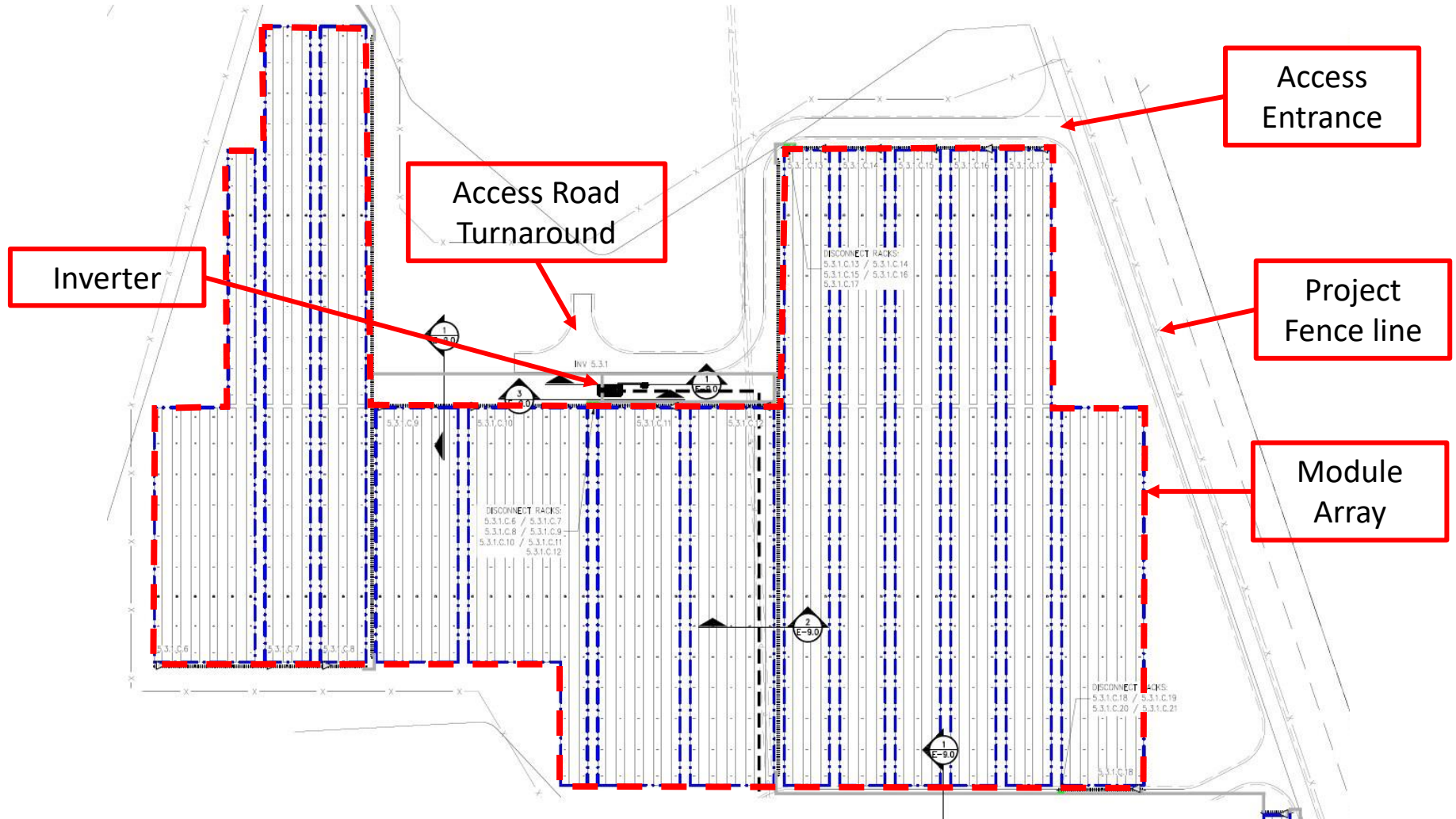
## *Main Power Transformer*

- The main power transformer increases the voltage of the system from the AC intermediate voltage (34.5 kV) to the AC high voltage of the transmission system (345kV)
- Very common piece of electrical equipment, transformers of varying ratings found at most substations, at all power generators, on distribution poles, etc.



