

November 10, 2020

VIA ELECTRONIC FILING

Ms. Tanowa Troupe
Administration/Docketing
Ohio Power Siting Board
180 East Broad Street, 11th Floor
Columbus, Ohio 43215-3793

Re: In the Matter of Hecate Energy Highland 4 LLC and Hecate Energy Highland 2, LLC for a Certificate of Environmental Liability and Public Need for a 100 MW Solar-Powered Electric Generating Facility in Clay and Whiteoak Townships in Highland County, Ohio Case No. 20-1288-EL-BGN (Before the Ohio Power Siting Board) / Response to Board Staff's First Data Request / Updated Noise Modeling

Dear Ms. Troupe:

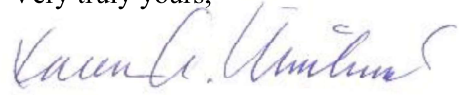
This letter and the enclosure serve to respond to the Board staff's first data request regarding the Application filed on September 2, 2020 for the New Market Solar Farm, a 100 MW electric generating facility to be located on approximately 1,116 acres in Clay and Whiteoak Townships in Highland County, Ohio ("New Market Solar" or "Project"). The Project will consist of two separate and distinct facilities: (1) New Market Solar I, a 65 MW facility that will be developed, constructed and operated by Hecate Energy Highland 4 LLC and will occupy 582 acres of the Project site; and (2) New Market Solar II, a 35 MW facility that will be developed, constructed, and operated by Hecate Energy Highland 2, LLC and will occupy 222 acres of the Project site.

Attached for filing is the following document:

- November 9, 2020 Updated Noise Modeling of Operations Based on Revised Equipment Data Prepared by Terracon Consultants, Inc. for New Market Solar I and New Market Solar II

If you have questions or need additional information, please contact me.

Very truly yours,



Karen A. Winters

cc: Patti Shorr, Hecate Energy LLC
Jared Wren, Hecate Energy LLC
Emily Kosmalski, Terracon Consultants, Inc.
Danelle Gagliardi, Squire Patton Boggs (US) LLP

November 9, 2020



Hecate Energy Highland 4, LLC and
Hecate Energy Highland 2, LLC
621 Randolph Street
Chicago, Illinois 60661
Attn: Ms. Patti Shorr
Vice President
P: (614) 205-3798
E: PShorr@HecateEnergy.com

Re: Updated Noise Modeling of Operations Based on Revised Equipment Data
New Market Solar I and New Market Solar II
Clay and Whiteoak Townships
Highland County Ohio
Terracon Project No. 49187638A

Dear Ms. Shorr:

Terracon Consultants, Inc. (Terracon) is pleased to summarize the results of updated noise modeling of operations in accordance with the Ohio Power Siting Board's data request on October 21, 2020. The updated modelling is due to a revision of proposed project equipment since the time of the prior application submittal. The updated noise model was run utilizing the most current project inverter, transformer, and substation equipment data. After reviewing the operation equipment associated with the proposed solar farms and associated substation, Terracon expects that offsite sound impacts from the operation of the proposed solar farm will be minimal.

Noise Modeling:

Terracon performed noise updated modelling of proposed solar farm operations using the Sound Mapping Tools, an ArcGIS toolbox for modeling the propagation of sounds (Version 4.4, June 22, 2017). The model uses the following inputs/criteria based on conditions and land cover typical of the exiting conditions, and data inputs for noise generating equipment and locations proposed for the site. Noise generating equipment includes inverters, transformers, and larger-scale substation transformers. The ambient noise data utilized in the model were based on land cover and typical noise values associated with those types of land cover.

