Preliminary Scoping Statement

for the

Coeymans Solar Farm

proposed in

Albany County, New York

Case Number 17-F-0617

TETRA TECH

April 2018

TETRA TECH

April 17, 2018

Honorable Kathleen H. Burgess
Secretary
New York State Board on
Electric Generation Siting and the Environment
Three Empire State Plaza
Albany, New York 12233-1350

Re: Case 17-F-0617 – Application of Hecate Energy Albany 1 LLC and Hecate Energy Albany 2 LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 of the Public Service Law for Construction of a Solar Electric Generating Facility Located in the Town of Coeymans, Albany County.

Dear Secretary Burgess:

Hecate Energy Albany 1 LLC and Hecate Energy Albany 2 LLC (collectively "Hecate Albany" or "Co-Applicants") propose to construct a 40 MW photovoltaic solar major electric generating facility in the Town of Coeymans, Albany County, New York (the "Facility"). In order to construct the Facility, Hecate Albany is seeking a certificate of environmental compatibility and public need ("Certificate") from the New York State Board on Electric Generation Siting and the Environment ("Siting Board") pursuant to Article 10 of the Public Service Law ("PSL") and the Siting Board's rules (16 NYCRR Part 1000).

Pursuant to PSL § 163 and 16 NYCRR § 1000.5, Hecate Albany hereby submits its Preliminary Scoping Statement ("PSS"). Enclosed are ten paper copies of the PSS. An electronic copy of the PSS will also be filed with the Secretary through the Department of Public Service's online DMM system. In addition, Hecate Albany is simultaneously sending a check to the Department of Public Service for the preapplication intervenor funding as required by PSL § 163(4).

Copies of the PSS be served on the parties identified in 16 NYCRR § 1000.5(c). An Affidavit of Service in compliance with 16 NYCRR § 1000.5(f) is attached hereto as Attachment 1.

Pursuant to 16 NYCRR § 1000.5(d), notice of the PSS was published in the Catskill Daily Mail on Tuesday, April 10, 2018 and the Hudson Register Star on Tuesday, April 10, 2018. Proofs of publication in compliance with 16 NYCRR § 1000.5(f) will be filed when they are received from the newspapers. Copies of the notices that were published in the newspapers and an Affidavit of Publication are attached hereto as Attachment 2. The notice of the PSS as required by 16 NYCRR § 1000.5(e) was also provided and an Affidavit of Service via U.S. mail, therefore, is attached hereto as Attachment 3. Where requested, stakeholders were also notified via email; an Affidavit of Service via email will be provided under separate cover.

Pursuant to 16 NYCRR § 1000.5(g), any person, agency, or municipality may submit comments on the PSS "[w]ithin 21 days after the filing of the" PSS by filing a copy with the Secretary and serving the Co-Applicants at the following address:

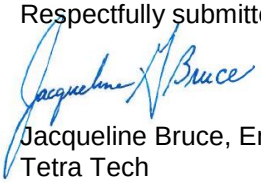
Gabriel Wapner
Hecate Energy, LLC
621 W Randolph St.
Chicago, IL 60661
contact@albanycountysolar.info

Tetra Tech, Inc.
1200 Scottsville Road, Bldg C, Suite 181, Rochester, New York 14624
Tel 860-748-8745 tetratech.com

Please take notice that Hecate Albany is changing the name of the Facility from Albany County Solar Facility to Coeymans Solar Farm. Although the original URL, www.albanycountysolar.info, and email address, contact@albanycountysolar.info, will remain active, they will forward to the updated URL, www.coeymanssolarfarm.info, and email address, contact@coeymanssolarfarm.info, respectively, once the updated URL and email are active.

Hecate Albany looks forward to working with interested parties and stakeholders during the pre-application phase of this process. Please contact me if you have any questions regarding this filing.

Respectfully submitted,



Jacqueline Bruce, Environmental Planner
Tetra Tech

Attachments:

1 – Affidavit of Service
2 – Affidavit and Proof of Publication
3 – Affidavit of Mailing

CC: Lorna Gillings, Office of Consumer Services
Gabriel Wapner, Hecate Energy LLC
Sam Laniado, Read and Laniado, LLP
Philip Mooney, Hecate Energy LLC

Attachment 1 – Affidavit of Service

Case 17-F-0617

Application of Hecate Energy Albany 1 LLC and Hecate Energy Albany 2 LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 of the Public Service Law for Construction of a Solar Electric Generating Facility Located in the Town of Coeymans, Albany County.

AFFIDAVIT OF SERVICE

I, William Boer of Tetra Tech, Inc., in Parsippany, New Jersey, caused the document entitled 'Preliminary Scoping Statement for the Coeymans Solar Farm proposed in Albany, New York', to be sent via FedEx to the required parties, as identified in 16 New York Codes, Rules and Regulations § 1000.5(c). A list of the recipients to whom this document was sent, as well as proof of shipment, is attached hereto.

William Boer

Sworn to me before this 17th day of April 2018

Annie Chisholm
Notary Public Of New Jersey
Commission Expires:7/7/2021
ID# 2346323

Notary Public

Recipients of the Preliminary Scoping Statement per 16 NYCRR § 1000.5(c)

Required Party	Contact	Address	Copies Sent
New York Public Service Commission	Hon. Kathleen H. Burgess, Secretary to the Commission	Empire State Plaza, Agency Building 3, Albany, New York 12223-1350	10
New York State Department of Environmental Conservation (NYSDEC), Central Office, Division of Environmental Permits, Major Project Management	Daniel Whitehead, Director	625 Broadway, Albany, New York 12233-1750	4
NYSDEC, Region 4 Office	Keith Goertz, Regional Director	1130 North Westott Road, Schenectady, New York 12306-2014	3
New York State Department of Health	Howard A. Zucker, M.D., J.D., Commissioner	Corning Tower, Empire State Plaza, Albany, New York 12237	2
New York State Energy Research and Development Authority	Richard Kaufmann, Chair	17 Columbia Circle, Albany, New York 12203	2
New York State Department of Economic Development	Howard Zemsky, Commissioner	633 Third Avenue, Floor 37, New York, New York 10017	2
Town of Coeymans	Phillip A. Crandall, Supervisor	18 Russell Ave, Ravena, New York 12143	1
New York State Department of Agriculture and Markets	Richard Ball, Commissioner	10B Airline Drive, Albany, New York 12235	1
New York State Department of State	Rossana Rosado, Secretary of State	One Commerce Plaza, 99 Washington Avenue Albany, New York 12231-0001	1
Attorney General	Eric T. Schneiderman, Attorney General	The Capitol, Albany, New York 12224-0341	1
New York State Department of Transportation, Region 1	Sam Zhou, P.E., Regional Director	Executive Office, 50 Wolf Road, Suite 1s50, Albany, New York 12232	1
New York State Office of Parks, Recreation, and Historic Preservation	Regional Director	19 Roosevelt Drive, Saratoga Springs, New York 12866	1
RCS Community Library	Deborah Buhrke, Library Clerk	95 Main Street, Ravena, New York 12143	1
Bethlehem Public Library	Geoffrey Kirkpatrick, Director	451 Delaware Avenue, Delmar, New York 12054	1

Required Party	Contact	Address	Copies Sent
County Clerk Office	Bruce A. Hidley, County Clerk	16 Eagle Street, Albany, New York 12207-1077	1
Coeymans Town Clerk Office	Diane Millious, Town Clerk	18 Russel Avenue, Ravena, New York 12143	1

Attachment 2 – Affidavit and Proof of Publication

COLUMBIA GREENE MEDIA CORP
1 HUDSON CITY CTR STE 202
HUDSON, NY 12534
(518)828-1616

BILLING PERIOD	ADVERTISER/CLIENT NAME	
04/08/18 - 04/14/18	TETRA TECH	
TOTAL AMOUNT DUE	INVOICE NUMBER	TERMS OF PAYMENT
0.00	263985	DUE UPON RECEIPT

ADVERTISING INVOICE

PAGE #	BILLING DATE	BILLED ACCOUNT NUMBER
1	04/14/18	117363

BILLED ACCOUNT NAME AND ADDRESS

JACKIE BRUCE
TETRA TECH
BLDG. C SUITE 320
1200 SCOTTSVILLE RD
ROCHESTER NY 14624

REMITTANCE ADDRESS

JOHNSON NEWSPAPER CORPORATION
260 WASHINGTON ST
WATERTOWN NY 13601

PLEASE DETACH AND RETURN UPPER PORTION WITH YOUR REMITTANCE

DATE	NEWSPAPER REFERENCE	DESCRIPTION - OTHER COMMENTS / CHARGES	SAU SIZE BILLED UNITS	TIMES RUN RATE	GROSS AMOUNT	NET AMOUNT
	PUBLICATION:	CATSKILL DAILY MAIL - FULL RUN				
	AD CLASS:	LEGALS				
04/11	20405864	Hecate Energy Albany	3x0L	1		51.24
	04/11	1 LLC and Hecate En	366L			
		JACKIE				
		Affidavit Fee				5.00
		Ad Class Totals:	$56.24	366.000	line	
		Publication Totals:	$56.24			
	PUBLICATION:	HUDSON REGISTER STAR - FULL RUN				
	AD CLASS:	LEGALS				
04/11	20405864	Hecate Energy Albany	3x0L	1		87.84
	04/11	1 LLC and Hecate En	366L			
		JACKIE				
		Affidavit Fee				5.00
		Ad Class Totals:	$92.84	366.000	line	
		Publication Totals:	$92.84			
04/14	20405864	Applied Deposit 20405864				-149.08

sai™

TOTAL AMOUNT DUE
.00

A FINANCE CHARGE OF 1.5% PER MONTH, WHIS IS AN ANNUAL RATE OF 18% (MINIMUM $1.00) WILL BE ADDED TO ACCOUNTS OVER 28 DAYS.
*UNAPPLIED AMOUNTS ARE INCLUDED IN TOTAL AMOUNT DUE

COLUMBIA GREENE MEDIA CORP (518)828-1616

INVOICE NUMBER	ADVERTISER INFORMATION			
	BILLING PERIOD	BILLED ACCOUNT NUMBER		ADVERTISER / CLIENT NAME
263985	04/08/18 - 04/14/18	117363		TETRA TECH

COLUMBIA GREENE MEDIA CORPORATION
LEGAL ADVERTISEMENT AFFIDAVIT
STATE OF NEW YORK
GREENE AND COLUMBIA COUNTY CATSKILL DAILY MAIL
HUDSON REGISTER STAR

JACKIE BRUCE
TETRA TECH
BLDG. C SUITE 320
1200 SCOTTSVILLE RD
ROCHESTER NY 14624

REFERENCE: 117363
20405864 Hecate Energy Albany

Mary Rogers being duly sworn says that she is the billing clerk for COLUMBIA GREENE MEDIA, a corporation duly organized and existing under the laws of the State Of New York, and having its principal place of business in the City of Hudson New York, and that said corporation is the publisher of the HUDSON REGISTER STAR, a newspaper published in the City of Hudson, Columbia County and the State of New York, and is also publisher for the CATSKILL DAILY MAIL, a newspaper published in the City of Catskill, County of Greene and State of New York and that a LEGAL NOTICE, of which the annexed is a printed copy, has been published in said newspapers on the dates below:

Mary Rogers
Mary Rogers, Billing Clerk

PUBLISHED ON: 04/11

AD SPACE: 366 LINE
FILED ON: 04/14/18

Sworn to before me this
17th day of April 2018

Notary Public

TAMMI L. ULLRICH
Notary Public, State of New York
Reg. No. 01UL6096910
Qualified in Columbia County
Commission Expires August 11, 2019

Hecate Energy Albany 1 LLC and Hecate Energy Albany 2 LLC,
40-Megawatt Solar Photovoltaic Generation Project
Albany County, New York
NOTICE OF SUBMISSION OF PRELIMINARY SCOPING STATEMENT

Hecate Energy Albany 1 LLC and Hecate Energy Albany 2 LLC ("Hecate Albany" or "Co-Applicants") are seeking authority from the New York State Board on Electric Generation Siting and the Environment (the "Siting Board") to construct a 40-megawatt ("MW") solar photovoltaic electric generating facility (the "Project") in the Town of Coeymans, Albany County, New York, pursuant to Article 10 of the New York State Public Service Law. Pursuant to 16 NYCRR §§ 1000.5(d)-(e), Hecate Albany hereby provides notice that it will file a Preliminary Scoping Statement ("PSS") with the Siting Board on or about April 13, 2018. The PSS summarizes the proposed scope of studies that Hecate Albany will undertake, the results of which will form the basis of its Application to the Siting Board. In conjunction with the PSS filing, Hecate Albany will seek input from the public, interested agencies, and local municipalities on the scope and methodology of studies to be conducted pursuant to the PSS.

The Project components will include solar photovoltaic generating panel arrays in the Town of Coeymans connected by underground, and possibly overhead, collection lines that will generate electricity to be delivered into National Grid's electric transmission system via interconnections to two existing transmission lines that cross the Project site. The Project is proposed to be constructed on leased and/or purchased rural private land that is agricultural in nature.

The Project will safely generate enough clean, renewable electricity to power approximately 10,000 households. As a renewable resource, the Project will also avoid emissions and other impacts associated with traditional fossil-fueled generating facilities, and further the State Energy Plan's goal of generating 50% of all electricity consumed in the State with renewable resources and reducing greenhouse gas emissions by 40% by the year 2030.

The PSS will describe and/or identify aspects of the Project, including the following: the environmental setting of the Project area, the potential environmental and health impacts associated with construction and operation of the Project; proposed benefits of the Project; proposed studies (including pre-construction studies and post-construction monitoring); security; decommissioning; proposed measures to mitigate or minimize any potential environmental impacts; other required permits and authorizations; and other relevant information.

Hecate Albany anticipates that the Project will not have negative impacts on health, air, or water resources. Potential visual, wildlife, or agricultural impacts will be mitigated to the maximum extent practicable. Hecate Albany will study these and other potential impacts before submitting its Application.

With the PSS, Hecate Albany will also submit $14,000 in intervenor funding, 50% of which is reserved for municipal parties. Interested parties may apply for intervenor funding to be used to pay for expenses such as administrative, attorney, and/or consultant fees. A guide to applying for intervenor funding can be found on the New York State Department of Public Service's ("DPS") website at: goo.gl/avcprS.

Within 21 days after the PSS is filed, any person, agency, or municipality may submit comments on the PSS by serving such comments on the Co-Applicants, at the address provided below, and filing a copy with the Secretary to the Siting Board. Comments must reference Case 17-F-0617 and may be submitted in writing to Hon. Kathleen H. Burgess, Secretary to the Siting Board, New York State Public Service Commission, Agency Building 3, Albany, NY 12223-1350 or electronically to secretary@dps.ny.gov. Any interested person may also file a request with the Secretary to receive copies of all notices concerning the Project.

Within 21 days after the closing of this comment period, the Co-Applicants will prepare a summary of the material comments and their replies thereto, and file and serve the summary in the same manner as the Co-Applicants file and serve the PSS.

Not less than 22 days after the PSS is filed, an Administrative Law Judge ("ALJ") will hold a conference to, among other things, initiate the stipulation

process in which Hecate Albany and other parties attempt to negotiate and agree on the studies and other issues to be addressed in the Article 10 Application. The ALJ will also issue a notice of availability of pre-application intervenor funds, which will provide a schedule and instructions on how interested parties may apply for such funds. Requests for intervenor funds are due within 30 days of issuance of the notice. A pre-application meeting will also be convened to consider funding requests no less than 45 but no more than 60 days after filing of the PSS.
Hecate Albany will use the results of the studies it conducts to prepare the Application, which will be filed not less than 90 days after the PSS is filed. The Application will include a description of the Project, an evaluation of the environmental and health impacts, a summary of public involvement activities, a statement of why any local laws or ordinances should not be applied, electrical interconnection and system reliability studies, security and emergency plans, a statement demonstrating compliance with the most recent State Energy Plan, and other relevant information. The Application will also include such other information as required by the Siting Board's rules (16 NYCRR Part 1001) unless inapplicable.
The Siting Board will then determine whether the Application is compliant with filing requirements. Once it is deemed compliant the ALJ will schedule a public hearing and issue a notice that additional intervenor funds, in the amount of $40,000, will be available for parties participating in the Application phase. The ALJ will also schedule a pre-hearing conference to identify intervenors, award intervenor funds, identify issues for the hearing, and establish a case schedule. After the hearings, intervenors may submit briefs to the ALJ who will then issue a recommended decision, upon which the Siting Board will render its decision on whether to certify the Project. State law requires that the Siting Board must render a decision on the Application within 12 months of its determination that the Application is compliant with filing requirements.
Additional information on how to participate in Siting Board matters may be obtained by contacting Hecate Albany's project representative or the Siting Board Public Information Coordinator:
Hecate Albany Representative
Gabriel Wapner
621 W Randolph St.
Chicago, IL 60661
833-529-6597
contact@albanycountysolar.info
Siting Board Public Information Coordinator James Denn
NYS Department of Public Service
3 Empire State Plaza
Albany, NY 12223
518-474-7080
james.denn@dps.ny.gov
To find more information, please go to the Siting Board's website (www.dps.ny.gov/SitingBoard) or the Project website (https://www.albanycountysolar.info/), or call the Project's toll-free number: 833-529-6597.
Hard copies of the PSS will also be available at the following local document repositories:
" County Clerk Office, 16 Eagle Street, Albany, NY 12207-1077
" Coeymans Town Clerk Office, 18 Russell Avenue, Ravena, NY 12143
" RCS Community Library, 95 Main Street, Ravena, NY 12143
" Bethlehem Public Library, 451 Delaware Avenue, Delmar, NY 12054

Attachment 3 – Affidavit of Mailing

Case 17-F-0617

Application of Hecate Energy Albany 1 LLC and Hecate Energy Albany 2 LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 of the Public Service Law for Construction of a Solar Electric Generating Facility Located in the Town of Coeymans, Albany County.

AFFIDAVIT OF MAILING

I, Jackie Bruce of Tetra Tech, in Rochester, New York, caused the letter entitled 'Notice of Submission of Preliminary Scoping Statement', a copy of said letter which is attached, to be mailed to 118 addresses on the captioned project Master Stakeholder List. A copy of said Master Stakeholder List to which this letter was sent is attached hereto.

Jacqueline Bruce

Sworn to me before this 16 day of April 2018

Notary Public

JULIE J. HILL
Notary Public, State of New York
No. 01HI6097366
Qualified in Monroe County
Commission Expires Aug. 10, 2019

Hecate Energy Albany 1 LLC and Hecate Energy Albany 2 LLC, 40-Megawatt Solar Photovoltaic Generation Project
Albany County, New York

NOTICE OF SUBMISSION OF PRELIMINARY SCOPING STATEMENT

Hecate Energy Albany 1 LLC and Hecate Energy Albany 2 LLC ("Hecate Albany" or "Co-Applicants") are seeking authority from the New York State Board on Electric Generation Siting and the Environment (the "Siting Board") to construct a 40-megawatt ("MW") solar photovoltaic electric generating facility (the "Project") in the Town of Coeymans, Albany County, New York, pursuant to Article 10 of the New York State Public Service Law. Pursuant to 16 NYCRR §§ 1000.5(d)–(e), Hecate Albany hereby provides notice that it will file a Preliminary Scoping Statement ("PSS") with the Siting Board on or about April 13, 2018. The PSS summarizes the proposed scope of studies that Hecate Albany will undertake, the results of which will form the basis of its Application to the Siting Board. In conjunction with the PSS filing, Hecate Albany will seek input from the public, interested agencies, and local municipalities on the scope and methodology of studies to be conducted pursuant to the PSS.

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Within 21 days after the closing of this comment period, the Co-Applicants will prepare a summary of the material comments and their replies thereto, and file and serve the summary in the same manner as the Co-Applicants file and serve the PSS.

Not less than 22 days after the PSS is filed, an Administrative Law Judge ("ALJ") will hold a conference to, among other things, initiate the stipulation process in which Hecate Albany and other parties attempt to negotiate and agree on the studies and other issues to be addressed in the Article 10 Application. The ALJ will also issue a notice of availability of pre-application intervenor funds, which will provide a schedule and instructions on how interested parties may apply for such funds. Requests for intervenor funds are due within 30 days of issuance of the notice. A pre-application meeting will also be convened to consider funding requests no less than 45 but no more than 60 days after filing of the PSS.