# Typical Site Configuration

REPRESENTATIVE Solar Project Array; Not specific to Mill Point



# Summary of Typical Construction Process

## PRE-CONSTRUCTION

- Clear & Grub
- Construction Survey

## CONSTRUCTION

- Civils & Construction Roads
- Pile Installation
- AC Feeder Installation
- DC Feeder & Associated Equipment Installation
- Mechanical Installation (Trackers)
- Module Installation
- Array or Module Wiring

## TESTING & START-UP

- Construction Electrical Testing
- Commissioning & Start-Up

## OPERATIONS & MAINTENANCE

- Operations
- Maintenance





# Outlining the construction process



## “Clear & Grub”

- Removal of unsuitable vegetation from the project work area. Typically referring to tall, woody vegetation that is incompatible with site operations
- Cleared vegetation can be disposed of by hauling to a landfill, mulching and spreading on site
- Demolition of defunct structures, or fences will typically also occur during this phase



## Site Grading & Access Roads

- Grading within module arrays performed to accommodate tracking equipment and access roads

# Outlining the construction process



## PV Field Construction

- Pier locations are first surveyed and “pinned”, laid out near their planned locations, and finally driven to appropriate depth with pile drivers.
- Geotechnical conditions on site may necessitate occasional pre-drilling of pier holes



## Racking & Trackers

- Tracker hardware is mounted to the pier foundations using industry specific hardware



# Outlining the construction process



## Module Installation

- Trucks will deliver pallets of modules throughout the array along roads within the project fenced area
- Personnel must then carry individual modules to their respective locations and affix them to the racking
- Modules are series wired into groups called “strings”. Individual strings are then wired in parallel through a combiner box, or harness



## Installation of AC/DC cabling

- DC cables are typically installed in a hybrid fashion, having the cables run underground from the disconnects to the inverter, and strung above ground throughout the array
- AC Collection & “Homeruns” are installed most frequently below grade via trenching

# Construction Testing & Commissioning

**Construction Testing & Commissioning** is the function in the Construction Process that validates proper wiring and functionality.

This Phase is broken down into multiple phases. These are:

- **Pre-functional**

The Pre-functional phase consists of validating each individual conductor. Includes both ensuring each cable is labeled correctly and terminated in the proper location and ensuring the cable has not been damaged during the installation thru a rigorous testing process.

- **Functional**

the Functional testing consists of testing individual components that make up the balance of the photovoltaic system, meteorological, plant controller, SCADA, relays, etc. This is to ensure each piece of equipment functions as its designed intent.

- **Operational**

The Operational testing consists of testing the plant as a 'whole' and as is required by several Regulatory entities such as NERC, the local utility and NYISO. These Regulatory entities play a significant role in witnessing and reviewing test data to ensure the plant is functioning and operating as designed.



# Operations & Maintenance

Operations & Maintenance is the function after all Construction & Commissioning functions are completed and the plant is considered Commercial.

Limited interactions with the community during the life cycle of the plant. Exceptions are:

- Plant personnel are typically local employees
- Plant management purchasing local goods to support plant operations (non-capitol/consumables)
- Site maintenance (mowing, road maintenance/upgrades, etc.)



# Fire Department & AHJs

- From Construction to Start-Up & Testing, various procedures identifying every risk or hazard will be developed and implemented to provide guidance to employees and first responders
- These procedures include:
  - Emergency Response Plan
  - Defined muster stations
  - Evacuation plan
  - Emergency switching
  - Fire Department response and access
  - Fire prevention
  - First aid & safety
  - Electrical Safety
  - Lock Out/Tag Out
- Fire Department and Authorities Having Jurisdiction (AHJs) will have access to all procedures and will be orientated and/or trained on said procedures



# Next Steps

ConnectGen proposes to begin formal consultation on the following project features:

- Access road width, length and turning radii
- Equipment and training
- Recommendations for OEM fire suppressants
- Emergency response routes
- Availability of municipal water
- Fire Department access





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**Town of Glen Volunteer Fire Department  
Meeting Presentation  
February 2, 2023**