- Digital Elevation Model: 10-meter (m) resolution (derived from LIDAR)
- National Landcover Dataset: 10m (resampled from 30m)
- Weather conditions
 - Temperature: 11°Celsius (approximate yearly average)
 - Humidity: 70% (approximate yearly average)
 - Wind: 0 miles per hour (mph)
 - Seasonal Conditions: Clear, sunny day

Terracon Consultants, Inc. 611 Lunken Park Drive Cincinnati, Ohio 45226
P [513] 321-5816 terracon.com



Updated Noise Modeling of Operations

New Market Solar I and II ■ Clay and Whiteoak Townships, Ohio

November 9, 2020 ■ Terracon Project No. 49187638A



- Inverters and transformers – modelled at 20 Locations for the 65MW solar farm and 11 locations for the 35MW solar farm based on revised shapefile data. The 65MW and 35MW substation transformers were included in the same model, to account for cumulative noise impacts from both sets of equipment

Type	dB	Distance (Meters)
65MW Sungrow inverter	85 dB	1
65MW Siemens inverter	74.6 dB	1
35MW Sungrow transformer	65 dB	1
65MW Substation transformers	79/81/82 dB	1
35MW Substation transformers	81/82/84 dB	1

The visual results of the model are depicted on Exhibit 1 for the 65MW solar farm, the 35MW solar farm, and the associated substation. The results show that highest sound levels are at the locations of the inverters (61-69 dB range) and the next tier of sound levels is adjacent to those areas (46-60 dB range), followed by the next tier of sound levels (31-45 dB range). All three of these areas fall within the boundaries of the solar farm. The next tier (16-30 dB range) does extend slightly outward from the site boundary in the areas adjacent to the inverters. Those ranges are less than the average sound level measured during the study at the property line of the nearby residence, which was 54.4 dBA.

Exhibit 2 was developed using the model to depict sound levels identified in excess of ambient noise levels for the 65MW solar farm, the 35MW solar farm, and the associated substation. This exhibit shows that sound levels in excess of ambient noise levels resulting from operations barely exceed the site boundaries and only in the areas directly adjacent to the inverters near the project boundary line. **Based on the results of the model, the operations of the solar project are not anticipated to have a significant impact on surrounding community noise levels or sensitive receptors.** Terracon appreciates the opportunity to provide services to you. If we can provide any additional environmental, occupational health, or safety-related services, please contact us at (513) 321-5816.

Sincerely,

Terracon Consultants, Inc.


Jacob Dohm
Project Scientist


Emily Kosmalski
Senior Environmental Planner

Attachments: Exhibit 1: Sound Model Results for 65MW, 35MW, and substation

Exhibit 2: Sound Model – Excess of Ambient Results for 65MW, 35MW, and substation