Hecate Albany will use the results of the studies it conducts to prepare the Application, which will be filed not less than 90 days after the PSS is filed. The Application will include a description of the Project, an evaluation of the environmental and health impacts, a summary of public involvement activities, a statement of why any local laws or ordinances should not be applied, electrical interconnection and system reliability studies, security and emergency plans, a statement demonstrating compliance with the most recent State Energy Plan, and other relevant information. The Application will also include such other information as required by the Siting Board's rules (16 NYCRR Part 1001) unless inapplicable.

The Siting Board will then determine whether the Application is compliant with filing requirements. Once it is deemed compliant the ALJ will schedule a public hearing and issue a notice that additional intervenor funds, in the amount of $40,000, will be available for parties participating in the Application phase. The ALJ will also schedule a pre-hearing conference to identify intervenors, award intervenor funds, identify issues for the hearing, and establish a case schedule. After the hearings, intervenors may submit briefs to the ALJ who will then issue a recommended decision, upon which the Siting Board will render its decision on whether to certify the Project. State law requires that the Siting Board must render a decision on the Application within 12 months of its determination that the Application is compliant with filing requirements.

Additional information on how to participate in Siting Board matters may be obtained by contacting Hecate Albany's project representative or the Siting Board Public Information Coordinator:

<u>Hecate Albany Representative</u>
Gabriel Wapner
621 W Randolph St.
Chicago, IL 60661
833-529-6597
contact@albanycountysolar.info

<u>Siting Board Public Information Coordinator</u>
James Denn
NYS Department of Public Service
3 Empire State Plaza
Albany, NY 12223
518-474-7080
james.denn@dps.ny.gov

To find more information, please go to the Siting Board's website (www.dps.ny.gov/SitingBoard) or the Project website (https://www.albanycountysolar.info/), or call the Project's toll-free number: 833-529-6597.

Hard copies of the PSS will also be available at the following local document repositories:

- County Clerk Office, 16 Eagle Street, Albany, NY 12207-1077
- Coeymans Town Clerk Office, 18 Russell Avenue, Ravena, NY 12143
- RCS Community Library, 95 Main Street, Ravena, NY 12143
- Bethlehem Public Library, 451 Delaware Avenue, Delmar, NY 12054

Master List of Stakeholders

STATE AND FEDERAL AGENCIES

New York State Department of Agriculture and Markets
Richard Ball, Commissioner
10B Airline Drive, Albany, NY 12235
(585) 457-8876
info@agriculture.ny.gov

New York State Department of Agriculture and Markets
Matthew Brower, Environmental Analyst
10B Airline Drive, Albany, NY 12235
(585) 457-2851
matthew.brower@agriculture.ny.gov

NYSDEC
Basil Seggos, Commissioner
625 Broadway, Albany, NY 12233-1011
basil.seggos@dec.ny.gov

NYSDEC, Central Office
Daniel Whitehead, Director
Division of Environmental Permits, Major Project Management
625 Broadway, Albany, NY 12233-1750
(518) 402-9167
deppermitting@dec.ny.gov

NYSDEC, Region 4
Keith Goertz, Regional Director
1130 North Westott Road, Schenectady, NY 12306-2014
(518) 357-2068
R4Info@dec.ny.gov

NYS Energy Research and Development Authority
Alicia Barton, President
17 Columbia Circle, Albany, NY 12203
(518) 862-1090
info@nyserda.ny.gov

NYS Energy Research and Development Authority
Richard Kaufmann, Chair
17 Columbia Circle, Albany, NY 12203
(518) 862-1090
info@nyserda.ny.gov

NYS Office of General Services
RoAnn Destito, Commissioner
41st Floor, Corning Tower, Empire State Plaza, Albany, NY 13342
(518) 474-3899
RoAnn.Destito@ogs.ny.gov

New York State Department of Economic Development
Howard Zemsky, Commissioner
633 Third Avenue, Floor 37, New York, NY 10017 nys-nyc@esd.ny.gov

NYS Division of Homeland Security and Emergency Services
Jerome Hauer, Commissioner
1220 Washington Ave., State Office Campus, Building 7A, Suite 710, Albany, NY 12242
(518) 242-5000
website@dhses.ny.gov

New York State Office of Parks, Recreation, and Historic Preservation
Regional Director
19 Roosevelt Drive, Saratoga Springs, NY 12866
(518) 584-2535
Email not available

NYS Department of Public Service
James Denn, Public Information Officer
Empire State Plaza, Agency Building 3, Albany, NY 12223
(518) 474-7080
james.denn@dpds.ny.gov

NYS Department of Public Service
Lorna Gillings, Outreach Contact
Office of Consumer Services
3 Empire State Plaza, Agency Building 3, Albany, NY 12223
(800) 342-3377
lorna.gillings@dps.ny.gov

NYS Department of Public Service
Heather Behnke, Assistant Council
Empire State Plaza, Agency Building 3, Albany, NY 12223
(518) 474-5474
heather.behnke@dps.ny.gov

NYS Department of Public Service
Cassandra Partyka, Assistant Counsel
3 Empire State Plaza, Agency Building 3, Albany, NY 12223
(518) 474-0517
cassandra.partyka@dps.ny.gov

NYS Department of Public Service – Office of Electric, Gas and Water
Andrew Davis
3 Empire State Plaza, Agency Building 3, Albany, NY 12223
(518) 486-2885
andrewdavis@dps.state.ny.us

NYS Department of Transportation, Region 1
Sam Zhou, P.E., Regional Director
Executive Office
50 Wolf Road, Suite 1s50, Albany, NY 12232
(518) 457-3522
Email not available

NYS Thruway Authority
Bill Finch, Executive Director
Administrative Headquarters
200 Southern Blvd.
P.O. Box 189
Albany, NY 12201-0189
(518) 436-2700
Email not available

New York Independent System Operator
Michael Bemis, Board Chair
10 Krey Boulevard, Rensselaer, NY 12144
(518) 356-6060
stakeholderservices@nyiso.com

New York State Hudson River Valley Greenway Greenway Conservancy for the Hudson River Valley
Kevin M. Burke, Acting Chair
625 Broadway, 4th Floor, Albany, NY 12207
(518) 473-3835
hrvg@hudsongreenway.ny.gov

Empire State Development Corporation
Kenneth Tompkins, Mohawk Valley
Regional Director
207 Genesee Street Utica, NY 13501
(315) 793-2366
nys-mohawkval@esd.ny.gov

Stockbridge-Munsee Community Band of Mohican Nation
Shannon Holsey, Tribal Presidentg
N8476 MoHeConNuck Road, Bowler, WI 54416
(715) 793-4387
Shannon.holsey@mohican-nsn.gov

Saint Regis Mohawk Tribe
412 State Route 37
Akwesasne, NY 13655
communications@srmt-nsn.gov

US Senate
Kirsten E. Gillibrand, US Senator
Leo W. O'Brien Federal Office Building, 11A Clinton Avenue, Room 821, Albany, NY 12207
(518) 431-0120
invite@gillibrand.senate.gov

US Senate
Charles E. Schumer, US Senator
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Preliminary Scoping Statement

for the

Coeymans Solar Farm

proposed in

Albany County, New York

Case Number 17-F-0617

April 2018

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ACRONYMS/ABBREVIATIONS

Acronym/Abbreviation	Definition
%	percent
AC	alternating current
AADT	annual average daily traffic
ALIS	Accident Location Information System
amsl	above mean sea level
APE	Area of Potential Effects
ATV	all-terrain vehicle
BBA	Breeding Bird Atlas
BLM	United States Bureau of Land Management
BMP	Best Management Practices
CEII	Critical Energy Infrastructure Information
CES	Clean Energy Standards
CFR	Code of Federal Regulations
CGN	Columbia-Greene North
CO_2	carbon dioxide
Co-Applicants	Hecate Energy Albany 1 LLC and Hecate Energy Albany 2 LLC
CRIS	Cultural Resources Information System
CWA	Clean Water Act
CZMP	Coastal Zone Management Program
dBA	A-weighted decibels
DC	direct current
DPS	New York State Department of Public Service
dSLR	single lens reflex camera
ECL	Environmental Conservation Law
EIA	United States Energy Information Administration
EMF	electric and magnetic fields
ERP	Emergency Response Plan
ESA	Endangered Species Act
FAA	Federal Aviation Administration

Acronym/Abbreviation	Definition
Facility	Coeymans Solar Farm, a 40-megawatt photovoltaic solar energy generation facility
Facility Area	428-acre area within which the Coeymans Solar Farm is proposed
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
GIS	Geographic Information System
GPS	Global Positioning System
HDD	horizontal direct drilling
Hecate Albany	Hecate Energy Albany 1 LLC and Hecate Energy Albany 2 LLC
Hecate Energy	Hecate Energy, LLC
Hz	hertz
IPaC	Information for Planning and Consultation
ISO	International Organization for Standardization
kHz	kilohertz
Km	kilometer
kV	kilovolt
L_{90}	time-averaged residual sound level
L_{eq}	minimum measured equivalent sound level
LSZs	Landscape Similarity Zones
mCNR	modified Composite Noise Rating
MDS	map-documented structures
MVAR	mega-volt ampere reactive
MW	megawatt
MWh	megawatt-hour
NAIP	National Agriculture Imagery Program
NHPA	National Historic Preservation Act
NLCD	National Land Cover Database
NOI	Notice of Intent
NO_X	nitrogen oxides
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory

Acronym/Abbreviation	Definition
NYAC	New York Archaeological Council
NYCRR	New York Codes, Rules, and Regulations
NYISO	New York Independent System Operator
NYNHP	New York Natural Heritage Program
NYS	New York State
NYSDAM	New York State Department of Agriculture and Markets
NYSDEC	New York State Department of Environmental Conservation
NYSDHP	New York State Division for Historic Preservation
NYSDOS	New York State Department of State
NYSDOT	New York State Department of Transportation
NYSPSC	New York State Public Service Commission
NYSM	New York State Museum
O&M	operations and maintenance
OPRHP	Office of Parks, Recreation and Historic Preservation
OSHA	Occupational Safety and Health Administration
PE	Professional Engineer
PILOT	payment in lieu of taxes
PIP	Public Involvement Program
POI	point of interconnection with utility electric grid
PRISM	Partnerships for Regional Invasive Species Management
PSL	Public Service Law
PSS	Preliminary Scoping Statement
PV	photovoltaic
QA/QC	Quality Assurance and Control
ROW	right-of-way
SASS	Scenic Areas of Statewide Significance
SEQR	State Environmental Quality Review
SHPO	State Historic Preservation Office
SIS	Electric System Impact Study
Siting Board	New York State Board on Electric Generation Siting and the Environment
SO_2	sulfur dioxide

Acronym/Abbreviation	Definition
SPCC	Spill Prevention, Control and Countermeasure
SPDES	State Pollutant Discharge Elimination System
Study Area	2-mile radius from all Facility components
SWPPP	Stormwater Pollution Prevention Plan
USACE	United States Army Corps of Engineers
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USN	Unique Site Number
VIA	Visual Impact Assessment
VRM	Visual Resource Management System
WMA	Wildlife Management Area
WQC	Water Quality Certification

1.0 INTRODUCTION

According to the rules of the New York State Board on Electric Generation Siting and the Environment (Siting Board) (16 New York Codes, Rules, and Regulations [NYCRR] Part 1000), applicants proposing to submit an application to construct a major electric generating facility under Article 10 of the Public Service Law (PSL) must file a Preliminary Scoping Statement (PSS) at least 90 days prior to filing an application (16 NYCRR § 1000.5). The PSS shall contain the following, which are provided in this document as indicated:

(1) as much information as is reasonably available concerning the proposed facility, generally in the form (though in less detail) that it will appear in the application (see Sections 1 and 2);

(2) a preliminary scope of an environmental impact analysis containing a brief discussion, on the basis of reasonably available information, of the following items:

(i) a brief description of the proposed facility and its environmental setting (see Sections 2 and 3);

(ii) potentially significant adverse environmental and health impacts resulting from the construction and operation of the proposed facility including an identification of particular aspects of the environmental setting that may be affected, any material impacts or benefits identified in consultations by the public, affected agencies, and other stakeholders, and a responsive analysis by the Applicant as to those issues identified in consultations (see Section 4.0);

(iii) the extent and quality of information needed for the application to adequately address and evaluate each potentially significant adverse environmental and health impact, including existing and new information where required, and the methodologies and procedures for obtaining the new information (see Section 4.0);

(iv) for proposed wind-powered facilities, proposed or on-going studies during pre-construction activities and a proposed period of post-construction operations monitoring for potential impacts to avian and bat species (not applicable);

(v) a description of how the applicant proposes to avoid adverse impacts to the environment and health (see Section 4.0);

(vi) for those adverse environmental and health impacts that cannot be reasonably avoided, an identification of measures proposed to mitigate such impacts (see Section 4.0);

(vii) where it is proposed to use petroleum or other back-up fuel for generating electricity, a discussion and/or study of the sufficiency of the proposed on-site fuel storage capacity and supply (not applicable);

(viii) a description and evaluation of reasonable and available alternative locations for the proposed facility, including a description of the comparative advantages and disadvantages of the proposed and alternative locations, except that a private facility applicant may limit its description and evaluation of alternative locations to parcels owned by, or under option to, such private facility applicant or its affiliates (see Section 4.9);

(ix) If the proposed facility affects any land or water use or natural resource of the coastal area and federal authorization or funding is necessary, a preliminary analysis of the consistency of the proposed facility with the enforceable policies of the New York State coastal management program or, where the action is in an approved local waterfront revitalization program area, with the local program (not applicable);

(x) a statement of the reasons why the primary proposed location and source, taking into account the potentially significant and adverse environmental impacts, is best suited, among the alternatives, including a "no action" alternative, to promote public health and welfare, including the recreational and other concurrent uses that the site may serve, except that a private facility applicant may limit its description and evaluation of alternative locations to parcels owned by, or under option to, such private facility applicant or its affiliates and its description and evaluation of alternative sources to those that are reasonable alternatives to the proposed facility that are feasible considering the objectives and capabilities of the sponsor (see Section 4.9);

(xi) a preliminary identification of the demographic, economic and physical attributes of the community in which the facility is proposed to be located and in which any alternative location identified is located, and a preliminary environmental justice evaluation of significant and adverse disproportionate environmental

impacts of the proposed facility and any alternative facility identified that would result from construction and operation considering, among other things, the cumulative impact of existing sources of emissions of air pollutants and the projected emission of air pollutants from the proposed or alternative facility in a manner that is in accordance with any requirements for the contents of an Article 10 preliminary scoping statement contained in 6 NYCRR Part 487 promulgated published by the New York State Department of Environmental Conservation (NYSDEC) for the analysis of environmental justice issues (see Sections 3.11 and 4.28); and

(xii) an identification of any other material issues raised by the public and affected agencies during any consultation and the response of the applicant to those issues (see Section 4.2).

(3) an identification of all other state and federal permits, certifications, or other authorizations needed for construction, operation or maintenance of the proposed facility (see Sections 4.32 and 4.33);

(4) a list and description of all state laws and regulations issued thereunder applicable to the construction, operation or maintenance of the proposed facility and a preliminary statement demonstrating an ability to comply (see Section 4.32);

(5) a list and description of all local laws, and regulations issued thereunder, applicable to the construction, operation, or maintenance of the proposed facility and a statement either providing a preliminary assessment of an ability to comply or indicating specific provisions that the applicant will be requesting the New York State Board on Electric Generation Siting and the Environment (the Siting Board) to elect not to apply, in whole or in part, and a preliminary explanation as to why the Siting Board should elect not to apply the specific provisions as unreasonably burdensome in view of the existing technology or the needs of or costs to ratepayers whether located inside or outside of such municipality (see Section 4.31);

(6) a description of the applicant, its formation, status, structure, holdings, affiliate relationships, powers (including whether it has or will seek to obtain the power of eminent domain, either directly or indirectly), franchises and consents (see Section 2.1);

(7) a description of the applicant's property rights and interests or those it proposes to acquire to all lands of the proposed facility and any private or public lands or private or

public streets, highways or rights-of-way crossed by any interconnections necessary to serve the facility such as, but not limited to, electric lines, gas lines, water supply lines, waste water or other sewage treatment facilities, communications and relay facilities, access roads, rail facilities, or steam lines (see Section 2.1); and

(8) any other information that the Applicant may deem to be relevant.

Where applicable, sections throughout the Article 10 application will include a table summarizing issues and concerns raised by stakeholders throughout the process to date, referenced as "Other Material Issues Raised by the Public and Affected Agencies."

Hecate Energy Albany 1 LLC and Hecate Energy Albany 2 LLC, (herein collectively referred to as Hecate Albany or the Co-Applicants), each a subsidiary of Hecate Energy, LLC (Hecate Energy), are the Co-Applicants in this Article 10 application. Hecate Albany is proposing to construct the Coeymans Solar Farm, a 40-megawatt (MW) photovoltaic (PV) solar energy generation facility in the Town of Coeymans, Albany County, New York (the Facility) (Figure 1 – Facility Location).

The Facility is expected to have two, approximately 20-MW off-take agreements with potential purchasers of its energy and/or renewable energy credits, as well as potentially two financing structures. Therefore, Hecate Albany believes at this time it would be most efficient to propose in the Article 10 application that two sets of certificate conditions be developed as part of the requested Article 10 certification: one set applicable to each applicant, although the certificate conditions may be identical.

Since all the features of the Facility will be located in the same general Facility Area, share certain infrastructure, and be assessed for environmental impacts and benefits as a whole, it should, therefore, be considered under a single Article 10 proceeding. Hecate Albany will work with the state agency staffs and other appropriate stakeholders to ensure the proposed Facility is appropriately assessed as a whole, while recognizing the need for separate certificate conditions.

2.0 PROJECT DESCRIPTION

2.1 DESCRIPTION OF THE APPLICANT AND THEIR PROPERTY RIGHTS AND INTERESTS

Hecate Albany is a wholly owned subsidiary of Hecate Energy. Headquartered in Chicago, Illinois, with offices in California, Connecticut, Ohio, and Tennessee, Hecate Energy is a developer of solar power plants, wind power plants, natural gas-fired power plants, and energy storage solutions. Founded in 2012 by a team of industry veterans who have worked together for more than 20 years, Hecate Energy's team members have developed thousands of MWs of solar, wind, natural gas and energy storage projects, including several projects in New York and the northeastern United States.

Hecate Energy has over 6,000 MW of power plants under development, including natural gas projects in Oregon and Pennsylvania, solar power plants in California, Florida, Georgia, Maryland, New York, Ohio, Rhode Island, Texas, and Virginia, and energy storage projects in Ontario and California. Hecate Energy has developed power projects in California, Florida, Georgia, Maryland, Massachusetts, Rhode Island, Texas, and Virginia that are currently operating. In addition, Hecate Energy has an international presence, including projects in Tanzania and Jordan.

In the past five years, Hecate Energy has been awarded over 400 MW of solar Power Purchase Agreements by several investor-owned and municipal utilities including Eversource, Georgia Power, Jacksonville Electric Authority, the Los Angeles Department of Water & Power, National Grid, Old Dominion Electric Cooperative, and United Illuminating. Cities including Palo Alto, California and Houston, Texas have also selected Hecate Energy as their solar energy provider. In addition, organizations such as Johns Hopkins University, the United States Postal Service, and the Port of Los Angeles have selected Hecate Energy to provide their solar power solutions.

Property rights and interests are identified in Section 4.13, which include a description of rights and interests acquired or proposed to be acquired, ownership in fee, leased private land, and proposed rights-of-way (ROWs).

2.2 PROPOSED FACILITY

The lands that are being evaluated for potential solar energy development are located in the Town of Coeymans, Albany County, New York. The Facility, proposed within a general single area between Routes 9W and 101 totaling approximately 428 acres (the Facility Area) (Figure 2 – Facility Area), will consist of solar arrays, each parcel sharing some Facility features including site

roads and the electrical interconnection to the utility grid. The actual Facility footprint will occupy less than the total 428-acre Facility Area parcels (Figure 3 - Layout). The Co-Applicants will lease or purchase land from private landowners. Additional land agreements will not be needed for interconnection because interconnection facilities will be built on the lands that have been secured.

A critical factor for siting a solar energy facility is finding a transmission line with existing capacity to export the power from the facility to the utility grid system without prohibitive cost or unacceptable environmental impacts. The points of interconnection (POIs) with the electric grid are planned to be on existing National Grid 115-kilovolt (kV) transmission lines that cross the site. The transmission lines, owned and operated by National Grid, bisect the southern portion of the Facility Area. A new substation is proposed within the Facility Area in order to interconnect the Facility with the existing 115-kV transmission lines (Figure 2). Existing aboveground transmission lines traverse the area in proximity to the proposed Facility Area in a northwest-southeast orientation. Other important siting factors include the availability of open and appropriately oriented land, willing land lessors or sellers, and minimization of impacts on sensitive wildlife habitat. The Co-Applicants have conducted preliminary environmental screenings that are discussed in Section 3.