# ConnectGEN

## Mill Point Solar Design Summary



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February 2023

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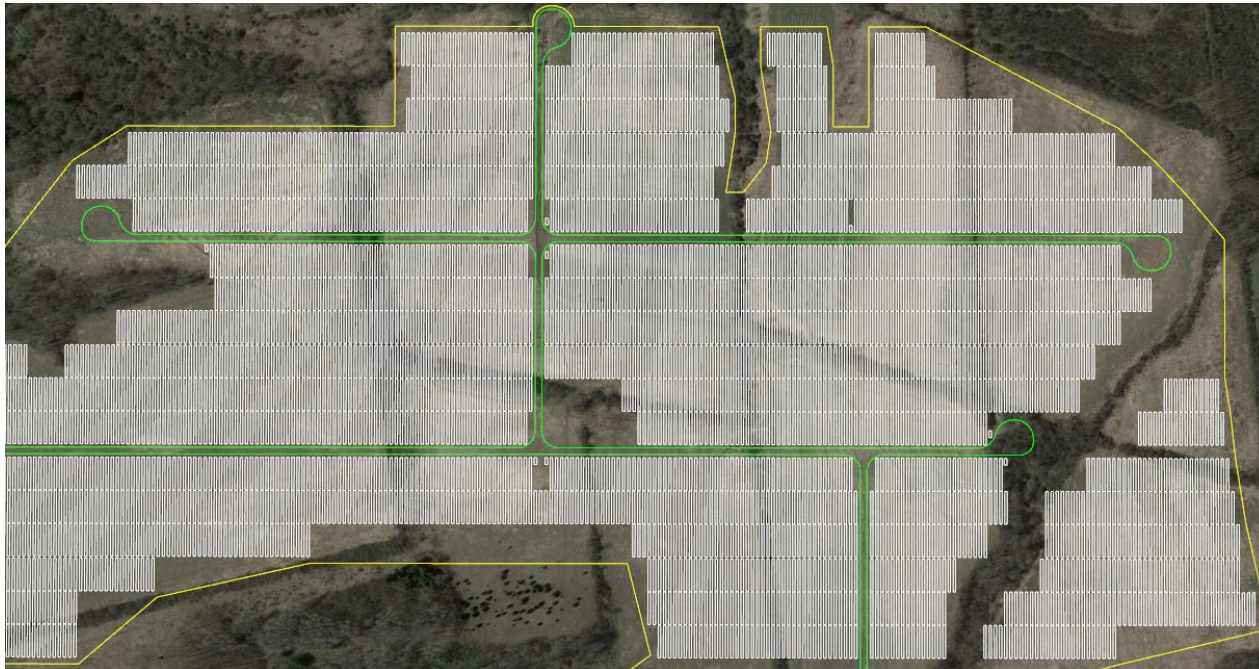
# Project Firebreak

- 20 ft. minimum gap between all panels, trackers, inverters, and the project fenceline