ATTACHMENTS

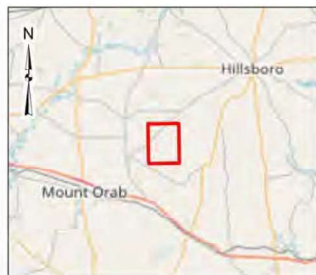


0 800 1,600 3,200 Feet

DATA SOURCES:
ESRI WMS - OpenStreetMap, Imagery

Project Area
 Half Mile from Project Area

Sound Model
Decibels
 ≤ 15
 16 - 30
 31 - 45
 46 - 60
 61 - 69



Project No.:
49187638A
 Date:
Nov 2020
 Drawn By:
PNM
 Reviewed By:
NOW

Terracon
 611 Lunken Park D Cincinnati, OH 45226
 PH. (513) 321 581 terracon.com

Sound Model - 65MW

Highland Solar
 Clay Township, OH 45171

Exhibit

1

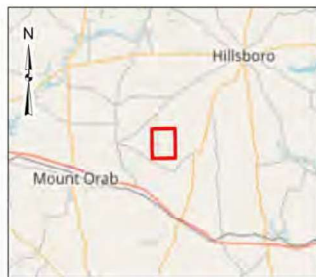


0 600 1,200 2,400 Feet

DATA SOURCES:
ESRI WMS - OpenStreetMap, Imagery

Project Area
 Half Mile from Project Area

Sound Model
Decibels
 ≤ 15
 16 - 30
 31 - 45
 46 - 60
 61 - 69



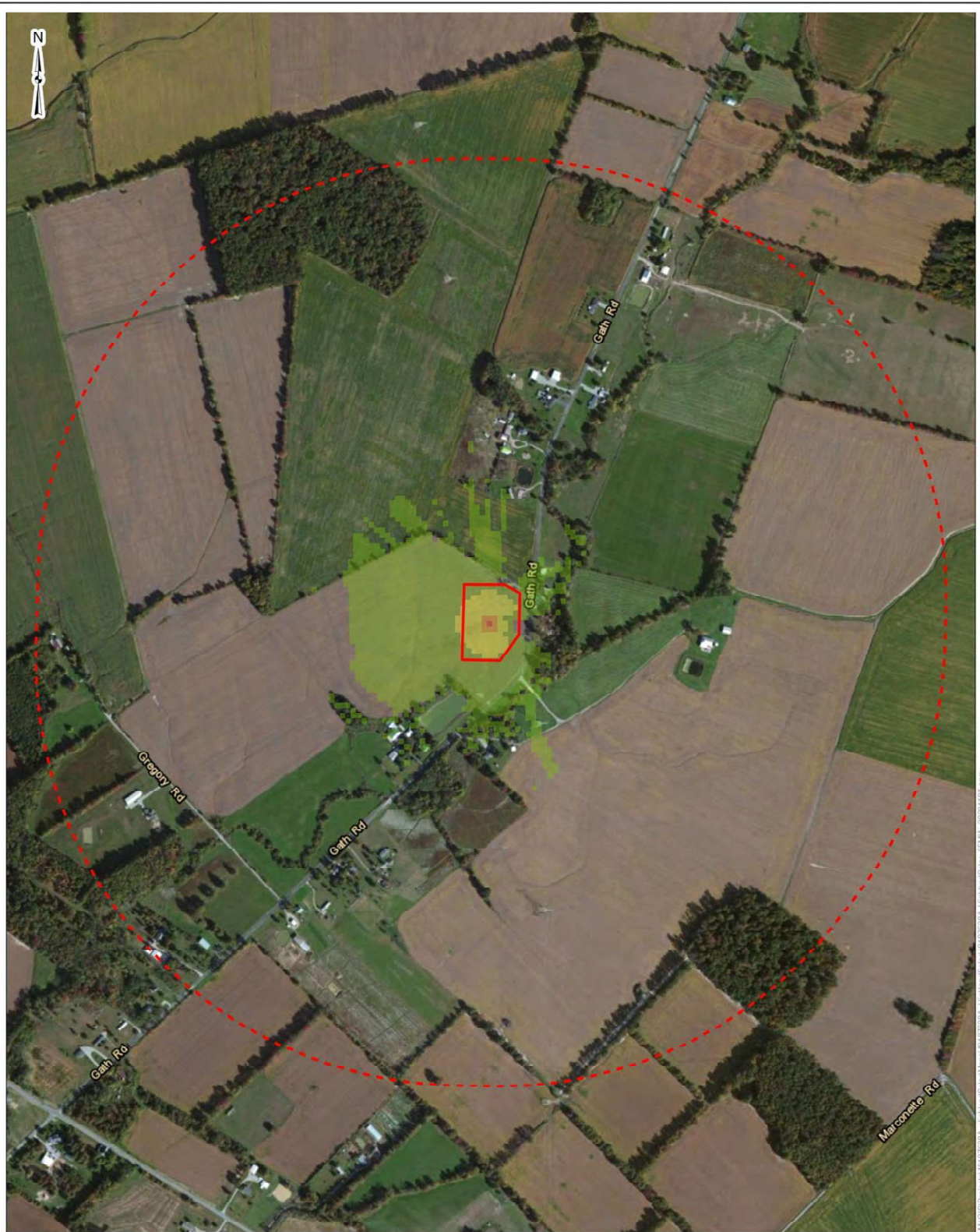
Project No.:
49187638A
 Date:
Nov 2020
 Drawn By:
PNM
 Reviewed By:
NOW