The Facility will use the same type of PV panels installed on over one million homes in the United States. Solar equipment is a proven, safe technology in applications such as ground-mounted installations in fields, fixed rooftop installation on homes, schools, and businesses, as well as canopy installation in carport areas. The PV panels for the proposed Facility will be ground-mounted on a low-profile racking system that will have a small post footprint, typically consisting of small I-beam posts driven into the ground. The Facility will consist of the following components:

- A solar field of PV panels producing direct current (DC) electricity mounted on fixed-tilt racking structures or single-axis tracking structures that will follow the sun throughout the day;
- Inverters placed throughout the Facility (internal to the panel arrays) to convert DC electricity to alternating current (AC) electricity;
- A medium voltage cable collection system that will aggregate the AC output from the inverters;
- An on-site substation where the Facility's electrical output voltage will be combined and increased to the transmission line voltage of 115 kV via step-up transformers and connected to the existing on-site utility transmission lines;

- Internal infrastructure including permanent access roads and fencing,
    - Access roads will be approximately 15 to 20 feet wide;
    - Fencing will be approximately 6 feet and 8 feet high; and
- Temporary laydown areas for equipment staging during construction.

Public roads will be used for construction access and general access during Facility operation. It is not anticipated that any improvements to public road intersections or the addition of turnarounds will be required.

The Co-Applicants began developing the proposed 40 MW AC Facility with a vision of bringing large-scale solar power to New York State. The proposed Facility is consistent with the New York State Public Service Commission's (NYSPSC's) proceeding implementing a Clean Energy Standard (CES), which supports the development of clean energy and renewable resources in New York State. In August 2016, Hecate Energy filed its first application with the New York Independent System Operator (NYISO), operator of New York's transmission system, for interconnection of 20 MW of the Facility's 40 MW into the electrical grid. A second application was filed with NYISO in January 2017 for interconnection of the Facility's remaining 20 MW. Both applications are now going through System Impact Studies. A preliminary Facility schedule is contained as Exhibit C in the Public Involvement Program (PIP) Plan.

The Facility will have a nameplate capacity of approximately 40 MW (AC), and is expected to generate approximately 73,000 megawatt-hours (MWh) of energy annually. This will be enough electricity to meet the average annual consumption of over 10,000 New York households, based on average annual electric consumption of 7.2 MWh for New York State (United States Energy Information Administrative [EIA] 2015).

The proposed Facility will have positive impacts on socioeconomics in the area through local employment and service opportunities, specifically by generating temporary construction employment, a significant amount of which is expected to be drawn from Albany County and the regional labor market. Hecate Energy's contracting experience has led to a preference for local hiring, and it anticipates holding a local job fair as the Facility enters the construction phase to support that objective. Local construction employment will primarily benefit those in the construction trades, including equipment operators, truck drivers, laborers, and electricians. It is anticipated that over 200 construction workers will be employed during peak construction. Once in operation, the Facility will require regular maintenance and inspections, employing several workers plus additional support from local service providers to maintain the Facility Area and associated systems. Facility operation and maintenance activities will generate several hundred

thousand dollars of annual fees, some of which will be local part-time employment and contracting service opportunities for electricians, operations managers, laborers, fencing contractors, and landscaping maintenance crews. The Facility will also result in increased revenues to county and local municipality tax bases (payment in lieu of taxes [PILOT] negotiations will begin shortly), purchase of local supplies and goods, and lease revenues to participating landowners.

Through deliberate site selection followed by careful planning and design, and due to the environmentally benign nature of the technology, the Facility will have minimal impacts on the surrounding community. Solar energy facilities have no direct air or wastewater emissions, are very quiet, and generate no vibration. The PV panels proposed to be used for the Facility have a low height profile. Setbacks, fencing, and landscape buffering allow solar energy projects to have minimal, ground-level visual impacts on the community and natural setting of the area.

3.0 ENVIRONMENTAL SETTING

The Siting Board's regulations define the Study Area to be used for analysis of major electric generating facilities as "an area generally related to the nature of the technology and the setting of the proposed site" (16 NYCRR § 1000.2(ar)). Unlike a wind power project that contains wind turbines that may be 500 feet or more in height and which are visible from a relatively large surrounding area (e.g., 5 miles or more), a solar energy facility lacks similar prominently visible components. The tallest components of the generating portion of the proposed Facility will be the PV panels and inverter equipment, which have a relatively low profile, and are not expected to be more than 10 feet above grade. The topography of the area does not provide high vantage points with unobstructed views of the site. The nature of the site and technology is such that visibility is anticipated to be relatively limited to those areas located adjacent or very close to the Facility. Each section of the Facility arrays and equipment will be surrounded by fencing.

It is important to note that, with the exception of some on-site roads and relatively small areas of inverters and substation equipment, most of the Facility Area will not create impervious surface, but rather will allow rainwater to fall to the ground through gaps between each row of panels. In addition, the Facility will not generate air emissions of any type and will not generate significant noise.

Therefore, due to the nature of the technology and the setting specific to this proposed Facility, the Co-Applicants propose to establish a 2-mile radius Study Area from (and including) all Facility components, which includes the host Town of Coeymans. Figure 4 depicts the 2-mile radius Study Area extending from the Facility Area. Municipalities within this Study Area include the Towns of Bethlehem and Coeymans, the northern extent of the Village of Ravena, and surrounding unincorporated areas, all of which lie within Albany County. The environmental setting of the Facility Area has been investigated for this PSS, and where appropriate, the environmental setting of the overall Study Area has also been investigated.

3.1 LAND USE

The Facility will be located in the Town of Coeymans, which is situated west of the Hudson River, approximately 15 miles south of the City of Albany. The Town of Coeymans and the surrounding area includes a mix of industrial, agricultural, rural residential, and sparsely forested areas. The region offers numerous opportunities for recreational activities including, for example, hiking, picnicking, boating, fishing, swimming, wildlife watching, and summer activities at neighborhood parks, country clubs, and the Louise E. Keir State Wildlife Management Area.

The Facility Area is located in an upland area approximately 2 miles from the western bank of the Hudson River. The Facility is sited in an industrial and agricultural mixed area characterized by rolling topography, with gently sloped areas transected by small streams and/or wetlands in the low-lying areas between elevated landforms. The Ravena-Coeymans-Selkirk High School is located approximately 0.3 miles south of the Facility Area. The Lafarge Ravena Cement Plant, located approximately 0.6 miles southeast of the Facility Area, and the Lafarge and Callanan quarries, located approximately 0.25 miles west of the Facility Area, are dominant features in the surrounding area. The Lafarge Ravena Cement Plant's stack is 250 feet tall and is the dominant visual feature in the area. Other major industries in the vicinity of the Facility Area include Oldcastle Precast, a manufacturer of precast concrete pipe and building products, located approximately 0.5 miles to the northwest, and Callanan's Industries, a ready-mix concrete and bituminous asphalt distributer, located approximately 0.75 miles to the northwest. See Section 4.4 for more details regarding land use.

3.2 CULTURAL RESOURCES

Cultural resources associated with the Facility and surrounding area are related to early Euro-American settlement, land clearing, and agricultural activities such as logging, plowing, disking, and planting. There are no known archaeological sites or historic properties identified within the Facility Area. Two previously identified archaeological sites are within approximately 1 mile of the Facility Area. There are two previously identified historic resources within approximately 1 mile of the Facility Area. See Section 4.20 for more details regarding cultural resources.

3.3 GEOLOGY, SEISMOLOGY, AND SOILS

The Facility will be located entirely within Albany County, which is topographically diverse, with the Helderberg Mountains to the west and the Hudson Valley to the east, characterized by very low relief, rocky ridges, and dissected drainages caused by glacial deposits. The Facility Area, like much of the region along the Hudson River, is part of the Hudson-Mohawk Lowlands physiographic region. The average elevation of the Hudson-Mohawk Lowlands is 300 feet above mean sea level (amsl) and gradually increases to approximately 880 feet amsl at its western edge (United States Department of Agriculture [USDA] 1992). The Facility Area is located in a transitional area between the Helderberg Mountains and the Hudson Valley and is bounded to the west by the sharp rise of the Helderberg Escarpment. The Facility Area slopes gently to the south and east and is composed of low rolling hills interspersed with nearly flat fields. Elevations within the Facility Area range between 89 feet and 249 feet amsl.

The bedrock geology of the Facility Area is part of the Normanskill Formation, which is heavily folded and faulted and forms bedrock ridges. Bedrock may be exposed within the Facility Area along these ridges and consists of Ordovician slate, shale, greywacke, and chert. In lower areas, bedrock may be greater than 5 feet below ground surface (USDA 1992).

The Facility Area is dominated by Hudson-Rhinebeck soils, which are formed in glacial till and found on dissected lake plains. These soils are nearly level to steep, moderately well drained to somewhat poorly drained, fine textured, and very deep. Eight soils from six different soil series are present within the Facility Area, representing a variety of landforms, textures, and drainages, including flood plains and rock outcrops (USDA 1992). See Section 4.21 for more details regarding geology, seismology, and soils.

3.4 WILDLIFE

The Facility Area is dominated by agricultural fields with intermittent wooded hedgerows. The agricultural portions of the Facility Area (which is predominantly where the Facility will be sited) provide habitat for wildlife species associated with open fields and grasslands. The undeveloped wooded areas, which include stream and wetland features, provide habitats that may contribute to supporting diverse wildlife communities in the area. Portions of the Study Area are also dominated by heavy industry.

The United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) tool was used to complete a search for federally listed threatened and endangered species potentially located in the vicinity of the Facility Area. The IPaC tool produces general location reports for the potential presence of threatened and endangered birds, flowering plants, insects, mammals, and reptiles. The IPaC Report did not identify any critical habitats, but identifies the Indiana bat (*Myotis sodalis*) and the northern long-eared bat (*Myotis septentrionalis*) as potentially present within the Facility Area (USFWS 2018). These species are common within this part of New York, and winter in hibernacula such as caves and mines, and have summer habitat that utilizes wooded areas throughout the state. The wooded riparian areas found in the Facility Area potentially provide favorable summer roosting habitat.

The Facility Area was also reviewed for state-mapped rare species and significant natural communities through the New York Natural Heritage Program (NYNHP) database. Mapped rare species habitat potentially occurs to the northwest of the Facility Area. Several plants and one insect (a dragonfly, the Russet-tipped Clubtail [*Stylurus plagiatus*]) were listed. It would be expected that this species is linked to stream habitats. Potential calcareous cliff community habitat

also extends onto the Facility Area, and certain protected plant species may be associated with this habitat. This habitat type appears to be common within the Study Area, as a second such resource is documented farther west.

The NYNHP database also indicated that the eastern small-footed bat (*Myotis leibii*) has been documented within 0.5 miles of the Facility Area. In New York, eastern small-footed bats winter in caves and mines, and openings deep within rock crevices in outcrops. Several studies in the northeast and southeast portions of the state have found that eastern small-footed bats roost and form maternity colonies in fractures in rock ledges and talus areas, neither of which are found within the Facility Area. It is not anticipated that operation of the Facility will have any direct or indirect impacts on eastern small-footed bats.

The Facility Area is located in the Atlantic Flyway migratory bird route and the habitats within this route provide stop-over points for migratory species as well as breeding habitat. The IPaC Report indicated that 17 migratory bird species may be found within the county associated with the Facility Area (USFWS 2018). As most of the Facility Area consists of open, agricultural fields, the use of the Facility Area by large mammals and big game species is generally precluded, with the exception of white-tailed deer (*Odocoileus virginianus*), which is common in the surrounding area.

According to the NYSDEC, grasslands have become one of the most important and imperiled habitats across New York State. Open grasslands, which occur most often in areas that have been cleared for agriculture, provide habitat to numerous grassland-breeding bird species including state-endangered short-eared owl (*Asio flammeus*), and state-threatened northern harrier (*Circus cyaneus*), upland sandpiper (*Bartramia longicauda*), sedge wren (*Cistothorus platensis*), and henslow's sparrow (*Ammodramus henslowii*) (NYSDEC 2018a).

Table 3.4-1 lists state and federal listed species that may be present within the Facility Area based on review of available databases and agency consultations.

Table 3.4-1 State and Federal Listed Species Documented in the Vicinity of the Facility Area

Common Name	Scientific Name	Status
Indiana bat	*Myotis sodalis*	Federal and State Endangered
Northern Long-eared bat	*Myotis septentrionalis*	Federal Threatened
Eastern Small-footed bat	*Myotis leibii*	State Special Concern

See Section 4.22 for more details regarding "Terrestrial Ecology and Wetlands".

3.5 WETLANDS

Approximately 1,100 acres of NYSDEC-mapped wetlands are located in the Town of Coeymans, primarily located along the three major surface waters in the Town: the Hudson River, Coeymans Creek and Hannacroix Creek. A number of NYSDEC-mapped wetlands are also located west of the Hudson River shoreline throughout the town.

No National Wetland Inventory (NWI) or NYSDEC-mapped wetlands are located within the Facility Area, with the exception of a very small (approximately 0.3-acre) area of NWI-mapped freshwater emergent wetland located in the northern portion of the Facility Area within the agricultural fields. In addition, no NYSDEC-mapped wetlands are located within 500 feet of the Facility Area. See Section 4.22 for more details regarding terrestrial ecology and wetlands.

3.6 AGRICULTURAL RESOURCES

Agriculture is a significant contributor to Albany County's overall economy. Farming has decreased in the county over the past few decades, which stimulated the need for the Albany County Agricultural and Farmland Protection Plan, adopted in 2004. The most important agricultural products in the region are beef, nursery and greenhouse crops, dairy, vegetables, sweet corn, and melons.

The entire Facility Area is within an Albany County Agricultural District, with portions of the Facility Area in active agricultural production. Farmland within the Facility Area consists of a combination of cultivated hay and pasture fields. See Section 4.4 for more details regarding agricultural resources.

3.7 NOISE AND VIBRATION

The Facility Area and immediate vicinity is rural and can be characterized as consisting mostly of industrial and agricultural mixed uses with scattered residential properties. Residential properties are located to the east of the Facility Area on Kruger Road, Miller Road, New York State (NYS) Route 9W, and Kinley Road. The closest sensitive receptor, a residence, is located on Kinley Road, within 50 feet southeast of the Facility Area. The owner of this property has optioned a portion of their land to the Co-Applicants. There are also scattered residences along County Route 101, including one rental residence owned by same owner providing the land to the Project, the closest of which is within 50 feet of the Facility Area. See Section 4.19 for more details regarding noise and vibration.

3.8 WATER RESOURCES AND AQUATIC ECOLOGY

No known sole-source aquifers occur within the Facility Area or its vicinity (United States Environmental Protection Agency [USEPA] 2017). The east and west portions of the Facility Area are located within a NYSDEC principal aquifer, which is known to be highly productive or whose geology suggests abundant potential water supply, but which is not intensively used as sources of water at the present time (NYSDEC 2018b).

Four surface water tributaries exist within the Facility Area. Moser Brook, a tributary to Coeymans Creek, and a smaller unnamed tributary are located in the southeastern corner of the Facility Area, traversing from southwest to northeast. Two unnamed tributaries to Coeymans Creek are mapped in the northern and central portions of the Facility Area. All tributaries flow to join Coeymans Creek, located east of the Facility Area.

None of the waterbodies extending through the Facility Area are mapped by the Federal Emergency Management Agency (FEMA) as having 100-year floodplains. Tributaries confluence off-site to the east, and mapped floodplains are located along Coeymans Creek and near portions of its tributaries.

See Section 4.23 for more details regarding water resources and aquatic ecology.

3.9 VISUAL

The Facility Area is located approximately 2 miles west of the Hudson River. Terrain to the east of the Facility Area to the river is relatively flat. There is a ridge of higher terrain; however, immediately to the west (where elevations rise from approximately 170 feet to 500 feet amsl within a distance of approximately 800 feet from the Facility Area's closest location, and rises to over 1,000 feet amsl within approximately 3 miles).

Potential sensitive receptors within the Facility Area include the Ravena-Coeymans-Selkirk Regional High School, located approximately 1,500 feet south of the Facility Area on NYS Route 9W. Open fields and an area of wooded vegetation provide natural screening between the school and the Facility Area. As stated in section 3.7, the closest sensitive receptor, a residence, is located on Kinley Road, within 50 feet from the Facility Area to the southeast; limited natural visual screening exists for residential properties located to the southeast. For the scattered residences located along County Route 101, the closest of which is within 50 feet of the Facility Area, areas of natural screening exist in the form of wooded vegetation for some residences. See Section 4.24 for more details regarding visual characteristics.

3.10 TRANSPORTATION

The Facility Area is located between County Route 101 to the west and NYS Route 9W to the east. A portion of the Facility Area is bounded by County Route 101. Local roads in the vicinity of the Facility Area include Kruger Road and Kinley Road, located to the east.

Facility equipment will likely be delivered from the nearby major highways, Interstate 87 and Interstate 90. State, County, and local roads likely to be used during construction include NYS Route 9W, State Route 396, and County Route 101. Access to the Facility Area will primarily be from County Route 101 using a mildly sloped driveway that connects with existing farm access roads. This driveway also provides access to the multi-family residence within the Facility Area and ancillary farm structures. See Section 4.25 for more details regarding "Effect on Transportation".

3.11 DEMOGRAPHIC AND ECONOMIC ATTRIBUTES OF THE COMMUNITY

The estimated 2010 population of the Town of Coeymans was 7,418. The Village of Ravena and Town of Bethlehem (located within the Study Area) contained approximately 3,268 and 33,656 people as of 2010, respectively (United States Census Bureau [USCB] 2010).

Estimated 2012-2016 total housing units in the Town of Coeymans, Village of Ravena, and Town of Bethlehem were 3,383; 1,516; and 14,401, respectively. Estimated 2012-2016 median household income incomes in the Town of Coeymans, Village of Ravena, and Town of Bethlehem were $53,510; $48,346; and $92,708, respectively (USCB 2010). See Section 4.27 for more details regarding demographic and economic attributes of the community.

4.0 ENVIRONMENTAL ANALYSIS

This section addresses applicable requirements of Section 1000.5(l)(2) of the Article 10 regulations that require a preliminary scope of an environmental impact analysis to be included in the Article 10 application. The PSS section numbers below have been formatted so as to correspond with the applicable Exhibit of the Article 10 regulations (e.g., Section 4.11 Preliminary Design Drawings corresponds with Section 1001.11 Exhibit 11: Preliminary Design Drawings of the Article 10 regulations).

4.1 GENERAL REQUIREMENTS - EXHIBIT 1

Hecate Energy is a developer of solar power plants, wind-power plants, natural gas-fired power plants, and energy storage solutions. Headquartered in Chicago, Illinois, Hecate Energy's team members have developed thousands of MWs of solar, wind, and natural-gas-fired electric generating projects and energy storage solutions, including several projects in New York. For more information, visit http://www.hecateenergy.com/, or email Solutions@HecateEnergy.com.

The Facility website can be found at https://www.albanycountysolar.info/.

The Coeymans Solar Project Team, Gabriel Wapner, Philip Mooney, and Jared Wren, may be reached at:

621 W Randolph St.

Chicago, IL 60661

Call toll-free: (833) 529-6597

Email: contact@albanycountysolar.info

Hecate Albany is composed of Hecate Energy Albany 1 LLC and Hecate Energy Albany 2 LLC, which are wholly owned subsidiaries of Hecate Energy, LLC. Their Principal Officer is Chris Bullinger.

The Application will provide agent contact information if the Co-Applicants desire service of documents or other correspondence on an agent.

The Facility will be co-owned by Hecate Energy Albany 1 LLC and Hecate Energy Albany 2 LLC, which are wholly owned subsidiaries of Hecate Energy.

Exhibit 1 of the Application will follow the requirements outlined in Subsections (a) through (f) of Section 1001.1 of the Article 10 regulations, as follows.