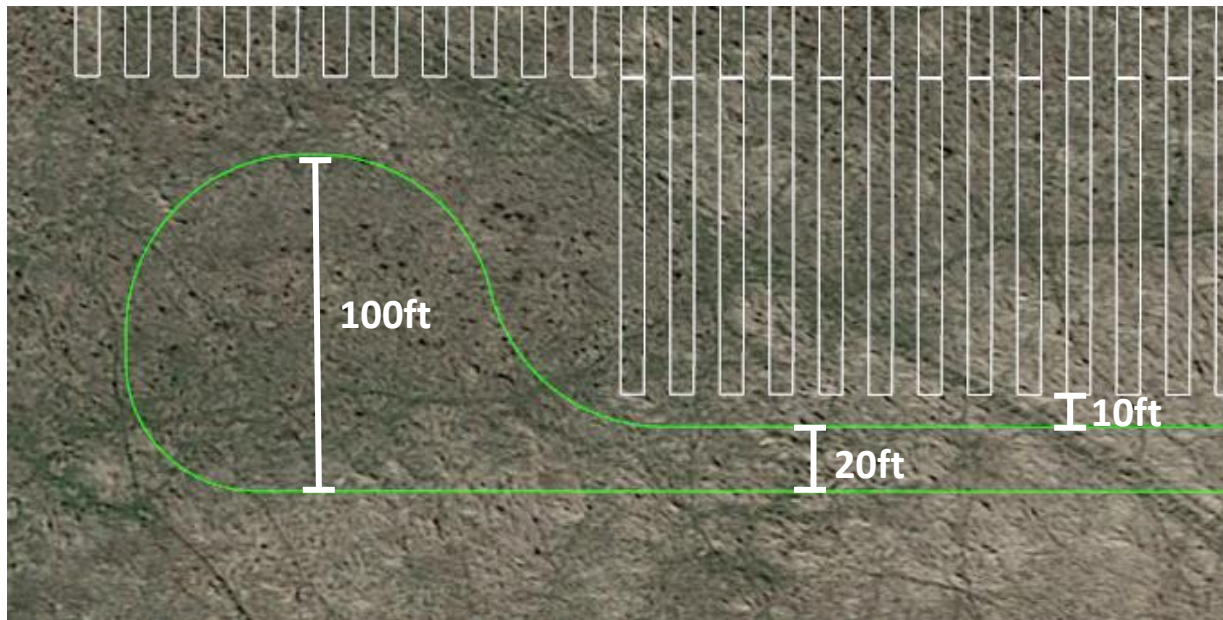
# Project Access Roads

- 20 ft. road width
- 5-10 ft. gap between panel array and access road edge
- 100 ft. diameter cul-de-sacs of the terminus of every road
- Entire site access road system accommodates 45 ft. outside turning radius (accessible by wb-67 tractor trailer with 62.5' wheelbase)