Terracon
 611 Lunken Park D Cincinnati, OH 45226
 P.H. (513) 321 581 terracon.com

Sound Model - 35MW
 Highland Solar
 Clay Township, OH 45171

Exhibit
1

M:\GIS\Projects\49187638A - Highland Solar\MapDocs\49187638A - Highland Solar - 35MW - 2021107.aprx



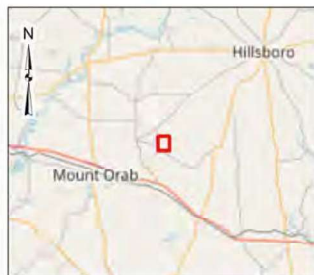
0 300 600 1,200 Feet

DATA SOURCES:
ESRI WMS - OpenStreetMap, Imagery

- Substation
- Half Mile from Substation

Sound Model
Decibels

- ≤ 15
- 16 - 30
- 31 - 45
- 46 - 60
- 61 - 70



Project No.:
49187638A
Date:
Nov 2020
Drawn By:
PNM
Reviewed By:
NOW

Terracon
611 Lunken Park D Cincinnati, OH 45226
PH. (513) 321 581 terracon.com

Sound Model - Substation

35MW and 65MW Sites
Highland Solar
Clay Township, OH 45171

Exhibit

1

M:\GIS\Projects\49187638A - Highland Solar\MapDocs\49187638A - Highland Solar - Exhibit 1 - Sound Model - Substation - 20211107.mxd