Exhibit 1 will contain:

- The following information on the Co-Applicants:
  - name, address, telephone number, facsimile number, and e-mail address of the Co-Applicants;
  - the address of a website established by the Co-Applicants to disseminate information to the public regarding the application;
  - the name, address, telephone number, facsimile number, and e-mail address of a person provided by the Co-Applicants that the public may contact for more information regarding the application;
  - Hecate Albany is composed of Hecate Energy Albany 1 LLC and Hecate Energy Albany 2 LLC, which are wholly owned subsidiaries of Hecate Energy, LLC. Contact information for Hecate Energy, LLC's Principal Officer will be provided;
  - the name, business address, telephone number, facsimile number, and e-mail address of the Co-Applicants' agents, if desired for service purposes;
  - a brief explanation of the type of business entity that the Co-Applicants are, including its date and location of formation and the name and address of any parent entities; and
  - if the facility is to be owned by a corporation, a certified copy of the charter of such corporation; if the facility is not to be owned by a corporation, a copy of the certificate or other documents of formation.

4.2 OVERVIEW AND SUMMARY OF PUBLIC INVOLVEMENT – EXHIBIT 2

4.2.1 Overview

A brief description of the proposed Facility, interconnections and related Facility components is provided in Section 2.2.

The Application will contain a complete analysis of all exhibits required under 16 NYCRR Part 1001 (Content of an Application) except the following that do not apply to the proposed Facility:

- Exhibit 6: Wind Power Facilities
- Exhibit 7: Natural Gas Power Facilities
- Exhibit 30: Nuclear Facilities
- Exhibit 36: Gas Interconnection
- Exhibit 37: Back-up Fuel

- Exhibit 38: Water Interconnection
- Exhibit 39: Wastewater Interconnection
- Exhibit 41: Applications to Modify or Build Adjacent

An overview of the required content and associated sections in this PSS is provided in Section 1. A brief analysis of the compliance of this PSS with the requirements of 1000.5(l) is provided in Section 5.

4.2.2 Extent and Quality of Information Required

The initial draft of the PIP Plan was submitted to the Siting Board on October 13, 2017, comments on the PIP Plan were received from the Department of Public Service (DPS) on November 13, 2017, and the Co-Applicants filed a revised PIP Plan on December 12, 2017. Before the proposed PIP Plan was filed, Hecate Albany representatives met with local officials to discuss the proposed Facility (see Appendix A for a meeting log).

Hecate Albany values its relationships with local stakeholders. Before undertaking necessary approval processes for development of any project, public outreach to engage interested parties is conducted. Through such public outreach activities, Hecate Albany has introduced the Facility to the local community and other interested parties to understand and address stakeholder concerns, interests and recommendations.

The PIP Plan identified stakeholders and other interested parties in Exhibit A – Master List of Stakeholders. An updated stakeholder list, including host and adjacent landowners and parties identified through the Co-Applicants' outreach efforts is provided as Appendix B. The Co-Applicants have initiated consultations, and the summary of the meetings/consultations held to date are in the Meeting Log, which is presented in Appendix A of this PSS. The Meeting Log will continue to be updated and filed quarterly on the DPS website throughout the PSS and Article 10 Application processes.

To date, the Co-Applicants have conducted one open-house style meeting in the Town of Coeymans on February 20, 2018, at the Coeymans Town Hall. Notice of the public meeting was mailed to approximately 5,000 stakeholders and residents and published in two local newspapers. A second open house is planned to be held in the Town of Coeymans following the submission of the Application.

At the February open house, the Co-Applicants provided information about the Facility, including a series of informational poster boards and maps of the Facility. The Co-Applicants also presented an overview of the Article 10 process, and provided various technical information related to

construction, environmental studies and PV panel technology. Fact sheets regarding the proposed Facility and the Article 10 process were also provided to attendees.

In addition to the open house meetings, the Co-Applicants have a Facility-specific website (https://www.albanycountysolar.info/), an email address (contact@albanycountysolar.info) and a toll-free number (833-529-6597) to provide any questions or comments. The Co-Applicants have provided paper copies of the revised PIP Plan and fact sheets presented at the open house at the following document repositories:

- County Clerk Office, 16 Eagle Street, Albany, NY 12207-1077
- Coeymans Town Clerk Office, 18 Russell Avenue, Ravena, NY 12143
- RCS Community Library, 95 Main Street, Ravena, NY 12143
- Bethlehem Public Library, 451 Delaware Avenue, Delmar, NY 12054

During the time before the submission of the Application, the Co-Applicants intend to continue stakeholder outreach. No less than three days prior to the submission of this PSS, the Co-Applicants conducted a mailing to the identified stakeholders to inform them about, and provide a summary of, the PSS, invite comments, and notify the stakeholders of the comment period. The Co-Applicants will also provide notice in the local newspapers identified in the PIP Plan (in this case, the Register Star and Daily Mail). The notice will describe the Facility and invite comments on the PSS. The Co-Applicants will continue to attend municipal meetings and will hold an open house after submitting the Application. Finally, the Co-Applicants will also attempt to identify additional community events in which it will participate. Outreach efforts will be tracked in the meeting logs and updated each quarter.

The Co-Applicants will continue to engage stakeholders following submission of the Article 10 Application. A summary of post-application PIP activities will be included in the Article 10 Application. It is anticipated that the Co-Applicants will continue to attend applicable Town of Coeymans board meetings. In addition, the Co-Applicants will continue to meet with other local public stakeholders as appropriate.

The PIP activities discussed above will continue to be tracked and filed quarterly in the PIP Plan Tracking Report. The Co-Applicants will respond to applicable suggestions and comments through a response to the commenter and will summarize the response in the quarterly tracking report.

4.2.3 Other Material Issues Raised by the Public and Affected Agencies

The Co-Applicants have received various comments from stakeholders through the public outreach efforts to date. Comments received are summarized by topic throughout this PSS in the applicable sections.

Hecate Albany received comments regarding public involvement, as summarized in Table 4.2-1.

Table 4.2-1: Comments and Responses Regarding Public Involvement

Date	Commenter	Issue/Comment Summary	Response
2/20/2018	Open House Attendee	Website – not that informative	Hecate Albany has added more information to the website and uploaded all documents provided at the open house. Hecate Albany will continue to update the website.
2/20/2018	Open House Attendee	Website – not found during an internet search (Google).	This has been resolved, and the Facility's website is now accessible through an internet search.
2/20/2018	Open House Attendee	Mailings – resident addresses need to be updated with 'County Route 101' instead of 'State Route 101'.	This has been corrected for future communications.
2/20/2018	Open House Attendee	Mailings – an environmental group has been established in the Town of Coeymans that should be added to the Master List of Stakeholders. The name of the environmental group was not known.	Should a representative from this organization contact Hecate Albany, it will be added to the Master List of Stakeholders and included on future communications.

Date	Commenter	Issue/Comment Summary	Response
2/20/2018	Open House Attendee	Meetings – some attendees did not like the open house format and would have preferred a formal presentation.	The meetings held in support of the Facility are aligned with the regulations outlined in Article 10 of the PSL (16 NYCRR § 1000.4).

4.2.4 Proposed Studies

Exhibit 2 of the Application will follow the requirements outlined in Subsections (a) through (e) of Section 1001.2 of the Article 10 regulations as follows.

Exhibit 2 will not exceed 15 pages of text and will contain:

- (a) A brief description of the major components of the proposed facility, interconnections and related facilities.
- (b) A brief summary of the contents of the Application.
- (c) A brief description of the PIP Plan conducted by the Co-Applicants prior to submission of the Application and an identification of significant issues raised by the public and affected agencies during such program and the response of the Co-Applicants to those issues including a summary of changes made to the proposal as a result of the PIP Plan.
- (d) A brief description of the PIP to be conducted by the Co-Applicants after submission of the Application.
- (e) A brief, clearly and concisely written overall analysis in plain language that assembles and presents relevant and material facts regarding the proposed project upon which the Co-Applicants proposes that the Siting Board make its decision. The analysis will be analytical and not encyclopedic and will specifically address each required finding, determination and consideration the Siting Board must make or consider in its decision pursuant to Section 168 of the PSL and explain why the Co-Applicants believe that the requested Certificate can be granted.

4.3 LOCATION OF FACILITIES - EXHIBIT 3

4.3.1 Overview

As noted in Section 2.2, the Facility will consist of the following components:

- A solar field of PV panels producing DC electricity mounted on single-axis tracking structures that will follow the sun throughout the day;
- Inverters placed throughout the Facility (internal to the panel arrays) to convert DC electricity to AC electricity;
- Buried and overhead on-site electrical collection lines, as necessary;
- A medium-voltage cable collection system that will aggregate the AC output from the inverters;
- An on-site substation where the Facility's electrical output voltage will be combined and increased to the transmission line voltage of 115 kV via step-up transformers and connected to the existing on-site utility transmission lines;
- Internal infrastructure including access roads and fencing; and
- Temporary laydown areas for equipment staging during construction.

The Application will include maps showing the location of the Facility components listed above to the extent that drawing scale allows discernment of proposed Facility component locations. These components will be mapped on the United States Geological Survey (USGS) topographic tile cache base map service, displayed at a scale of 1:24,000 or greater. As currently designed, the Facility is not anticipated to include any permanent stormwater features of a significant nature for construction or operation.

The Co-Applicants propose to establish a 2-mile radius Study Area, which will be included on the appropriate maps/figures. However, the Facility has been and will be subject to a number of studies in support of the Application. The 2-mile Study Area will not be utilized for all studies/analyses; some studies will, as appropriate, utilize resource-specific study areas, which will be described briefly in this section of the Application, and are described in more detail in the respective sections of this PSS. For example, see PSS Section 4.22 for a detailed description of the wetland resources study area.

Mapping/figures in the Application will depict the location of the proposed Facility with respect to village, town, county, and school district boundaries. The locational relationship of these boundaries to the Facility will also be described in the Application.

4.3.2 Other Material Issues Raised by the Public and Affected Agencies

The Co-Applicants have received comments regarding the proposed location of facilities through their public outreach efforts to date. These are summarized in Table 4.3-1.

Table 4.3-1: Comments and Responses Regarding Location of Facilities

Date	Commenter	Issue/Comment Summary	Response
2/20/2018	Open House Attendee	Visual Impacts – Concerned that the facility will affect their viewshed	Hecate will conduct a visual impact study and mitigate view impacts
2/20/2018	Open House Attendee	Visual Impacts – Concerned that the facility will affect their viewshed	Hecate will conduct a visual impact study and mitigate view impacts
2/20/2018	Open House Attendee	Visual Impacts – concern about views from County Route 101, as it is higher in elevation, so vegetative screening may be less effective.	Hecate Albany will conduct a viewshed analysis to identify specific measures to mitigate the potential viewshed impacts.
2/20/2018	Open House Attendee	Land Use – Concern about continued access to an exercise loop on the property, which also serves as an ATV trail.	Potential impacts to recreational resources are anticipated to only be indirect, in the form of possible views of the Facility
2/20/2018	Open House Attendee	Property Values – some residents question whether the proposed Facility will negatively impact property values	Studies have shown no positive or negative affect on property values due to wind projects, which have more visual impact than solar. Existing studies on the impacts of renewable energy projects on property values will be discussed in the Application.

4.3.3 Proposed Studies

Exhibit 3 of the Application will follow the requirements outlined in Subsections (a) through (c) of Section 1001.3 of the Article 10 regulations, as follows.

Exhibit 3 will contain maps, drawings and explanations showing the location of the Facility, interconnections, and all ancillary features not located on the Facility site such as roads, railroads, switchyards, fuel or energy storage or regulation facilities, solid waste disposal areas, waste treatment and disposal facilities, and similar facilities, in relation to municipalities (county, city, town and village) and taxing jurisdictions associated with any part of the overall development proposal. Such maps, drawings and explanations will include:

- (a) New York State Department of Transportation (NYSDOT) or USGS maps (1:24,000 topographic edition), showing:
    - (1) the proposed location of the Facility and any reasonable and available alternative location sites required to be identified by Article 10 and its implementing regulations, including electric transmission line interconnections that are not subject to review under Article VII of the PSL, and including ancillary features located on the Facility site such as roads, railroads, switchyards, fuel or energy storage or regulation facilities, solid waste disposal areas, and similar facilities;
    - (2) the proposed location of any interconnections, including all offsite electric transmission lines, communications lines, stormwater drainage lines, and appurtenances thereto, to be installed in New York State connecting to and servicing the site of the Facility that are not subject to the NYSPSC's jurisdiction under PSL Article VII;
    - (3) the location of all proposed ancillary features not located on the Facility site such as roads, railroads, switchyards, fuel or energy storage or regulation facilities, solid waste disposal areas, and similar facilities, that are not subject to the Siting Board's jurisdiction under PSL Article 10;
    - (4) the proposed location of any electric transmission line and fuel gas transmission line interconnections that are subject to review under Article VII of the PSL and that are not subject to the Siting Board's jurisdiction under PSL Article 10; and
    - (5) a study area for the proposed Facility generally related to the nature of the technology and the setting of the proposed site. The Co-Applicants propose to establish a 2-mile radius Study Area, which will be included on the appropriate maps/figures. As explained above, however, the 2-mile Study Area will not be utilized for all studies/analyses; some studies will utilize resource-specific study areas as outlined within this PSS.

- (b) Maps clearly showing the location of the proposed Facility site, any reasonable and available alternative location sites required by Article 10 and its implementing regulations to be identified, the interconnections, and all ancillary features not located on the Facility site in relation to municipal boundaries, taxing jurisdictions, designated neighborhoods or community districts, at a scale sufficient to determine and demonstrate relation of facilities to those geographic and political features.
- (c) Written descriptions explaining the relation of the location of the proposed Facility site, any reasonable and available alternative location sites required by Article 10 and its implementing regulations to be identified, the interconnections, and all ancillary features not located on the Facility site to the affected municipalities, taxing jurisdictions, designated neighborhoods or community districts.

4.4 LAND USE - EXHIBIT 4

Land use and zoning are discussed in terms of regional and local land use patterns and zoning, agriculture, and future land use. The land use analysis for the Facility will include an assessment of the proposed Facility components and their compatibility with and impacts on land use and zoning. The analysis described here in the PSS will be conducted through site reconnaissance and a review of aerial photographs, Facility-specific maps, and other municipal and county documents, as well as other desktop research.

4.4.1 Overview

The land use patterns throughout the regional and local areas consist of agriculture, scattered rural homes, and farms, with pockets of commercial and industrial development along major transportation corridors.

The most important agricultural products in the region are beef, nursery and greenhouse crops, dairy, vegetables, sweet corn, and melons. The majority of the Facility Area is located within an Agricultural District (ALBA003) certified by the New York State Department of Agriculture and Markets (NYSDAM). A review of the USDA Natural Resources Conservation Service (NRCS) soil survey data indicates that three out of the eight soil units within the Facility Area (approximately 50 percent [%]) are designated as Prime Farmland. One of the remaining five soil units within the Facility Area (approximately 22%) is designated as Prime Farmland if drained. The remaining four soil units did not fall under a USDA soil type classification (NRCS 2018). Farmland within the Facility Area consists of a combination of row crops (corn and soybeans), hay and pasture fields. Construction will result in the temporary disturbance of agricultural land; mitigation measures will

be employed to minimize impacts (see Section 4.4.3). Operation of the Facility may have some impacts on the existing farmland within the Facility footprint; mitigation measures to unavoidable impacts are described in Section 4.4.4.

Recreational resources outside the Facility Area include hiking, picnicking, boating, fishing, swimming, wildlife watching, and winter activities. These resources are offered within the host Town of Coeymans at its neighborhood parks (Joralemon Park, Coeymans Landing Park, Mosher Park Complex, and Lawson Lake), the Sycamore Country Club, and the Louise E. Keir State Wildlife Management Area. Deer Mountain Park is located approximately 0.7 miles west of the Facility Area, which is the head of the Deer Mountain Nature Trail. The Flying Knights Model Aircraft Club uses a 0.25-mile overfly area for model airplanes within the Facility Area. Residents noted during the February open house that the Facility Area includes trails occasionally used for walking and ATV use. Direct impacts to recreational resources are expected to be limited to the model aircraft club (see Section 4.4.4), as the remaining identified recreational resources are not located within the Facility Area. Impacts to these remaining recreational resources will be indirect in the form of possible views of the Facility, further described in Section 4.24.

According to the Town of Coeymans Zoning Map, most of the Facility components are proposed to be located in the Planned Residential (R4P) District. The northern extent of the Facility Area is located within the Industrial (I) District, and portions of the Facility Area along the eastern and southern boundaries are located within the Residential and Agricultural District (A). Public Utility Facilities are an allowable principal use for each zone in which the Facility will be located.

4.4.2 Extent and Quality of Information Required

Hecate Albany will review existing land use and local regulations as they relate to the specific facilities and locations proposed as part of this Facility. This review will assess community character, new and proposed land uses, comprehensive plans, zoning districts and permitted land use within each zoning district.

A qualitative assessment of land use throughout the Facility Area will provide information regarding the proposed Facility, including solar panels, transmission lines, access roads, and substation, in relation to existing and future land uses. Land uses, including but not limited to, residential, schools, civic facilities, agriculture, industrial, commercial, scenic resources, recreational and public lands within the Study Area will be identified. This information will be attained through aerial photographs, site reconnaissance, and desktop research.

This Exhibit will include a detailed review of planning and zoning documents and an evaluation of the Facility's consistency with the planning objectives described in the documents produced by the Town of Coeymans and Albany County. This review will include:

- Albany County Agricultural and Farmland Protection Plan, adopted 2004 (available at: http://www.albanycounty.com/Libraries/Economic_Development_Conservation_and_Planning/AgPlan.sflb.ashx)
- Town of Coeymans 2006 Comprehensive Plan (available at: https://coeymans.org/wp-content/uploads/2016/08/coeymans-comprehensive-plan-2006.pdf)
- Town of Coeymans Municipal Code, adopted in 2000 (available at: https://www.ecode360.com/CO0785?needHash=true)

Aerial photographs of all properties within the Study Area will be of such scale and detail to enable discrimination and identification of all natural and cultural features. Aerial photographs will reflect the current land use situation and will include the source and date of the photographs. Overlays on aerial photographs will depict the Facility Area and proposed Facility components, including limits on proposed clearing or other changes to topography, vegetation or man-made structures, and access and maintenance routes. In addition, a series of maps will be provided that show:

- Existing land use within the Study Area;
- Existing overhead and underground major facilities for electric, gas or telecommunications transmission within the Study Area;
- All properties upon which any component of the Facility will be located, identifying the current land use, tax parcel number, and owner record of each property, and any publicly known proposed land use plans for any of these parcels;
- Existing zoning districts and proposed zoning districts within the Study Area;
- Publicly known proposed land uses within the Study Area (where applicable);
- Designated coastal areas, inland waterways and local waterfront revitalization program areas, groundwater management zones, designated agricultural districts, flood-prone areas, and critical environmental areas designated pursuant to the State Environmental Quality Review (SEQR) Act; and
- Recreational and other land uses within the Study Area that might be affected by the sight, sound or odor of the construction or operation of the Facility including cemeteries, airports, and private campgrounds.

4.4.3 Proposed Avoidance, Minimization, and Mitigation Measures

Potential avoidance and minimization measures to be assessed include, but are not limited to, conserving land to mitigate impacts to wildlife species, arranging the proposed solar array layout in order to preserve areas of farmland and/or adjusting the solar array layout to provide additional spacing as a means of visual impact mitigation.

The landowner will be financially compensated by Hecate Albany for exclusive use of the properties. It is the Co-Applicant's understanding that payments to the landowner will allow him to invest in a more successful farming operation outside of the Facility Area. The model aircraft club, which does not have a lease and operates at the Facility Area at the will of the landowner, will be asked to relocate outside of the Facility Area prior to the start of construction. Adjacent properties will have views of the Facility of varying degrees. Proposed landscaping and other aesthetic features of the Facility are discussed in Section 4.24.

4.4.4 Other Material Issues Raised by the Public and Affected Agencies

Hecate received comments regarding land use, as summarized in Table 4.4-1.

Table 4.4-1: Comments and Responses Regarding Land Use

Date	Commenter	Issue/Comment Summary	Response
2/20/2018	Open House Attendee	Traffic – County Route 101 can get heavy with traffic.	A traffic study will be conducted to identify potential service impacts and plan appropriate mitigation measures.
2/20/2018	Open House Attendee	Land Use – Concern about continued access to an exercise loop on the property, which also serves as an ATV trail.	Potential impacts to recreational resources are anticipated to only be indirect, in the form of possible views of the Facility

4.4.5 Proposed Studies

Subject to the discussion in Section 4.4.2, Exhibit 4 of the Application will follow the requirements outlined in Subsections (a) through (p) of Section 1001.4 of the Article 10 regulations, as follows.