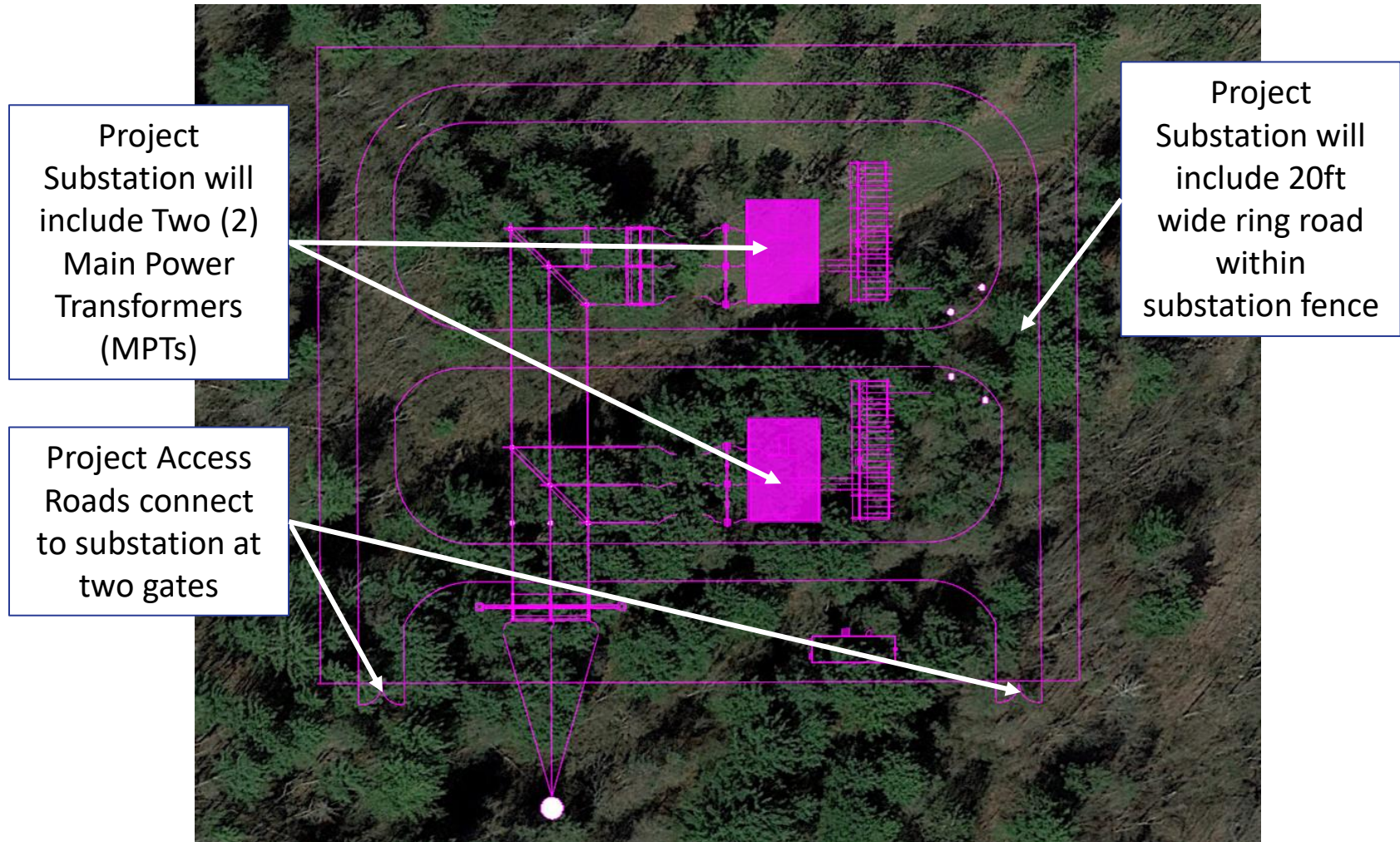


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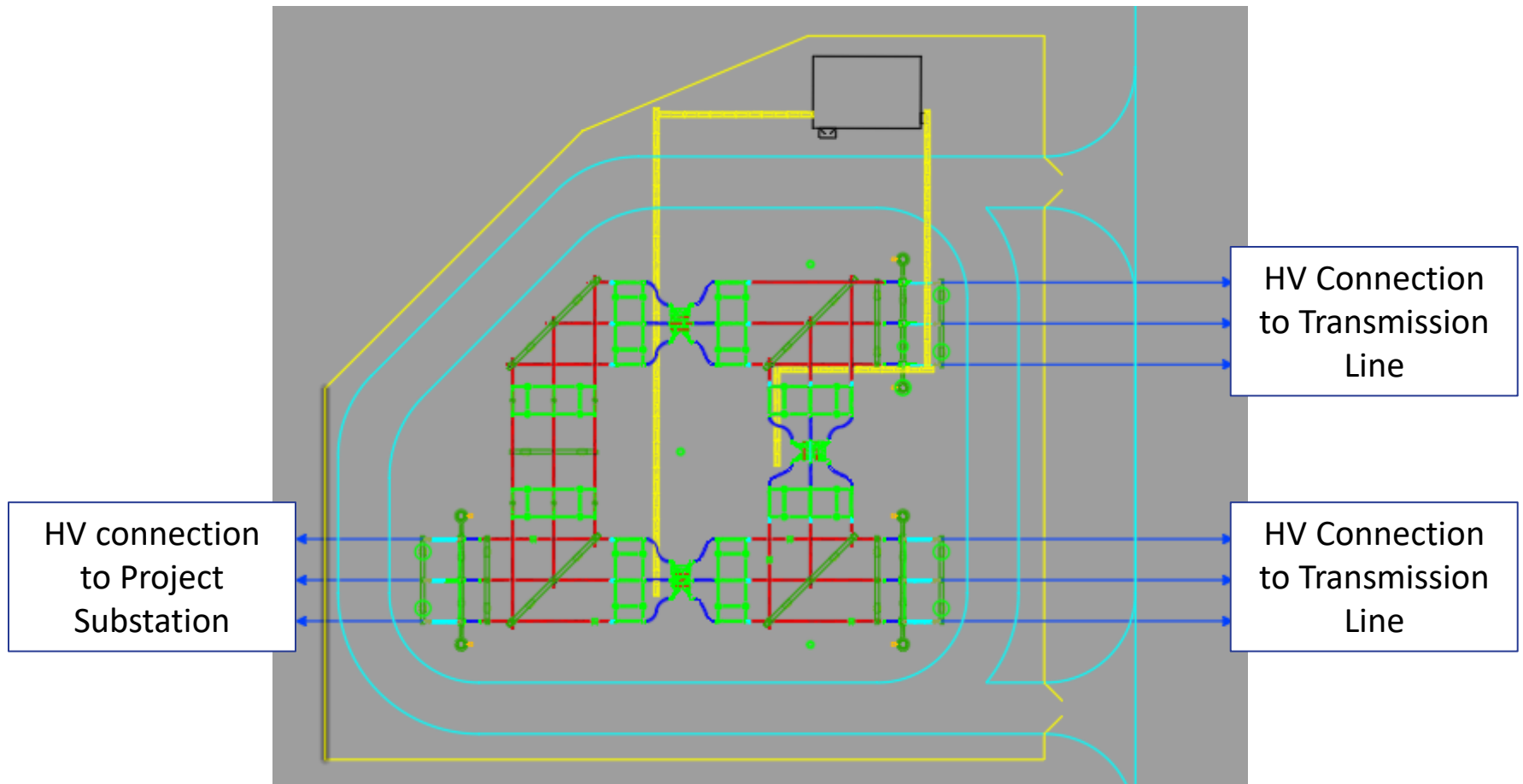