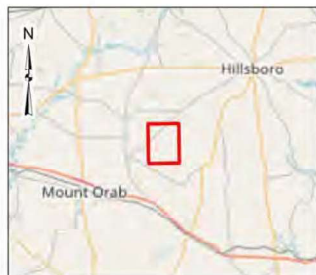


0 800 1,600 3,200 Feet

DATA SOURCES:
ESRI WMS - OpenStreetMap, Imagery

 Project Area
 Half Mile from Project Area

Sound Model
Decibels
 ≤ 15
 16 - 30
 31 - 45
 46 - 60
 61 - 67



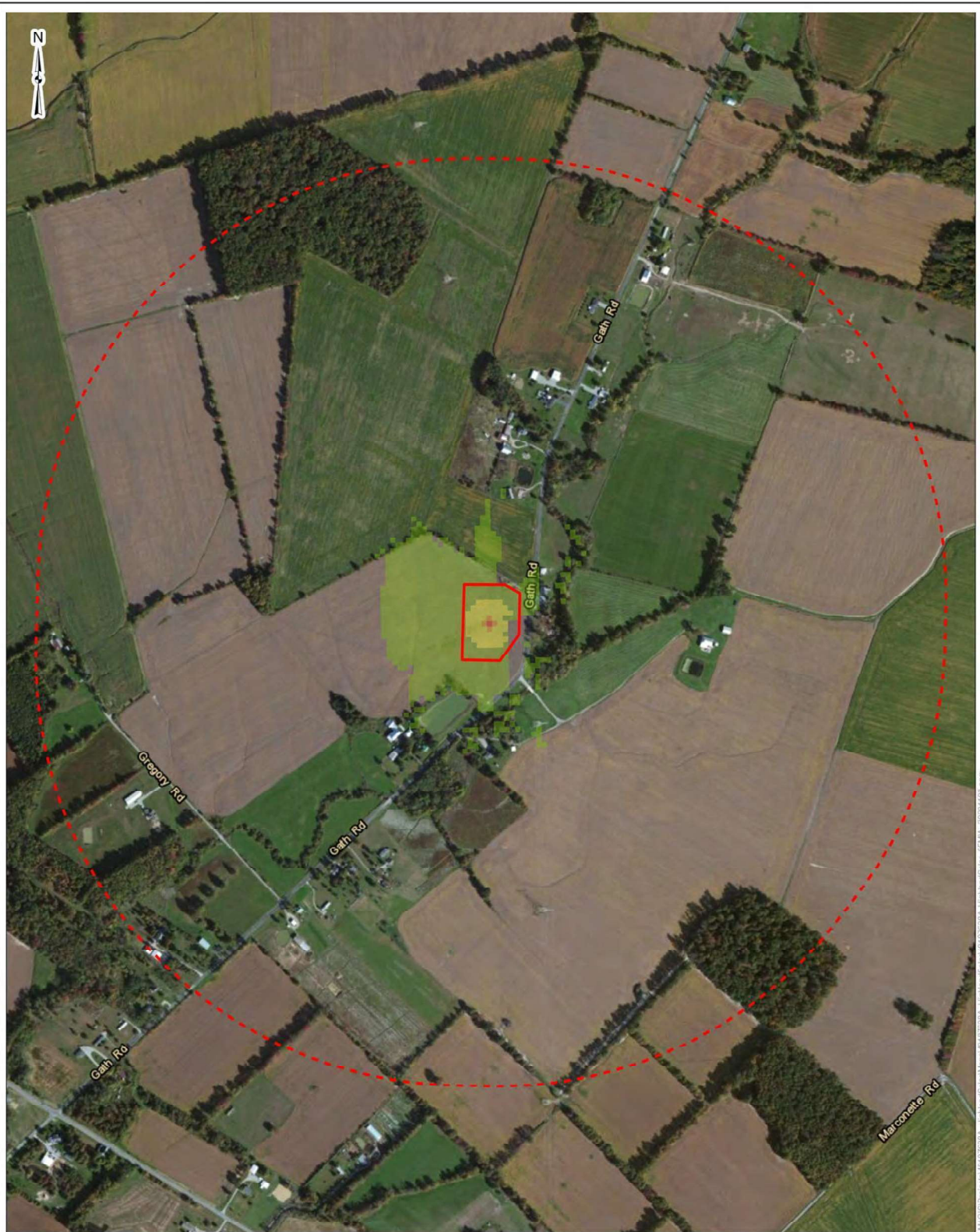
Project No.:
49187638A
 Date:
Nov 2020
 Drawn By:
PNM
 Reviewed By:
NOW

Terracon
 611 Lunken Park D Cincinnati, OH 45226
 PH. (513) 321 581 terracon.com

Sound Model - Excess of Ambient - 65MW
 Highland Solar
 Clay Township, OH 45171

Exhibit
2





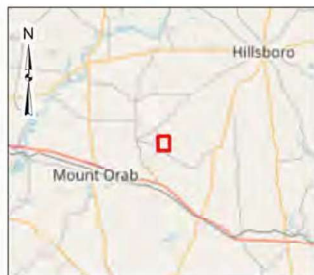
0 300 600 1,200 Feet

DATA SOURCES:
ESRI WMS - OpenStreetMap, Imagery

- Substation
- Half Mile from Substation

Sound Model
Decibels

- ≤ 15
- 16 - 30
- 31 - 45
- 46 - 60
- 61 - 68



Project No.:
49187638A
Date:
Nov 2020
Drawn By:
PNM
Reviewed By:
NOW

Terracon
611 Lunken Park D Cincinnati, OH 45226
PH. (513) 321 581 terracon.com

Sound Model - Excess of Ambient - Substation

35MW and 65MW Sites
Highland Solar
Clay Township, OH 45171

Exhibit

2

M:\GIS\Projects\49187638A - Highland Solar\MapDocs\49187638A - Highland Solar - Exhibit 2 - 2021107.aprx

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

11/10/2020 3:03:31 PM

in

Case No(s). 20-1288-EL-BGN

Summary: Response Response to Board Staff's First Data Request - Updated Noise Modeling electronically filed by Ms. Karen A. Winters on behalf of Hecate Energy Highland 4 LLC