Exhibit 4 will contain:

- (a) A map showing existing land uses within the 2-mile Study Area. Land uses will be based upon the New York Office of Real Property Services Property Classification Codes.
- (b) A map of any existing overhead and underground major facilities for electric, gas or telecommunications transmission within the Study Area.
- (c) A map of all properties upon which any component of the Facility or the related facilities would be located, and all properties adjoining such properties, which shows the current land use, tax parcel number and owner of record of each property, and any publicly known proposed land use plans for any of these parcels.
- (d) A map of existing zoning districts and proposed zoning districts within the Study Area, including a description of the permitted and the prohibited uses within each zone.
- (e) A statement as to whether the municipality has an adopted comprehensive plan and whether the proposed land use is consistent with such comprehensive plan. The exhibit will contain the address of the internet site where the plan is posted.
- (f) A map of all publicly known proposed land uses within the Study Area, gleaned from interviews with state and local planning officials, from the public involvement process, or from other sources.
- (g) Maps showing designated coastal areas, inland waterways and local waterfront revitalization program areas; groundwater management zones; designated agricultural districts; flood-prone areas; and critical environmental areas designated pursuant to the SEQR.
- (h) Maps showing recreational and other land uses within the study area that might be affected by the sight, sound or odor of the construction or operation of the Facility, interconnections and related facilities, including Wild, Scenic and Recreational River Corridors, open space, and any known archaeological, geologic, historical or scenic area, park, designated wilderness, forest preserve lands, conservation easement lands, scenic byways designated by the federal or state governments, nature preserves, designated trails, and public-access fishing areas; major communication and utility uses and infrastructure; and institutional, community and municipal uses and facilities; including a summary describing the nature of the probable environmental impact of Facility and interconnection construction and operation on such uses, including an identification of how such impact is avoided or, if unavoidable, minimized or mitigated. Given the provisions of §304 of the National Historic Preservation Act (NHPA), 9 NYCRR §427.8, and §15 of the PSL, information about the location, character, or ownership of a cultural resource will not

be disclosed to the public, and will only be disclosed to the parties to a proceeding pursuant to an appropriate protective order if a determination is made that disclosure may:

  - (1) cause a significant invasion of privacy;
  - (2) risk harm to the affected cultural resource; or
  - (3) impede the use of a traditional religious site by practitioners.

- (i) A qualitative assessment of the compatibility of the Facility and any interconnection, including any off-site staging and storage areas, with existing, proposed and allowed land uses, and local and regional land use plans, within a 1-mile radius of the Facility site and any interconnection route. The qualitative assessment will include an evaluation of the short- and long-term effects of Facility-generated noise, odor, traffic and visual impacts on the use and enjoyment of those areas for the current and planned uses. The assessment will identify the nearby land uses of particular concern to the community, and will address the land use impacts of the facility on residential areas, schools, civic facilities, recreational facilities, and commercial areas.
- (j) A qualitative assessment of the compatibility of aboveground interconnections and related facilities with existing, potential, and proposed land uses within the Study Area.
- (k) A qualitative assessment of the compatibility of underground interconnections and related facilities with existing, potential, and proposed land uses within 300 feet from the centerline of such interconnections or related facilities.
- (l) While a small portion of the Study Area is located in a designated coastal area, the Facility is not in, nor is it near, a designated inland waterways or significant coastal fish and wildlife designated habitat. In addition, it is separated from any of these features by the Interstate-87 corridor, and associated ROWs; therefore, an analysis of conformance with relevant provisions of the Coastal Zone Management Act, and proposed or adopted plans for inland waterways and local waterfront revitalization areas, is not proposed.
- (m) Aerial photographs of all properties within the study area of such scale and detail to enable discrimination and identification or all natural and cultural features. The source of aerial imagery will be USDA National Agriculture Imagery Program (NAIP) Imagery, New York 100cm dated 2017.
- (n) Overlays on aerial photographs that clearly identify the Facility site and any interconnection route, the limits of proposed clearing or other changes to the topography, vegetation or man-made structures, and the location of access and maintenance routes.

- (o) All aerial photographs will be the latest available from either federal, state or commercial entities. All aerial photographs will indicate the source and the date photographs were taken.
- (p) A description of community character in the area of the proposed Facility, an analysis of impacts of Facility construction and operation on community character, and identification of avoidance or mitigation measures that will minimize adverse impacts on community character. For the purposes of this paragraph, community character includes defining features and interactions of the natural, built and social environment, and how those features are used and appreciated in the community.

4.5 ELECTRIC SYSTEM EFFECTS - EXHIBIT 5

4.5.1 Proposed Studies

Exhibit 5 of the Application will follow the requirements outlined in Subsections (a) through (n) of Section 1001.5 of the Article 10 regulations, as follows.

- (a) A System Impact Study (SIS) is currently being prepared by the NYISO. To the extent available, the study will be included with the Application and will be filed separately under trade secret protection, as NYISO requires the SIS to remain confidential due to Critical Energy Infrastructure Information (CEII) Regulations. According to the NYISO-approved scope, the study will show expected flows on the system under normal, peak and emergency conditions and effects on stability of the interconnected system, including the necessary technical analyses (Thermal, Voltage, Short Circuit, and Stability) to evaluate the impact of the interconnection. The study will include the new electric interconnection between the Facility and the POI, as well as any other system upgrades required.
- (b) An evaluation of the potential significant impacts of the facility and its interconnection to transmission system reliability at a level of detail that reflects the magnitude of the impacts will be provided in the Application.
- (c) Based on the results of the SIS, the effects of the Facility on ancillary services and the electric transmission system will be discussed in the Application.
- (d) Though not anticipated, should the results of the SIS indicate the Facility will result in adverse reliability impacts, the Application will provide an analysis of any reasonable alternatives that would mitigate the adverse reliability impacts and maintain voltage, stability, thermal limitations, and short-circuit capability at adequate levels.

- (e) The Application will provide an estimate of the increase or decrease in the total transfer capacity across the affected interfaces identified in the SIS. If a forecasted reduction in transfer capability across affected interfaces violates reliability requirements, the discussion will include an evaluation of reasonable corrective measures that could be employed to mitigation or eliminate said reduction.
- (f) The Application will include a description of criteria, plans, and protocols for generation and ancillary facilities design, construction, commissioning, and operation, including as appropriate to the proposed solar technology.
  - (1) Engineering codes, standards, guidelines and practices that apply.
    - The design of the Facility substation will be developed in accordance with applicable national standards and will incorporate any required, applicable standards of the interconnecting utility. Codes and Standards: All work will be in accordance with the prevailing standards of skill and care of each trade and current codes and applicable laws and ordinances at the time of construction. The following standards are applicable to the Facility:
      - American National Standards Institute
      - Institute of Electrical and Electronic Engineers
      - National Electric Code
      - National Electrical Manufacturers Association
      - National Electrical Safety Code
      - Association of Edison Illuminating Companies
      - North American Electric Reliability Council
      - National Fire Protection Association
      - American Society for Testing and Materials
      - Occupational Safety and Health Administration
      - American Society of Civil Engineers
    - The Application will provide additional detail on the Facility's electric system codes, standards, guidelines, and practices.
  - (2) The Application will include a type certification for a representative technology type that is being considered for the proposed Facility.
  - (3) Procedures and controls for facility inspection, testing and commissioning.
    - Functional testing will be performed to ensure the equipment has been installed correctly for each portion of the Facility. When all systems have been

tested and are operating properly, the Facility would be commissioned for commercial operation and sale of energy.

- (4) Maintenance and management plans, procedures and criteria.
    - An Operations and Maintenance (O&M) Plan will go into effect once the Facility is in its operation phase. One objective of the O&M Plan is to provide guidance on the maintenance activities needed to minimize the potential impacts to the environment during maintenance and repairs to the Facility. A preliminary O&M Plan will be included in the Application. The operations personnel will have the responsibility to implement specific actions and procedures during operations, maintenance, and repair activities. The operations staff will maintain the panels, including routine maintenance, long-term maintenance, and emergency work. In all cases, the operations personnel will be responsible for arranging needed repairs either through internal resources or with the aid of additional contractor support.

- (h) As the Facility will involve the construction of a new interconnection substation to be built and owned by Hecate Albany, as well as an adjacent interconnecting switchyard built by either Hecate Albany or the transmission owner and owned by the transmission owner, the Application will describe:
    - (1) The solar substation and switchyard facilities to be constructed and operated;
    - (2) How substation, switchyard, and interconnection design will meet the transmission owner's requirements; and,
    - (3) Operational and maintenance responsibilities for the facilities and how they will meet the transmission owner's standards.
- (i) Facility maintenance and management plans, procedures and criteria, specifically addressing the following topics:
    - (1) The maintenance for the substation and electrical transmission components of the Facility will be done in accordance with the equipment manufacturers' recommendations and acceptable industry practices. The maintenance schedule will include regularly scheduled safety inspections and the Facility's electric components' integrity will be reviewed in accordance with manufacturer's recommendations. Routine preventative maintenance will be performed regularly and corrective maintenance will be performed as needed. The Facility will undertake maintenance activities on a regular basis. If work is to be performed in

a public ROW, notification and any applicable permit(s) to work will be addressed with the appropriate agencies prior to starting any work. A Facility maintenance plan, further described in the Application, will address electric substation, gathering and interconnect line inspections, maintenance, and repairs, including minimization of interference with electric and communication distribution systems.

- (2) Electric transmission, gathering and interconnect line inspections, maintenance, and repairs, including:
  - (i) vegetation clearance requirements, management plans, and procedures;
  - (ii) inspection and maintenance schedules; and
  - (iii) minimization of interference with electric and communications distribution systems.

- (j) As part of the O&M procedures for the Facility, a vegetation plan will be developed. This plan will include information on maintaining/mowing vegetation under and between the panels, including information such as time of year and the number of times per year mowing will occur. It will also present information on how an invasive species prevention plan will be implemented in concert with these yearly activities to prevent the introduction and spread of invasive plant species.
- (k) There are no plans to share aboveground facilities with other utilities.
- (l) A status update will be provided with the Application regarding equipment availability and expected delivery dates, if available, for major components including panels, inverters, transformers, and switchgear.
- (m) Blackstart capabilities are not applicable to the Project.
- (n) Hecate Albany is coordinating with NYISO for the preparation of the SIS, and with National Grid (the local transmission owner) for the preparation of the Facilities Study. The Application will include an identification and demonstration of the degree of compliance with the applicable reliability standards of National Grid.

4.6 WIND POWER FACILITIES - EXHIBIT 6

This Exhibit is not applicable to solar facilities.

4.7 NATURAL GAS POWER FACILITIES - EXHIBIT 7

This Exhibit is not applicable to the Facility as no natural gas power facilities are proposed.

4.8 ELECTRIC SYSTEM PRODUCTION MODELING - EXHIBIT 8

4.8.1 Overview

Electric System Production Modeling will be completed for the Facility by a consultant who understands the Article 10 requirements, has experience in the region, is licensed and qualified to use ProMOD with the Transmission Access Model, GEMAPS, PROBE, or a similar program, and can meet all the requirements for the Exhibit 8 analyses.

Prior to preparing this Exhibit and executing the associated analysis, Hecate Albany will consult with DPS and NYSDEC to develop an acceptable input data set, including modeling for the Facility and inputs for the emissions analysis to be used in the simulation analyses. The assumptions will be delivered to DPS and NYSDEC in a format meeting the requirements of those agencies.

The analysis will project pricing and emission changes with the Facility in operation, changes in generating resource dispatch and impacts on “must-run” resources as defined in Article 10. The results will be documented in a report meeting the requirements of Exhibit 8.

4.8.2 Proposed Studies

Exhibit 8 of the Application will follow the requirements outlined in Subsections (a) through (b) of Section 1001.8 of the Article 10 regulations. It will contain the following analyses developed using GEMAPS, PROMOD or a similar computer-based modeling tool:

- (a) estimated statewide levels of sulfur dioxide (SO_2), nitrogen oxides (NO_X), and carbon dioxide (CO_2) emissions, both with, and without the proposed facility;
- (b) estimated minimum, maximum, and average annual spot prices representative of all NYISO Zones within the New York Control Area, both with and without the proposed facility;
- (c) an estimated capacity factor for the facility;
- (d) estimated annual and monthly, on peak, shoulder, and off-peak MW output capability factors for the facility;
- (e) estimated average annual and monthly production output for the facility in MWhs;
- (f) an estimated production curve for the facility over an average year;
- (g) an estimated production duration curve for the facility over an average year; and
- (h) estimated effects of the proposed facility on the energy dispatch of existing must-run resources, defined for this purpose as existing wind, hydroelectric, and nuclear facilities,

as well as co-generation facilities to the extent they are obligated to output their available energy because of their steam hosts.

Digital copies of all inputs used in the simulations will be provided to DPS and NYSDEC.

4.9 REASONABLE AND AVAILABLE ALTERNATIVES - EXHIBIT 9

The following sections contain a discussion on what topics will be assessed in Exhibit 9 of the Application. The Application will include a preliminary description and evaluation of reasonable and available alternative locations for the proposed Facility, including a description of the comparative advantages and disadvantages of the proposed and alternative locations. Pursuant to the Article 10 regulations, these descriptions and evaluations will be limited to parcels owned by, or under option to, Hecate Albany or its affiliates. The Application will include a statement of the reasons why the proposed location, taking into account the potentially significant and adverse environmental impacts, is best suited among the alternatives to promote public health and welfare. It will also include evaluation of a "no action" alternative.

4.9.1 Selection of the Facility Area

A critical factor for siting a solar facility is finding a transmission line with enough existing capacity to export the power from the Facility to the utility grid system without prohibitive cost or unacceptable environmental impacts. For this Facility, a POI with the existing Long Lane-Lafarge 115-kV transmission line was selected. This transmission line, which is owned and operated by National Grid, bisects the southern portion of the Facility Area. A new substation is proposed in the north-central portion of the Facility Area, east of Route 101 and the proposed access drive, to interconnect the Facility with the existing Long Lane-Lafarge 115-kV transmission line. As an alternative, a second POI is being considered to the existing Lafarge-Pleasant Valley 115-kV line that runs adjacent to the Long Lane-Lafarge line also adjacent to the Facility Area. The interconnecting equipment for the two POIs would be located adjacent to each other.

Other important factors include the availability of open and appropriately oriented land and willing land lease participants. The Co-Applicants have conducted preliminary environmental screenings, which are discussed in the appropriate sections of this PSS.

The Facility Area represents the broader area within which selected areas will be developed with Facility components. This provides flexibility during Facility development to minimize and avoid potential impacts to wetlands, cultural resources, visual resources, wildlife habitat, and other

sensitive resources. The Facility will ultimately be sited within the approximately 428-acre Facility Area. The Co-Applicants are leasing and or buying land from private landowners.

4.9.2 Reasonable and Available Alternative Locations Identified

An identification and description of reasonable and available alternate location sites for the proposed Facility owned by or under option to Hecate Albany or its affiliates will be provided in the Application. If any reasonable and available alternative location is identified, it will be assessed to provide an evaluation of the comparative advantages and disadvantages to the primary proposed location considering the criteria listed in Section 1001.9(b) of the Article 10 regulations. The Application will include a statement of the reasons why the primary proposed location is best suited, among the alternative locations required to be identified, to promote public health and welfare, including the recreational, cultural and other concurrent uses that the site and affected areas may serve.

4.9.3 Reasonable Alternatives to Proposed Facility at the Primary Proposed Location

The Application will include a description and evaluation of reasonable alternatives to the Facility at the primary proposed location. This will include a discussion on alternatives to the proposed facilities general arrangement and design, different technologies, Facility scale, and timing of the proposed in-service date for the Facility in relation to other planned changes to the electric system. A statement of the advantages and disadvantages of the alternatives and the reasons why the primary proposed design technology, scale or magnitude, and timing are best suited, among the alternatives, to promote public health and welfare, including the recreational, cultural and other concurrent uses that the site may serve will also be included in the Application.

4.9.4 No Action Alternative

Under the no action alternative, the Facility would not be built or operated, which is incompatible with the Facility's purpose and demonstrated need. Failure to construct the Facility would avoid the impacts directly associated with the construction and operation of the Facility, but would not result in the environmental and economic development benefits and objectives associated with the Facility. The Facility will produce renewable, clean energy. The no-action alternative would be inconsistent with the goals and objectives of the State's adopted Clean Energy Standard and of the State Energy Plan, including increasing significantly the contribution of renewable energy as part of State's overall energy portfolio while decreasing the State's dependence on fossil fuels. The reduction in greenhouse gas and other air emissions from fossil fuel-fired electric generators

that would be displaced by the Facility's operation would not be realized. In addition, the state and municipality would not reap the economic development benefits associated with the Facility. Therefore, the no action alternative is not an effective alternative to this Facility and will be excluded from further analysis.

4.9.5 Energy Supply Source Alternatives

This section will identify reasonable energy supply source alternatives available to meet the state's energy needs. However, pursuant to the Article 10 regulations, this will be limited to alternative technologies that are feasible considering the objectives and capabilities of the Co-Applicants or its affiliates. This discussion will include an evaluation of the comparative advantages and disadvantages of the Facility and the alternative technologies at a level of detail sufficient to permit a comparative assessment of the feasible alternatives, as described in the Article 10 regulations, discussed for each source alternative technology identified.

4.9.6 Proposed Studies

Exhibit 9 of the Application will follow the requirements outlined in Subsections (a) through (i) of Section 1001.9 of the Article 10 regulations, as follows.

Exhibit 9 will contain:

- (a) an identification and description of reasonable and available alternate location sites, owned by or under option to the Co-Applicants or their affiliates, for the proposed Facility;
- (b) for each alternative location identified, an evaluation of the comparative advantages and disadvantages of the proposed and alternative locations at a level of detail sufficient to permit a comparative assessment of the alternatives discussed considering:
    - (1) the environmental setting;
    - (2) the recreational, cultural and other concurrent uses that the site may serve;
    - (3) engineering feasibility, including interconnections;
    - (4) reliability and electric system effects;
    - (5) environmental impacts, including an assessment of climate change impacts (whether proposed energy use contributes to global temperature increase);
    - (6) economic considerations;
    - (7) environmental justice considerations;
    - (8) security, public safety and emergency planning considerations;
    - (9) public health considerations;

  - (10) the site's vulnerability to potential seismic disturbances and current and anticipated climate change impacts, such as sea-level rise, precipitation changes, and extreme weather events; and
  - (11) the objectives and capabilities of the Co-Applicants.
- (c) a description and evaluation of reasonable alternatives to the proposed Facility at the primary proposed location including alternatives regarding:
  - (1) general arrangement and design;
  - (2) technology;
  - (3) scale or magnitude;
  - (4) timing of the proposed in-service date for the Facility in relation to other planned additions, withdrawals, or other capacity, transmission or demand reduction changes to the electric system;
- (d) a statement of the reasons why the primary proposed location is best suited, among the alternative locations required to be identified, to promote public health and welfare, including the recreational, cultural and other concurrent uses that the site and affected areas may serve.
- (e) a statement of the advantages and disadvantages of the alternatives and the reasons why the primary proposed design technology, scale or magnitude, and timing are best suited, among the alternatives, to promote public health and welfare, including the recreational, cultural and other concurrent uses that the site may serve.
- (f) a description and evaluation of the no action/no build alternative at the primary proposed location including a statement of the reasons why the proposed facility is better suited to promote public health and welfare including the recreational, cultural and other concurrent uses that the site may serve.
- (g) an identification and description of reasonable energy supply source alternatives including but not limited to alternatives to the proposed Facility consisting of renewable generation, distributed generation, and transmission alternatives; this study will be limited to alternatives that are feasible considering the objectives and capabilities of the Co-Applicants or their affiliates.
- (h) for each source alternative technology identified, an evaluation of the comparative advantages and disadvantages of the proposed Facility and the alternative technologies at a level of detail sufficient to permit a comparative assessment of the alternatives discussed considering:
  - (1) engineering feasibility;

- (2) reliability and electric system effects;
- (3) environmental impacts, including an assessment of climate change impacts (whether proposed energy use contributes to global temperature increase);
- (4) economic considerations;
- (5) environmental justice considerations;
- (6) security, public safety and emergency planning considerations;
- (7) public health considerations; and
- (8) the objectives and capabilities of the Co-Applicants.

- (i) a statement of the reasons why the proposed Facility is best suited, among the alternative sources and measures, to promote public health and welfare, including the recreational, cultural, and other concurrent uses that the site and affected areas may serve.