# Project Substation and Point-of-Interconnection Facility



# Point-of-Interconnection Facility

Interconnection Switchyard will be owned, operated, and maintained by National Grid





## Next Steps

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- Follow-up on outstanding questions / items from today
  
- Approximate timeline and materials from ConnectGen
  - More detailed project design plan from ConnectGen
  - Site Security Plan and Safety Response Plan drafts ready
  - Next in-person meeting



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**Town of Glen Volunteer Fire Department  
Meeting Minutes  
February 2, 2023**

## **Meeting between ConnectGen LLC and Town of Glen, NY Volunteer Fire Department**

Regarding: Mill Point Solar Project

Date: Thursday, February 2, 2023 at 5PM ET

Attendees:

### ConnectGen

- Michael Moritz, Manager, Engineering & Pre-Construction
- Jeffrey Nemeth, Director, Development
- Colleen Nash, Director, Development & Energy Storage
- Andrew Barrett, Manager, Development

### Town of Glen Volunteer Fire Department

- JD Downing, President, 2023 Executive Board
- Ken Griffin Jr., Chief

## **Meeting Minutes and Notes**

Started approximately 5:10PM ET.

Introductions, non-business topics, history of Fire Department, ConnectGen employee backgrounds and development experience in New York State.

Michael Moritz (ConnectGen) shared PowerPoint slides (enclosed/attached), including:

- Project firebreak example showing illustrative design visual of access roads, solar panel array, and project fenceline buffer
- Details on planned access road widths, panel buffer distance, cul-de-sac radius, tractor trailer spec access
- Substation illustration and design plan, including Main Power Transformers layout, access roads illustration, fenceline, and security gate
- Point-of-Interconnection Facility illustration. Interconnection Switchyard will be owned, operated, and maintained by National Grid
- Next Steps:
  - o Follow-up on outstanding question list from today
  - o Approximate timeline and materials coming from ConnectGen
    - More detailed design plan in Q2 2023
    - Site Security Plan and Safety Response Plan drafts to Fire Dept in Q2 2023
    - Review these materials with Fire Dept in another in person meeting Q2 2023

Andrew Barrett (ConnectGen) handed out Discussion and Question List (enclosed/attached):

- Dept headcount/manpower?
- Trucks # and type?
- Local and surround town/county shared response plans and neighboring fire departments?
- Local water resources?
- Fire access road widths?

JD Downing (Fire Dept) said they would circle back with answers for ConnectGen in a few weeks.

Further Q&A amongst group. Discussion of other solar projects built or in construction in area. Plan to continue the dialogue and consultation between ConnectGen and the Fire Dept.

Fire Department appreciated the visit and effort by ConnectGen to keep an open dialogue on project plans and fire and safety details well before construction and state application filing process.

ConnectGen appreciated the effort by JD and Ken to meet with ConnectGen on short notice between their day jobs and evening Fire Dept meetings and dinner.

Adjourned approximately 5:40 PM ET.