4.10 CONSISTENCY WITH ENERGY PLANNING OBJECTIVES – EXHIBIT 10

4.10.1 Overview

Hecate Albany will assess and describe the degree of consistency of the construction and operation of the proposed Facility with the energy policies and long-range energy planning objectives and strategies provided in the most recent state energy plan. This discussion will consider the proposed Facility's effect, as applicable, on reliability, fuel diversity, regional requirements for capacity, electric transmission constraints, fuel delivery constraints, and other energy policy or long-range energy planning objectives or strategies identified in the most recent state energy plan. This discussion will also include a comparative analysis of the consistency with energy planning objectives offered by the reasonable and available alternative locations or properties identified for construction of the proposed Facility in Exhibit 9.

While this section sets forth nine separate areas (Subsections (a) through (i)) requiring statements, descriptions and analysis, these sections can be grouped into three general categories:

1. Reliability of the bulk transmission grid, managed by the NYISO (Subsections [b], [d], and [e]);

2. Consistency with the New York State Energy Plan (Subsections [a], [c], [f], [g]); and

3. Identified alternatives analysis (Subsections [h] and [i]).

4.10.1.1 Reliability of the Bulk Transmission Grid

Information developed in support of Exhibits 5 and 8 will be relied upon to assess the Facility's consistency with energy policies and planning objectives as they relate to reliability of the bulk transmission grid.

4.10.1.2 Consistency with New York State Energy Plan

For this Exhibit, a discussion as to how the proposed Facility is consistent with each of the stated goals and objectives of the current New York State Energy Plan will be provided.

4.10.1.3 Alternatives Analysis

Information developed in support of Exhibit 9 will be utilized to assess whether any of the identified alternatives, as required by Article 10 and its implementing regulations, would offer material advantages in terms of consistency with energy planning objectives.

4.10.2 Proposed Studies

Exhibit 10 of the Application will follow the requirements outlined in Subsections (a) through (i) of Section 1001.10 of the Article 10 regulations, as follows.

Exhibit 10 will contain:

- (a) a statement demonstrating the degree of consistency of the construction and operation of the Facility with the energy policies and long-range energy planning objectives and strategies contained in the most recent state energy plan including consideration of the information noted below;
- (b) a description of the impact the proposed Facility would have on reliability in the state;
- (c) a description of the impact the proposed Facility would have on fuel diversity in the state;
- (d) a description of the impact the proposed Facility would have on regional requirements for capacity;
- (e) a description of the impact the proposed Facility would have on electric transmission constraints;
- (f) a description of the impact the proposed Facility would have on fuel delivery constraints;
- (g) a description of the impact the proposed Facility would have in relation to any other energy policy or long-range energy planning objective or strategy contained in the most recent state energy plan;

- (h) an analysis of the comparative advantages and disadvantages of reasonable and available alternative locations or properties identified for construction of the proposed Facility; and
- (i) a statement of the reasons why the proposed location and source is best suited, among the alternatives identified, to promote public health and welfare, including minimizing the public health and environmental impacts related to climate change.

4.11 PRELIMINARY DESIGN DRAWINGS - EXHIBIT 11

4.11.1 Overview

Preliminary design drawings to be submitted pursuant to this section will be prepared by a Professional Engineer, Architect, or Landscape Architect, as appropriate, licensed and registered in New York State. Drawings will be labeled "not for construction purposes" to indicate their preliminary status. These drawings will be drawn to an appropriate scale using computer-aided design software.

The preliminary site plan will show, at a minimum, the following Facility components:

- Solar panels and associated mounting features (concrete pads, foundations, etc.);
- Access road travel lanes;
- Proposed grading (temporary grading for construction purposes and permanent contours for final grading);
- Electric cable collection lines; overhead and underground cable routes will be differentiated with specific line-types;
- Approximate limits of disturbance for all Facility components (panels, access roads, buildings, electric lines, substation, etc.);
- Clearing limits for all Facility components (panels, access roads, buildings, electric lines, shading vegetation, etc.);
- Indication of off-site permanent ROW and road crossings for electric cable installations;
- Outline of collection and interconnection switchyard/substations, including access driveway, setbacks, and fence line;
- Proposed locations of electric cable installations for crossing of streams, waterbodies, roads, etc; and
- Laydown, staging, and equipment storage areas.

4.11.2 Proposed Studies

Exhibit 11 of the Application will follow the requirements outlined in Subsections (a) through (i) of Section 1001.11 of the Article 10 regulations, as follows.

Exhibit 11 will contain:

- (a) A site plan showing all buildings, structures, driveways, parking areas, emergency access lanes, sidewalks, access ways and other improvements at the facility site; depicting the proposed site in relation to adjoining properties; and depicting the layout of onsite facilities and ancillary features. Additional drawings will be included depicting the layout of all offsite facilities and ancillary features.
- (b) A construction operations plan indicating all materials lay-down areas, construction preparation areas, major excavation and soil storage areas, and construction equipment and worker parking areas.
- (c) Grading and erosion control plans indicating soil types, depth to bedrock, general areas of cut and fill, retaining walls, initial and proposed contours, and permanent stormwater retention areas.
- (d) A landscaping plan indicating areas of trees to be retained, removed, or restored; berms, walls, fences and other landscaping improvements; and areas for snow removal storage.
- (e) A lighting plan including type, location, and height of installation of proposed exterior lighting fixtures; an indication of the measures to be taken to prevent unnecessary light trespass beyond the Facility property line; and manufacturer cut sheets of any proposed light fixtures.
- (f) Architectural drawings including building and structure arrangements and exterior elevations for all buildings and structures, indicating the length, width, height, material of construction, color and finish of all buildings, structures, and fixed equipment and the type(s) of site perimeter fencing to be installed extensively around Facility sites.
- (g) Typical design detail drawings including:
    - (1) Plan and sections of underground facilities, including single and multiple-circuit layouts with dimensions of proposed depth and level of cover, separation requirements between circuits, clearing width limits for construction and operation of the Facility, limits of disturbance, and required permanent off-site ROW;
    - (2) Elevations for overhead electric facilities (collection and transmission lines, if applicable) including height above grade, structure layouts, clearing width limits for

construction and operation of the Facility, permanent off-site ROW widths, average span lengths for each proposed layout, and structure separation requirements (for installations requiring more than one pole, etc.) for all single and multiple-circuit layouts;

- (3) Typical foundations (piers, etc., including dimensions) to be used for solar panel installations;
- (4) A circuit map indicating overhead and underground installations;
- (5) Typical details associated with trenchless installations, including typical staging areas, construction machinery arrangements, and bore pits; and,
- (6) Technical data sheets associated with solar panels to be used for this Facility.

- (h) For interconnection facilities, the plans and drawings listed above will be provided for the proposed interconnection facilities and a profile of the centerline of the interconnection facilities at exaggerated vertical scale. A one-line diagram will also be provided.
- (i) A list of engineering codes, standards, guidelines and practices that the Co-Applicants intend to conform with when planning, designing, constructing, operating and maintaining the generating facility, electric collection system, substation, transmission line, inter-connection, and any associated buildings and structures.

4.12 CONSTRUCTION - EXHIBIT 12

4.12.1 Proposed Studies

Exhibit 12 of the Application will follow the requirements outlined in Subsections (a) through (d) of Section 1001.12 of the Article 10 regulations, as follows.

- (a) Hecate Albany will prepare a preliminary Quality Assurance and Control (QA/QC) plan, including staffing positions and qualifications necessary, demonstrating how the Facility will be monitored and will conform with all applicable design, engineering and installation standards and criteria. Specific codes, standards, etc., will also be included, as applicable, such as the New York State Building Code, International Building Code, American Concrete Institute, or any other guidance that will be followed as part of the QA/QC protocol.
- (b) Statements that Hecate Albany and its contractors will comply with to the requirements for protection of underground facilities contained in Public Service Law §119-b, as implemented by 16 NYCRR Part 753, and will comply with applicable pole numbering and marking requirements, as implemented by 16 NYCRR Part 217.

- (c) Hecate Albany will also work with the appropriate parties to develop a mutually agreeable approach for avoiding potential conflicts with existing utility transmission and distribution systems. The Application will include preliminary plans and descriptions indicating design, location and construction controls to avoid interference with existing utility transmission and distribution systems, indicating locations and typical separations of proposed facilities from existing electric, gas, and communications infrastructure and measures to minimize interferences where avoidances cannot be reasonably achieved.
    - (1) This Exhibit will include a discussion on the existing gas main that traverses the Facility Area including:
        - (i) A review of publicly recorded easements associated with the gas main; and,
        - (ii) An indication of any publicly recorded restrictions associated with the easement for crossings and setbacks.
- (d) This Exhibit will also include a proposed process for addressing relevant and material public complaints, and procedures for dispute resolution during facility construction and operation. Hecate Albany is committed to developing a process that is easily accessed, is tracked to time of resolution, provides input from construction managers as appropriate, and clearly defines responsibilities for issue resolution. The complaint process will have assigned personnel to track the resolution of the complaint from the time of receipt, verification, resolution development, implementation and confirmation of resolution and will:
    - (1) Include a procedure for transmittal of complaint logs to DPS. The complaint log will list all complaints and resolutions, to be maintained during construction and operation of the Facility and will be available to DPS upon request;
    - (2) Describe actions the Co-Applicants will take if a complaint remains unresolved after all steps are followed;
    - (3) Indicate whether complaints will be accepted from the toll-free line, as well as electronically through e-mail and the Facility website. In addition, complaint handling will address both written and verbal complaints. Verbal complaints received during construction will be converted to written documents that can be tracked by the certificate holder and contractors and be reported to DPS Staff; and
    - (4) Identify and include any procedures or protocols that may be unique to each phase of the Facility (e.g., construction, operation, decommissioning of facilities). For example, during construction, complaint calls will be handled locally and quickly.

- (5) This Exhibit will also include information regarding Co-Applicants' communications with stakeholders about construction activities, schedule and applicable safety and security measures. The Co-Applicants will coordinate with any pipeline owners operating pipelines in the Facility Area in developing the Facility design and layout to avoid effects on pipeline integrity and ROW. The Article 10 Application will demonstrate that pipeline facility protection measures are accommodated in the Facility's location, design, accessibility, construction, operation and maintenance methods and procedures.

4.12.2 Other Material Issues Raised by the Public and Affected Agencies

Hecate received comments regarding construction, as summarized in Table 4.12-1.

Table 4.12-1: Comments and Responses Regarding Construction

Date	Commenter	Issue/Comment Summary	Response
2/20/2018	Open House Attendee	Project Maintenance – resident suggested planting milkweed to help pollinator species.	Hecate Albany will develop a plan regarding proposed maintenance activities and schedules. Hecate Albany is investigating using pollinator plant species in its planting and maintenance planning.

4.13 REAL PROPERTY - EXHIBIT 13

4.13.1 Proposed Studies

Exhibit 13 of the Application will follow the requirements outlined in Subsections (a) through (e) of Section 1001.13 of the Article 10 regulations, as follows.

- (a) The Application will include a survey of the Facility Area showing parcel boundaries (leased or subject to easement as well as those that can expect to be leased or made subject to easement) on which proposed Facility components (including panel locations, access roads, fencing, inverters, substation, and laydown yards) are to be located as well as the associated tax map sheet, parcel numbers (block and lot numbers) and owner information. The owner of record of all parcels adjacent to Facility Area properties will also be included. Existing utility facility ROWs (as identified to date), such as the POI, the Long

Lane-Lafarge 115-kV transmission line, which is owned and operated by National Grid, and public roads will be shown as will the easement associated with the existing gas main that traverses the Facility Area. Public and private roads on or adjoining or planned for use as access to the site will be depicted. The survey will also show current zoning information for the Town of Coeymans including the Planned Residential (R4P) District, within which most of the Facility components are proposed to be located, and the Industrial (I) and the Residential and Agricultural (RA) Districts where portions of Facility components are proposed to be located.

- (b) This Exhibit will also include maps showing all proposed interconnection facilities and off-property/ROW access drives and construction laydown areas for such interconnections using the data obtained above.
- (c) The Application will provide a description of the agreements for parcels that are secured, under option or to be secured for the Facility, including ingress/egress access to public roads; easements for transmission and collections lines, and crossing existing natural gas and transmission lines; and public road use and occupancy for Facility collection and interconnection lines as appropriate to the Facility design. This Exhibit will provide a statement that the Co-Applicants have or will obtain the necessary real property rights for all parcels needed for the Facility and its interconnection.
- (d) Based on preliminary discussion with local municipal representatives, the Facility will not need any improvement district extensions; therefore, this topic will not be addressed in the Application.

4.13.2 Other Material Issues Raised by the Public and Affected Agencies

Hecate received comments regarding real property, as summarized in Table 4.13-1.

Table 4.13-1: Comments and Responses Regarding Real Property

Date	Commenter	Issue/Comment Summary	Response
2/20/2018	Open House Attendee	Property Values – some residents question whether the proposed Facility will negatively impact property values	Studies have shown no positive or negative affect on property values due to wind projects, which have more visual impact than solar. Existing studies on the impacts of renewable energy

Date	Commenter	Issue/Comment Summary	Response
			projects on property values will be discussed in the Application.

4.14 COST OF FACILITIES - EXHIBIT 14

4.14.1 Overview

The capital cost estimate for the Facility will include all aspects of the construction, including: materials and equipment; construction labor; engineering costs; testing and commissioning; contingencies specific to the Facility; and other indirect charges.

An order-of-magnitude cost estimate will be prepared based upon an engineer's estimate, industry standards, and the Co-Applicants' prior development experience.

Cost estimates will be provided in US dollars and any applicable sales tax on equipment and materials will not be included.

4.14.2 Proposed Studies

Exhibit 14 of the Application will follow the requirements outlined in Subsections (a) through (c) of Section 1001.14 of the Article 10 regulations.

Exhibit 14 will contain:

- (a) A detailed estimate of the total capital costs of the proposed facility, including a separately stated estimate for each interconnection, broken down in a rational manner by the Applicant into major cost components appropriate to the facility.
- (b) A brief statement of the source of the information used as the basis for the estimates required by subdivision (a) of this section.
- (c) Upon the demand of any party or of DPS, the Co-Applicants will supply further detail of the estimates required by subdivision (a) of this section. However, certain components of this exhibit may be considered confidential information, and trade secret protection may be sought in order to control access and use of the information.

4.15 PUBLIC HEALTH AND SAFETY - EXHIBIT 15

4.15.1 Overview

Solar farms do not generate, gaseous or liquid waste and little if any solid wastes during operation. Some petroleum products such as diesel fuel, lubricating oil, and hydraulic fluid required by

construction equipment, will be used in the construction of the Facility. Best management/clean-up practices will be used to prevent, control, and clean up inadvertent spills. In addition, Facility construction will generate minor amounts of solid waste (i.e., plastic, wood, cardboard and metal materials, construction scrap, general refuse). This construction material will be collected from the Facility Area and managed and transported in accordance with New York State's solid and hazardous waste rules. The Application will provide additional details on construction-generated wastes.

4.15.2 Extent and Quality of Information Required

In compliance with the Clean Water Act (CWA), a Spill Prevention, Control and Countermeasure (SPCC) Plan will be prepared which will assess the amount of hazardous material associated with the Facility both during its construction and operation. The potential for discharge to waterways will be assessed in the SPCC Plan.

The maps required under Section 1001.15 (f) of the Article 10 regulations will be included in the Application. It is anticipated that data will be used from the NYS Geographic Information System (GIS) Clearinghouse, FEMA, and the USGS.

4.15.3 Proposed Avoidance, Minimization, and Mitigation Measures

The Facility is not expected to result in any public health or safety concerns associated with gaseous, liquid, or solid wastes. However, the SPCC Plan will endeavor to provide specifications as to when secondary containment will be necessary, what spill control equipment should be onsite, contact information for appropriate emergency agencies and procedures for controlling a spill. In addition, routine inspection of the storage of these materials will be conducted to ensure compliance with best management practices. These measures, as will be explained in the Application, are expected to mitigate reasonably unavoidable impacts.

4.15.4 Proposed Studies

Exhibit 15 of the Application will follow the requirements outlined in Subsections (a) through (c) of Section 1001.15 of the Article 10 regulations, as follows.

Exhibit 15 will contain a statement and evaluation that identifies, describes, and discusses all potentially significant adverse impacts of the construction and operation of the Facility, the interconnections, and related facilities on the environment, public health, and safety, at a level of detail that reflects the severity of the impacts and the reasonable likelihood of their occurrence, identifies the current applicable statutory and regulatory framework, and also addresses:

- (a) the anticipated gaseous, liquid and solid wastes to be produced at the Facility during construction and under representative operating conditions of the Facility, including their source, anticipated volumes, composition and temperature, and such meteorological, hydrological and other information needed to support such estimates and any studies, identifying the author and date thereof, used in the analysis;
- (b) the anticipated volumes of such wastes to be released to the environment during construction and under any operating condition of the Facility;
- (c) the treatment processes to eliminate or minimize wastes to be released to the environment;
- (d) the manner of collection, handling, storage, transport and disposal for wastes retained and not released at the site, or to be disposed of;
- (e) maps of the 2-mile Study Area and analysis showing relation of the proposed Facility site to public water supply resources; community emergency response resources and facilities including police, fire and emergency medical response facilities and plans; emergency communications facilities; hospitals and emergency medical facilities; designated evacuation routes; existing known hazard risks including flood hazard zones, storm surge zones, areas of coastal erosion hazard, landslide hazard areas, areas of geologic, geomorphic or hydrologic hazard; dams, bridges and related infrastructure; explosive or flammable materials transportation or storage facilities; contaminated sites; and other local risk factors;
- (f) all significant impacts on the environment, public health, and safety associated with the information required to be identified pursuant to the sections above, including all reasonably related short-term and long-term effects;
- (g) any adverse impact on the environment, public health, and safety that cannot be avoided should the proposed Facility be constructed and operated, and measures for monitoring and measuring such impacts;
- (h) any irreversible and irretrievable commitment of resources that would be involved in the construction and operation of the Facility;
- (i) any measures proposed by the Co-Applicants to minimize such impacts;
- (j) any measures proposed by the Co-Applicants to mitigate or offset such impacts; and
- (k) any monitoring of such impacts proposed by the Co-Applicants.

4.16 POLLUTION CONTROL FACILITIES - EXHIBIT 16

4.16.1 Overview

This Exhibit will contain completed copies of Hecate Albany's applications or notices for authorizations that will be issued by the NYSDEC pursuant to federally delegated authority in accordance with the CWA. These will include:

- Section 401 Water Quality Certification
- Section 402 State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity Permit No. GP-0-15.002, which will be required for construction
- Preliminary SPCC Plan

Fuel waste byproducts are not anticipated to be produced as a result of construction and operation of the Facility, including its interconnections and ancillary facilities. Transformers integrated into the inverters may, in some instances, contain greater than 500 gallons of liquid. In such cases, the liquid will be of a biodegradable source. For transformers with larger insulating oil volumes, secondary containment may be required, in which case these transformers will be equipped with an integrated steel or separate concrete catch basin for transformer oil, bar grating for a working surface on top of the skid, and a water level float alarm.

4.16.2 Proposed Studies

Exhibit 16 of the Application will follow the requirements outlined in Subsections (a) through (b) of Section 1001.16 of the Article 10 regulations, as follows.

As applicable, Exhibit 16 will contain:

- (a) Copies of completed applications for permits to be issued by the NYSDEC pursuant to federal recognition of state authority, or pursuant to federally delegated or approved authority, in accordance with the CWA, the Clean Air Act and the Resource Conservation and Recovery Act, and permits pursuant to Section 15-1503, Title 9 of Article 27, and Articles 17 and 19 of the New York State Environmental Conservation Law (ECL).
- (b) Such evidence as will enable the Commissioner of NYSDEC to evaluate the Facility's pollution control technologies and to reach a determination to issue, subject to appropriate conditions and limitations, permits for such technologies.

- (c) Such evidence as will enable the Siting Board to evaluate the Facility's pollution control technologies and to make the findings and determinations required by PSL Section 168.

4.17 AIR EMISSIONS - EXHIBIT 17

4.17.1 Overview

During operations, impacts to air quality will not occur as the Facility will produce electricity without generating air emissions. Rather, it is anticipated that the Facility will have a positive impact on air quality by producing electricity with zero emissions, which will offset air emissions from other sources of electrical generation such as fossil fuel powered generation plants. To demonstrate the net air emissions benefits of the Facility, the Application will evaluate the estimated annual displacements resulting from the Facility for the following pollutants: CO_2, NO_X, SO_2, mercury compounds, and lead compounds.

Potential impacts to ambient air quality are limited to temporary construction activities, typical of any residential subdivision or other large commercial development, including emissions from engine exhaust and dust generation during earth moving activities and travel on unpaved roads.

4.17.2 Proposed Avoidance, Minimization, and Mitigation Measures

The anticipated temporary increased emissions and dust from construction activities will not be of a magnitude or duration that will significantly impact local air quality. Dust control procedures will be implemented to minimize the amount of dust generated by construction activities following the Standards and Specifications for Dust Control as outlined in the NYS Standards and Specifications for Erosion and Sediment Controls (NYSDEC 2016).

4.17.3 Proposed Studies

Exhibit 17 will contain a discussion of the anticipated impacts to air quality expected to result from the proposed Facility’s construction, including from temporary emissions sources such as construction equipment, and an identification of appropriate control and mitigation measures to minimize adverse impacts.

4.18 SAFETY AND SECURITY - EXHIBIT 18

4.18.1 Overview

Overall safety and security concerns associated with the Facility are anticipated to be minimal. Security issues will be addressed prior to mobilization. During construction, site security may

include: security guards; cameras; and periodic inspections. Workers will be instructed to report observed or suspected suspicious activity or theft immediately. Local law enforcement officials will be summoned in accordance with the site's Emergency Response Plan (ERP) which will be developed with local input. During construction, the Facility will be managed according to the following site-security guidelines:

- All visitors will be required to check in before proceeding with their business.
- All visitors requiring unescorted access will be orientated on the general job site safety rules.
- All visitors must be escorted at all times, until the Site Orientation Training is complete.
- All gang boxes, pickups, equipment, panel arrays, fuel sources and fenced areas will be locked when not in use and during off-shift hours.
- A roaming Security Officer will be employed during off-shift hours.
- All security events will be reported to the Facility owner immediately.

4.18.1.1 Construction Security

A preliminary site security plan for Facility construction will be included in the Application and will address the following:

- The Facility laydown areas may be fenced in during construction. The Facility substation will be fenced in at a designated time during construction.
- Access roads will not be fenced in. Rather, a gate may be installed if an access road crosses an existing fence in the Facility Area.
- Commercially reasonable efforts, such as the use of video cameras or other surveillance technology, may be made as determined necessary to keep the work site in a reasonably orderly condition and to protect materials, equipment, and the completed work against theft and vandalism.
- The substation will have lighting that will be directed downward and include manual switches and/or motion sensors to minimize the effects of light pollution and reduce potential wildlife attraction.
- The Application will address additional security lighting considerations such as task lighting and full cut-off fixtures.

4.18.1.2 Operations Security

The Co-Applicants will be responsible for site safety and security during operation. A preliminary site security plan for Facility operation will be included in the Application and will address the following:

- The Facility substation will be fenced in and lighting provided at the entrance to the Facility. Lighting of the Facility will be directionally downward and towards the center of the Facility when lit.
- The solar arrays and inverters will be fenced and key locked at all times and may include motion lights.
- The Application will address additional security lighting considerations such as task lighting and full cut-off fixtures.
- Aircraft safety lighting is not required due to the low profile of solar facilities and will not be addressed in the Application.
- The Application will include a description of the cyber security program for the protection of digital computer and communication systems and networks that will support the Facility. The cyber security program will comply with current standards issued by the North American Electric Reliability Corporation.

4.18.1.3 Emergency Response Plan

Prior to the start of construction, Facility construction staff will prepare a comprehensive ERP that will include:

- Contingences that would constitute a safety or security emergency that may include, but are not limited to:
    - Medical emergency;
    - Property damage;
    - Fire;
    - Chemical release or spill; and
    - Inclement weather lighting.
- For each contingency identified, the ERP will include the following:
    - Emergency response measures;
    - Site clearance and control measures, if applicable; and
    - Agency notification procedures, as required by permits and regulations.

4.18.1.4 New York State Division of Homeland Security and Emergency Services Review

A preliminary site security and safety response plan will be submitted to the New York State Division of Homeland Security and Emergency Services when the Application is submitted.

4.18.1.5 Local Office of Emergency Management Review

A review of plans by the local office of emergency management is not required for towns with less than one million people.

4.18.1.6 Fire Response Plans

The Facility will have a Fire Protection and Prevention Plan. The objective of the plan is to reduce the risk of fire, prevent loss of life and property by fire, and to comply with Occupational Safety and Health Administration's (OSHA) standard on fire prevention, 29 CFR 1926.24. Topics covered in the Fire Protection and Prevention Plan will include, but not be limited to, the following:

- Each company pickup truck will be equipped with first-aid kits and fire extinguishers.
- Facility personnel are not trained firefighters and are not to fight fires beyond the incipient or initial stages, or as required to facilitate personal safety/egress. Personnel will be trained to summon professional help from local emergency response services and evacuate to designated zones of safety.
- Personnel will not be equipped with or trained in the use of professional firefighting equipment.
- The Facility will include one or more spill kits for a small hazardous leak.

The Facility's Fire Prevention Plan will include applicable procedures relating to fire prevention and protection. These procedures will include topics such as:

- Discussion of potential fires;
- Emergency reporting – fire, spills, and releases;
- Recommended fire responses (in consultation with local fire department)
- Locations of fire equipment and extinguishers;
- Control of smoking near fuel sources;
- Warning signs and site map;
- Flammables and combustibles – storage, dispensing, and use;
- Waste collection and removal; and
- Electrical fire prevention.

4.18.1.7 Contingency Plans for Fire Emergency or Hazardous Substance Instance

The Application will include recommended contingency plan(s) to be implemented in response to the occurrence of a fire emergency. No hazardous material is planned to be on-site.

4.18.1.8 Review by Local Emergency First Responders

The ERP in Section 4.18.3 will be provided to the local emergency first responders to solicit input.

4.18.2 Other Material Issues Raised by the Public and Affected Agencies

Hecate received comments regarding safety and security, as summarized in Table 4.18-1.

Table 4.18-1: Comments and Responses Regarding Safety and Security

Date	Commenter	Issue/Comment Summary	Response
2/20/2018	Open House Attendee	Safety – Attendee suggested contacting the local fire department in order to discuss an action plan in case of fire within the Facility Area.	Hecate Albany will develop a Fire Protection and Prevention Plan to eliminate the causes of fire, prevent loss of life and property by fire, and to comply with OSHA standards.

4.18.3 Proposed Studies

Exhibit 18 of the Application will follow the requirements outlined in Subsections (a) through (h) of Section 1001.18 of the Article 10 regulations, as follows.

Exhibit 18 will contain:

- (a) A preliminary plan for site security of the proposed Facility during construction of such Facility, including site plans and descriptions of the following site security features as planned:
    - (1) access controls including fences, gates, bollards and other structural limitations;
    - (2) electronic security and surveillance facilities;
    - (3) security lighting, including specifications for lighting and controls to address work-site safety requirements and to avoid off-site light trespass; and
    - (4) setback considerations for Facility components that may present hazards to public safety.

- (b) A preliminary plan for site security of the proposed Facility during operation of such Facility, including site plans and descriptions of the following site security features as planned:
    - (1) access controls including fences, gates, bollards, and other structural limitations;
    - (2) electronic security and surveillance facilities;
    - (3) security lighting, including specifications for lighting and controls to address work-site safety requirements and to avoid off-site light trespass;
    - (4) lighting of Facility components to ensure aircraft safety;
    - (5) setback considerations for facility components which may present hazards to public safety, and
    - (6) a description of a cyber security program for the protection of digital computer and communication systems and networks that support the Facility demonstrating compliance with current standards issued by a standards setting body generally recognized in the information technology industry, including, but not limited to, the federal Department of Commerce's National Institute of Standards and Technology, the North American Electric Reliability Corporation, or the International Organization for Standardization, and providing for periodic validation of compliance with the applicable standard by an independent auditor.
- (c) A preliminary emergency response plan to ensure the safety and security of the local community, including:
    - (1) an identification of contingencies that would constitute a safety or security emergency;
    - (2) emergency response measures by contingency;
    - (3) evacuation control measures by contingency; and
    - (4) community notification procedures by contingency.
- (d) A statement that the Co-Applicants have provided a copy of the plans required above in this section, and requested review of such plans and comment by the New York State Division of Homeland Security and Emergency Services.
- (e) A description of all on-site equipment and systems to be provided to prevent or handle fire emergencies and hazardous substance incidents.
- (f) A description of all contingency plans to be implemented in response to the occurrence of a fire emergency or a hazardous substance incident.

- (g) A statement that the Co-Applicants have provided a copy of the plans required in this section above, and requested review of such plans and comment by, local emergency first responders serving the area of the Facility site, and a review of any responses received.

4.19 NOISE AND VIBRATION - EXHIBIT 19

4.19.1 Overview

Solar facilities have minimal noise impacts, which are largely limited to daylight hours when noise is less likely to be of concern to the surrounding community due to higher ambient noise. Sound emitting sources at the Facility will be limited to the step-up transformers, electrical inverters within the various solar panel fields (during daylight hours when the system is generating electricity) and temporary noise from construction activities and infrequent operation and maintenance activities. There are no vibration issues associated with the operation of a solar facility.

Construction noise may be audible on a temporary basis and may impact the residences closest to the Facility. Once operational, noise from the step-up transformer and electric inverters is not expected to be audible outside the fence, but is not expected to be noticeable at nearby residences or other potentially sensitive receptors.

Analyses will be carried out to evaluate received sound levels at potential noise sensitive receptors within the Study Area due to the Facility alone and the cumulative level as stipulated in Section 1001.19(f) of Article 10. Impacts from low frequency noise, amplitude modulation, or tones will also be evaluated as part of the study.

4.19.2 Proposed Avoidance, Minimization, and Mitigation Measures

Planned measures to avoid or minimize the noise impacts from the Facility include the following:

- Hecate Albany will evaluate noise in relation to potentially sensitive receptors and use such information to help optimize the layout.
- If necessary, additional noise screening, reduction features, or low noise equipment features will be employed.
- Noise construction activities will be limited to the hours allowed by local ordinances (as applicable).

The Application will contain detailed information on avoidance and minimization measures once a noise impact study has been completed.

4.19.3 Local Laws and Regulations

The NYSDEC noise guidelines are defined in the publication; "Assessing and Mitigating Noise Impacts." This document states that sound pressure level increases from 0 to 3 A-weighted decibels (dBA) should have no appreciable effect on receivers; increases of 3 to 6 dBA may have the potential for adverse impact only in cases where the most sensitive of receptors are present; and increases of more than 6 dBA may require a closer analysis of impact potential depending on existing noise levels and character of surrounding land use. The NYSDEC guidance states that the 6-dBA increase is to be used as a general guideline. Although not explicitly stated in the policy, the 6-dBA increase has been applied to the minimum measured equivalent sound level (L_{eq}) or alternatively the time-averaged residual sound level (L_{90}) for licensing of other projects in New York State. There are other factors which should also be considered. For example, in settings with low ambient sound levels, an absolute limit of 40 dBA has been deemed adequately protective.

The NYSDEC guideline further states that, in terms of threshold values, the addition of any noise source should not raise ambient levels above 65 dBA in nonindustrial settings to protect against speech disturbance or above approximately 79 dBA for industrial environments for associated noise-related health and safety reasons. NYSDEC recommends that projects exceeding either of these threshold levels should actively explore the feasibility of implementing mitigation.

Based upon a preliminary review of existing local laws, ordinances, and regulations pertaining to noise, it does not appear that there are any quantitative noise standards directly applicable to the Facility.

4.19.4 Proposed Studies

An ambient noise monitoring program will be developed to determine baseline noise conditions at nearby noise sensitive receptors (i.e., residences) adjacent to the Facility Area. In order to identify noise sensitive receptors that may be impacted by the Facility, preliminary acoustic modeling of operational sound sources will be completed using the CadnaA acoustic modeling software program.

Operational sound sources consist of the inverters and collection and substation transformers. Inverters are used to convert locally generated DC current into AC power that is then routed to the substation through underground collector cables. Typically, each central inverter package has one or more inverters and a ventilation fan housed inside a pre-fabricated enclosure with an adjacent step up collection transformer. While the sound-level contribution of inverter packages

will be evaluated as part of the Application, they are generally considered a low-level source of noise and will be located among the arrays, away from the boundary of the Facility Area.

Substations have switching, protection and control equipment, and a transformer, which generates the sound generally characterized as a low humming. The planned transformers are relatively small (12 to 24 megavolt-ampere) compared to traditional utility scale generating facilities and will generally emit lower noise levels. There are three main sound sources associated with a transformer: core noise, load noise and noise generated by the operation of the cooling equipment. The core is the principal noise source and does not vary significantly with electrical load. The load noise is primarily caused by the load current in the transformer's conducting coils (or windings) and consequently, the main frequency of this sound is twice the supply frequency: 100 hertz (Hz) for 50-Hz transformers and 120 Hz for 60-Hz transformers. The cooling equipment (fans and pumps) may also be noise sources depending on fan design. During air-forced cooling, cooling fan noise is produced in addition to the core noise. After sunset, when the Facility no longer receives solar radiation, the inverters will not produce noise, and the transformers will be energized but likely operating under low-noise conditions using natural draft air cooling. Fans will not be operating due to lower nighttime heat loads.

CadnaA is a comprehensive three-dimensional acoustic software model that conforms to the International Organization for Standardization (ISO) standard *ISO 9613-2 Attenuation of Sound during Propagation Outdoors.* The engineering methods specified in this standard consist of full octave band algorithms that incorporate geometric spreading due to wave divergence, reflection from surfaces, atmospheric absorption, screening by topography and obstacles, ground effects, source directivity, heights of both sources and receptors, seasonal foliage effects, and meteorological conditions. Using manufacturer sound specifications and other site-specific data, received sound levels will be calculated at discrete receptors as well as within the entire Facility Area, which will be documented within the Application in the form of sound contours.

Once preliminary modeling has been conducted, baseline noise monitoring is proposed to be completed at up to five representative locations based on the Facility design and sensitive receptor locations. A combination of long-term (24-hour) or short-term (30-minute) sound measurements during both daytime and nighttime hours will be used to characterize the existing acoustic environment. Type 1 precision sound level meters will be employed to collect data in broadband and statistical sound level metrics as well as full and 1/3 octave bands spanning a frequency range of 6.3 Hz to 20 kilohertz (kHz). That information will be used to compare existing noise levels to the anticipated operational sound of the Facility to determine the potential for

impacts and assess Facility compliance relative to applicable noise criteria. The aim is to first establish a baseline rating classification from the predicted sound pressure level spectrum of the noise sources, and then, through applying a series of correction factors, determine a final rating that should indicate the expected subjective response by receptors, ranging from "No Complaints" to "Widespread Complaints."

Noise produced during Facility construction will also be analyzed and documented in the Application. In comparison to other facilities, the construction phase for solar energy facilities is shorter in duration. Facility construction will require the intermittent use of heavy equipment that might be periodically audible at offsite locations. Received sound levels will fluctuate, depending on the construction activity, equipment type, and distance between noise source and receptor. Sound from construction equipment will vary dependent on the construction phase and the number and class of equipment at a location at any given time. An inventory of the anticipated construction equipment and vehicles will be obtained for the Facility and an analysis will be conducted to predict received sound levels at noise sensitive receptors.

Compliance will be assessed relative to the applicable criteria, including NYSDEC noise guidelines, as described in Section 4.19.3. As a secondary form of assessment, the modified Composite Noise Rating (mCNR) method will be used to assess noise impacts and the need for potential mitigation measures. This methodology incorporates several factors including the expected sound levels from the Facility, existing background sound levels, character of the noise (e.g., tonal, impulsive), duration, and subjective factors, such as community attitude or history.

4.20 CULTURAL RESOURCES - EXHIBIT 20

Studies of cultural resources, including archaeological sites and historic architectural resources, will be conducted to identify, assess, and address potential impacts of the construction and operation of the Facility on buildings, structures, objects, sites, and districts that are listed in or eligible for inclusion in the National Register of Historic Places (NRHP). These studies involve a number of steps, which will be completed as appropriate prior to construction of the Facility:

- Define the Area of Potential Effects (APE) for archaeological sites and historic architectural resources;
- Perform a Phase IA Literature Search and Sensitivity Study to establish the pertinent cultural-historical contexts for cultural resources in the study area, including information on previously inventoried resources;
- Perform a Phase IB Field Investigation of the Facility APE to identify archaeological sites;

- Perform Phase II Site Evaluations, if necessary, to determine NRHP-eligibility.
- Develop Facility designs and other strategies to help reduce or avoid impacts to NRHP-eligible archaeological sites, such as through micrositing of Facility elements;
- Mitigate NRHP-eligible archaeological sites that cannot be avoided through Phase III Data Recovery or other means with the exception of Native American burial sites. Native American burial sites will be left in place and not disturbed.
- Process, analyze, and curate archaeological artifacts and records;
- Provide the Stockbridge-Munsee Community Band of Mohican Indians the opportunity to have a Native American monitor(s) present during all archaeological fieldwork;
- Inventory architectural resources listed in or potentially eligible for listing in the NRHP located within the APE for architecture;
- Avoid or minimize impacts to architectural properties as possible;
- Devise mitigation strategies for any adverse impacts to NRHP-eligible architectural resources; and
- Develop an Unanticipated Discoveries Plan and Procedures to be followed during Facility construction.

On August 30, 2017, the Co-Applicants met with the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) staff in their offices in Waterford, New York. During the meeting, the Co-Applicants described the proposed Facility and discussed an appropriate approach to cultural resources studies in support of the Application. The following summarized key items from these initial outreach efforts, which will be incorporated into the Application:

- OPRHP indicated that the APE for archaeological resources (direct effects) would constitute the area of significant ground disturbance.
- OPRHP defined significant ground disturbance to be any excavation or grading associated with the construction of access roads, inverter pads, and the substation, as well as any buried collection lines installed via an open trench greater than 1 foot (0.3 meter) wide, and any construction staging areas that require grading, paving, and/or the installation of crushed stone.
- OPRHP indicated that Phase IB survey would be necessary only for those areas of significant proposed ground disturbance.
- OPRHP indicated that it would not consider installation of posts (by pile-driver or similar device) for PV panel supports or fencing to constitute a significant ground disturbance with

a potential adverse impact on archaeological resources and, consequently, no Phase 1B archaeological survey would be necessary for these areas.

  - installation of posts (by pile-driver or drilling) for PV panel supports or fencing, and

- If archaeological resources are identified within the Facility Area, the Co-Applicants will explore modifying the layout to avoid impacts to archaeological resources.
- OPRHP indicated that visual impacts to historic resources should be assessed with priority given to publicly accessible views of each historic property and that internal, private views were a lower priority.
- OPRHP indicated that potential visual effects to the overall traditional vernacular landscape should be evaluated, in addition to evaluation of effects on individual historic properties.
- OPRHP indicated that their online program Cultural Resources Information System (CRIS) should be utilized for project submittals and that archaeological and historic architectural studies should be submitted in separate reports.

Phase IA background studies addressing approximately 90% of the Facility Area were completed in 2017. The study included a reconnaissance survey, composed of a visual assessment, site walkover, and photo-documentation; background research; and archaeological site file searches. This and any future cultural resource studies will be conducted in consultation with the OPRHP, which serves as New York's State Historic Preservation Office (SHPO). In addition, cultural resources studies have been and will be performed in accordance with applicable state and federal guidelines, including the New York Archeological Council's (NYAC) *Standards for Cultural Resource Investigations and the Curation of Archeological Collections in New York State* (1994), the *New York State Historic Preservation Office Phase I Archeological Report Format Requirements* (2005), and the agency's *Recommended Standards for Historic Resources Surveys* (2010). Several sections of Title 36 of the *Code of Federal Regulations* (CFR) are also applicable, including "Determinations of Eligibility for Inclusion in the National Register of Historic Places" (36 CFR 63) and "Protection of Historic Properties" (36 CFR 800).

4.20.1 Overview

Historic impacts to the Facility Area and surrounding area are related to early Euro-American settlement, land clearing, and agricultural activities, such as logging, plowing, disking, and planting. Previously documented impacts within the Facility Area include those associated with access road (utility and farm) construction, installation of subsurface utilities, and irrigation ditch excavation. While most of the Facility Area is currently composed of tree-lined agricultural fields

interspersed with pockets of forest and shrub, there are several existing structures within the Facility Area, as well as several non-extant buildings or map-documented structures (MDS). Disturbances associated with construction (grading, filling, vegetation and tree removal) can be expected in these locations. Additional disturbances to the Facility Area include an overhead electrical transmission line ROW that bisects the southern portion and an abandoned railroad line that forms the northwestern boundary, then bisects the southern portion.

4.20.1.1 Archaeological Resources

The Phase IA archaeological investigation included a site file research for the Facility Area which was conducted using the OPRHP's CRIS. The New York State Inventory and Register, the NRHP, and the NRHP-eligible and State/NRHP-proposed lists were also reviewed. Evidence for past land uses by precontact, protohistoric (contact), and historic (postcontact) Native American groups was based on available information from the OPRHP and other local sources. Generally, aboriginal inhabitants had a preference for streams, river and marsh associations, knolls, and small bluffs or ridges.

Site file searches on the CRIS indicated that portions of the Facility Area are considered archaeologically sensitive. No previously identified archaeological sites were identified within the initial investigation Facility Area. Archaeological resources recorded within 1.6 kilometers (km) (1.0 mile) of the Facility Area are summarized in Table 4.20-1. A precontact archaeological site (Unique Site Number [USN] 00102.000034) has been identified 1.3 km (0.8 miles) northwest of the Facility Area. Very little information about this site was available at OPRHP, but it appears to be associated with New York State Museum (NYSM) 2785. A review of this record online describes NYSM 2785 as the site or sites identified by Parker as "camps near South Bethlehem" (Parker 1922). USN 00102.000554 (NYSM 10913, a short-term, lithic reduction site, located about 1.6 km [1.0 mile] to the northeast), was identified by the NYSM Anthropological Survey in 1999.

Table 4.20-1 Recorded Archaeological Sites within 1.6 km (1.0 mi) of the Facility Area

OPHRP USN	Name/Other Site Nos.	Distance from Facility Area	Time Period	Site Type	NRHP Determination
00102.000034	NYSM 2785; ACP ALBY35	1.3 km (0.8 mi) NW	Precontact	Camp	Undetermined
00102.000554	Pictuay Road/ NYSM 10913	1.6 km (1.0 mi) NE	Precontact	Camp	Undetermined

(Source: CRIS 2017)

Potential Facility Area impacts to archaeological resources could result from excavation and earthmoving during construction. They may also occur as a result of prolonged or extensive vehicle traffic on unprotected ground surfaces. Consequently, the Facility Area APE for archaeological resources is defined as the designed limits of temporary and permanent ground disturbance from the construction of all Facility elements, including panels, access roads and intersections, collection lines, laydown and storage areas, O&M facilities, substations, and transmission lines.

4.20.1.2 Historic Architectural Resources

The Phase IA archaeological investigation site file searches also indicated that there are two previously identified historic properties within close proximity to the Facility Area, as summarized in Table 4.20-2: the Rowe Farm (USN 00103.000325); and the Kinley Farm (USN 00103.000217). OPRHP site files indicate that the Kinley Farm is eligible for listing in the NRHP, while the Rowe Farm currently has an undetermined NRHP-eligibility status (CRIS 2017). Due to the Facility Area's proximity to these identified properties, archaeological deposits associated with these properties may exist within the Facility Area.

Table 4.20-2 Previously Identified Historic Resources within 0.8 km (0.5 mi) of the Facility Area

OPRHP USN	Name	Distance from the Facility Area	Construction Date	Resource Type	NRHP Determination
00103.000325	Rowe Farm	18 meters (60 feet) south	circa 1820	farmhouse; outhouse; smokehouse, and	Undetermined
00103.000217	Kinley Farm	169 meters (554 feet) east	circa 1870	farmhouse; 4 barns, 2 silos	Eligible

Two MDSs, a railroad bed, and several storage and farm-related buildings are also present within the Facility Area.

There will be no direct impacts to architectural resources. Impacts to historic architectural resources are expected to be visual and, therefore, limited to potential alterations in setting. Changes in the existing visual setting of historic properties that are NRHP-listed because of, or

partially due to, scenic quality or adding to scenic quality may affect the historical integrity of the property. The extent, or footprint, of such potential impacts depends upon the height, massing, and surface characteristics of Facility components, as discussed in greater detail in Section 4.24.

4.20.2 Extent of Quality and Information Required

4.20.2.1 Archaeological Resources

Based on the results of the Phase IA cultural resources investigation, the Facility Area has the potential for adverse effects on precontact or historic archaeological resources, and historic properties in and immediately adjacent to the Facility Area. A Phase IB archaeological survey is proposed for all unsurveyed areas within the Facility Area to determine the presence or absence of archaeological sites and cultural materials within the Facility Area. Once approved by the OPRHP and Stockbridge-Munsee Community Band of Mohican Indians, the Phase IB archaeological survey will include a pedestrian survey and a combination of controlled surface inspections and subsurface shovel testing within the APE. While the overall Facility Area encompasses a much larger area, the archaeological APE or the archaeological survey area is proposed to be limited to locations that will involve intensive ground disturbance.

4.20.2.2 Historic Architectural Resources

A Historic Resources survey will be conducted to assess the potential impact of the Facility on historic resources, including structures, buildings, districts, and objects. Typically, the APE for historic resources includes the geographic area or areas within which the undertaking may directly or indirectly cause changes in the character of, or use of, historic properties, if any such properties exist. Proposed activities for the historic resources survey include a pre-survey meeting with an OPRHP representative prior to field work, documentation of all properties 50 years or older within viewshed of the Facility Area (identification, evaluation and recommendation), historic resources report (following OPRHP guidelines and including OPRHP structure forms for all identified properties), and an upload of the final report to the online CRIS program.

4.20.3 Proposed Avoidance, Minimization and Mitigation Measures

4.20.3.1 Archaeological Resources Avoidance, Minimization, and Mitigation Measures

Planned measures to avoid or minimize the impacts on archaeological resources from the Facility include the following:

- The Facility design will be adjusted in an attempt to avoid identified archaeological resources that are potentially eligible for inclusion in the NRHP.
- Known Native American burial sites will be avoided.
- Available data will be analyzed to identify landscape features that may have an elevated potential for containing archaeological resources, and efforts will be made to avoid such areas in the Facility design or to ensure that appropriate archaeological survey is conducted within them. If an archaeological site cannot be avoided, the Co-Applicants will consider undertaking a Phase II archaeological investigation or other study (after consultation with OPRHP) to assess the site's NRHP potential, evaluate potential Facility impacts in detail, and identify possible alternatives for impact avoidance, minimization, or reduction.
- An Unanticipated Discoveries Plan will be created to describe the response process in the event of the unexpected discovery of cultural resources during construction.
- Monitoring during construction activities involving earth excavation may be conducted by a professional archaeologist and/or a Native American monitor to identify and record any archaeological deposits encountered.
- Hecate Albany will maintain contact with representatives of the Stockbridge-Munsee Community Band of Mohican Indians to address concerns about potential Facility impacts to the Native American cultural heritage.

If reasonably unavoidable impacts to NRHP-eligible archaeological resources from the Facility are identified, Hecate Albany will consult OPRHP, and as appropriate, other concerned agencies or pertinent stakeholders to identify specific measures to mitigate the impacts. Among the possible measures to be employed are:

- Phase III archaeological data recovery investigations to collect information from NRHP-eligible archaeological sites that will be altered or destroyed by construction.
- Public outreach or similar activities that will offset a loss of archaeological resources.
- Recordation by a professional archaeologist of archaeological objects or deposits encountered during construction in accordance with the Unanticipated Discoveries Plan.

4.20.3.2 Historic Architectural Resources Avoidance, Minimization, and Mitigation Measures

Planned measures to avoid or minimize the visual impacts from the Facility on NRHP-listed or NRHP-eligible historic architectural resources include the following:

- Other than manufacturer's standard markings, Facility infrastructure will be free of advertising and high-visibility commercial markings.
- Subsurface routing of collection lines will be employed to the extent practicable.
- To the extent feasible, ancillary facilities and transmission corridors will be sited away from historic architectural resources. If not possible, enhanced discovery procedures may be considered.
- Operators will maintain the Facility consistent with industry standards over the life of the Facility.
- The PV panels and other aboveground elements of the Facility will be removed during decommissioning (excepting interconnection facility equipment owned by the interconnection utility).

If reasonably unavoidable impacts to NRHP-listed or NRHP-eligible architectural resources are identified, Hecate Albany will consult with OPRHP, other concerned state or federal agencies, local authorities, and pertinent stakeholders to identify specific measures to mitigate the impacts.

4.20.4 Proposed Studies

Exhibit 20 shall contain:

(a) A study of the impacts of the construction and operation of the Facility, interconnections and related facilities on archaeological resources, including:

(1) a summary of the nature of the probable impact on any archeological/cultural resources identified addressing how those impacts shall be avoided or minimized;

(2) a Phase IA archaeological/cultural resources study for the APE for the Facility Area and any areas to be used for interconnections or related facilities, including a description of the methodology used for such study;

(3) a Phase IB study, as determined in consultation with OPRHP;

(4) where warranted based on Phase I study results as determined in consultation with OPRHP, a Phase II study based on intensive archaeological field investigations shall be conducted in those areas where facilities are planned to assess the integrity and significance of cultural resources identified in Phase I studies. Phase II shall be designed to obtain detailed information on the integrity, limits, structure, function, and cultural/historic context of an archaeological site, as feasible, sufficient to evaluate its potential eligibility for listing on the New York State Inventory and Register or the NRHP.

The need for and scope of work for such investigations shall be determined in consultation with OPRHP and DPS;

(5) a statement demonstrating that all important archaeological materials recovered during the Facility cultural resources investigation shall be cleaned, catalogued, inventoried and curated according to NYAC standards; that to the extent possible, recovered artifacts shall be identified as to material, temporal or cultural/chronological associations, style and function; and that the Facility archaeologists shall provide temporary storage for artifacts until a permanent curatorial facility is identified; and

(6) an Unanticipated Discovery Plan that shall identify the actions to be taken in the unexpected event that resources of cultural, historical, or archaeological importance are encountered during the excavation process. This plan shall include a provision for work stoppage upon the discovery of possible human remains. In addition, the plan shall specify the degree to which the methodology used to assess any discoveries follows the most recent Standards for Cultural Resource Investigations and Curation of Archaeological Collections in New York State. Such an assessment, if warranted, shall be conducted by a professional archaeologist, qualified according to the standards of the NYAC.

(b) A study of the impacts of the construction and operation of the facility and the interconnections and related facilities on historic resources, including the results of field inspections and consultation with local historic preservation groups to identify sites or structures listed or eligible for listing on the New York State Inventory and Register or the NRHP within the viewshed of the facility and within the study area, including an analysis of potential impact on any standing historical structures which appear to be at least 50 years old and potentially eligible for listing in the New York State Inventory and Register or the NRHP, based on an assessment by a person qualified pursuant to federal regulation (36 CFR 61).

4.21 GEOLOGY, SEISMOLOGY AND SOILS - EXHIBIT 21

4.21.1 Overview

This Exhibit will include a study of the geology, seismology, and soils impacts of the Facility consisting of the identification and mapping of existing conditions, an impact analysis, and proposed impact avoidance and mitigation measures as determined by studies included in Appendices to this Exhibit, which will be submitted as part of the Application.

4.21.1.1 Existing Surface Slopes

To the extent practicable, the proposed Facility components will be sited in relatively flat area. Approximately 27% of the Facility Area has been identified as having slopes greater than 25% (NRCS 2018). Detailed maps delineating existing slopes on and within the drainage area potentially influenced by the Facility and interconnections will be included in an Appendix to the Application. Specifically, the maps will identify potential receptor areas of stormwater runoff, including tributaries to the Hudson River and sources of drinking water.

4.21.1.2 Facility Plans

A preliminary Facility layout has been developed (see Figure 3). Proposed site plan drawings showing existing and proposed contours at 2-foot intervals and a sufficient scale, for the Facility and interconnections, to depict all proposed structures, graveled and vegetative areas, and construction areas will be included in an Appendix to the Application.

The Co-Applicants will identify sensitive environmental, agricultural, and human health and safety receptors for potential hazards associated with construction on slopes greater than 25%. Facility components are not anticipated to be located on steep slopes; however, for any Facility components proposed to be located in areas of extremely steep slopes, the Application will assess the risk of potential impacts associated with construction on these areas, including potential for extreme rainfall events leading to severe erosion hazards and water quality impacts at downstream water resources and aquatic habitats. Mitigation and avoidance measures, including alternative siting of Facility components in these areas will be discussed in the Application.

4.21.1.3 Excavation and Backfill Analysis

Prior to placing fill for access roads and other Facility features, the contractor will either remove vegetation, topsoil, organic subsoils, and other unsuitable materials or if determined suitable by the engineer, the ground will be rolled and fabric laid before laying road gravel and cap. Unstable subgrades will be removed and replaced with compacted structural fill or crushed stone as necessary; and the subgrade will be compacted. Structural or common fill may be placed to reach the required grade.

Major cut or fill activity is not anticipated during construction of the Facility. The land slopes gently to the south and east and is composed of low rolling hills interspersed with nearly flat fields and, as such, cut or fill activity will be minimal. Detailed descriptions and preliminary calculations of

the quantity of cut and fill necessary to construct the Facility, including separate calculations for topsoil, sub-soil and rock will be included in the Application.

Weeds and other invasive species may be introduced to croplands during movement of heavy equipment across the Facility Area. Generally, equipment staging and operations will occur on cleared, graded, gravel construction roads free of debris. However, the equipment used to originally clear, grade, and excavate at the Facility Area might collect various invasive plants and seeds and transport them to other areas. Equipment coming from other project sites will also need to be monitored and cleaned as needed.

Accordingly, an Invasive Species Plan will be developed specific to the Facility construction activities for identifying the presence of invasive species in spoil material and to prevent the introduction and/or spread of invasive species by the transport of fill material to or from the site. The Invasive Species Plan will detail procedures to reduce the introduction of invasive vegetation to all areas disturbed during construction.

4.21.1.4 Fill and Construction Materials

The construction/access roads for the Facility will be about 15 to 20-foot wide gravel roads designed to meet the load-bearing requirements of truck traffic transporting concrete, gravel, and PV panel components to the array sites over the life of the Facility.

Native soil/fill may be separated from the base material to prevent fine soil particles from migrating into the gravel base material and preserve road base integrity. During construction, additional area may be compacted on each side of the gravel roads to allow for the additional construction traffic. Following construction, these compacted areas will be scarified, as necessary, before seeding.

Temporary staging/storage areas, which will include construction offices and trailers, as well as areas for concrete batch sites (if necessary) will also be constructed with gravel. Concrete will be used for foundations for the substation and pads for each inverter skid, electrical transformers, and other electrical substation gear.

Detailed descriptions and preliminary calculations of the amount of fill, gravel, asphalt, and surface treatment material to be brought in to the Facility Area and interconnections will be included in the Application.

4.21.1.5 Material to be Removed from the Facility Area

Excavated soils during construction are typically reused on site for backfill and contour smoothing with the goal of not removing soil from the Facility Area. Large stone and bedrock will be crushed for use in the immediate Facility Area. Area surveys and geotechnical investigations will likely be conducted to determine if these conditions exist within the limits of disturbance. A detailed description and preliminary calculations of the proposed type and amount of cut material or spoil to be removed from the Facility Area will be developed as needed.

4.21.1.6 Excavation Techniques

The PV panels for the proposed Facility will be ground-mounted on a low-profile racking system that will have a small post footprint, typically consisting of small I-beam posts, driven into the ground. As the posts are driven, there is no need for excavation to install the racking system. Minimal excavation will be required for construction of the Facility and it will primarily be required for the construction of access roads, substation and interconnection facilities, and for electrical collection lines throughout the Facility.

The following is an overview of excavation techniques that could be employed by the contractor. The contractor will ultimately be responsible for the equipment and methods used during construction.

- Following topsoil removal by bulldozer and pans, excavators will be used to excavate a shallow hole for spread foundation. Alternatively, the design may require driven pile foundations. Excavated subsoil and rock will be segregated from stockpiled topsoil.
- Direct burial methods via cable plow, rock saw and/or trencher will be used during the installation of underground interconnect lines whenever possible. In general, cable may be buried 24 to 36 inches deep depending on soil conditions, depth to bedrock, and land use. A temporary footprint of vegetation and soil disturbance of up to about 3 feet will result due to machinery dimensions and backfill/spoil pile placement. Agricultural topsoil within the Facility footprint will be stripped and segregated from excavated subsoil. Subgrade soil will be replaced around the cable, and topsoil will be replaced at the surface, immediately after installation of the cable.
- Open trench installation may be required where there are unstable slopes, excessive unconsolidated rock, or standing or flowing water or where a wider trench is needed for a larger number of parallel circuits. Open trench installation is performed with a backhoe and will generally result in a disturbed trench 3 to 6 feet wide. Similar to a trench cut by a

trencher or rock cutter, a Bobcat or small bulldozer will be used to replace soils and restore the grade.

- To avoid or minimize impacts to specific environmental or important archaeological features, directional drilling may be used at specific locations following discussions with the United States Army Corps of Engineers (USACE), NYSDEC, and SHPO. If horizontal direction drilling is utilized, the Co-Applicants will perform an evaluation of the suitability of existing soils and shallow bedrock, including an assessment of frac-out risk potential, based on the results of the preliminary geotechnical investigations and publicly available soils and bedrock data. If frac-out is a risk, then a contingency plan will be prepared to identify site specific risk, mitigation, and response methods.
- The 115 kV interconnects will be adjacent to the existing 115-kV lines and, therefore, the interconnect lines will be very short and within the Facility Area boundary. Other medium voltage collection that may be routed aboveground (but not preferred due to shading impacts) will be strung along either wooden or steel pole structures about 40 feet in height. Aboveground line wooden poles will be delivered from the staging area and installed in augured holes, backfilled with gravel, guyed where needed and anchored.

4.21.1.7 Temporary Storage Areas

Anticipated cut or fill storage areas will be described and depicted on a site plan will be included in an Appendix to the Application.

4.21.1.8 Existing Soils for Construction

A preliminary geotechnical study will be conducted for the Facility Area including borings, test pits, laboratory resistivity testing, thermal resistivity testing, in-situ electrical resistivity testing and geophysical investigations as determined by the engineer. The preliminary geotechnical study will identify and provide rationale for the locations of the proposed soil borings and describe the sampling methods and types of geotechnical and geophysical analyses that will be performed. Boring locations will be selected to characterize each of the mapped general soil associations and shallow bedrock types in the Facility Area. The results of preliminary geotechnical tests will serve to evaluate:

- Foundation designs for the tracker posts and equipment foundations;
- Excavation techniques, including blasting (if applicable, though not anticipated);
- Preliminary cut and fill calculations;
- Suitability of existing soils for re-use as fill; and

- Crossing methods of sensitive environmental resources by collection lines and transmission lines.

The Application will include a description of the characteristics and suitability for construction purposes of the material excavated for the Facility and of the deposits found at foundation level, including factors such as soil corrosivity, bedrock competence, and subsurface hydrologic characteristics.

4.21.1.9 Blasting Plan

No blasting is anticipated for the proposed Facility construction. As discussed above, a preliminary geotechnical study will be performed at the Facility Area and will include information on anticipated depth to bedrock. If bedrock is encountered during excavation, it will generally be ripped with a backhoe or ripper. If the bedrock is not anticipated to be able to be ripped, it will be excavated by pneumatic jacking or other excavation techniques. Bedrock is not anticipated to be removed for trenching due to the shallow nature of the trenches. Though not anticipated to be required, blasting would be utilized only if the other potentially available methods of excavation are not practicable. It would be conducted in compliance with a Blasting Plan, and in accordance with all applicable laws and good engineering practices to avoid impacts to sensitive receptors. If bedrock is encountered during the tracker post installation, then drilling is the most common method. The geotechnical study will determine the bedrock depth and whether drilling is required.

4.21.1.10 Impacts from Blasting

No blasting is anticipated. If blasting were to be required, the blasting plan would provide an assessment of potential impacts of blasting to environmental features, above-ground structures and below-ground structures such as pipelines and wells.

4.21.1.11 Blasting Mitigation Measures

No blasting is anticipated. If it were required, information generated from a blasting plan and geotechnical study would be used to identify and evaluate any reasonable mitigation measures regarding blasting impacts, including the potential use of alternative technologies and/or location of structures.

4.21.1.12 Regional Geology, Tectonic, and Seismology

The Facility will be located entirely within Albany County which is topographically diverse, with the Helderberg Mountains to the west and the Hudson Valley to the east, characterized by very low relief, rocky ridges, and dissected drainages caused by glacial deposits. The Facility Area,

like much of the region along the Hudson River, is part of the Hudson-Mohawk Lowlands physiographic region. The average elevation of the Hudson-Mohawk Lowlands is 300 feet amsl and gradually increases to approximately 880 feet amsl at its western edge (USDA 1992). The Facility Area is located in a transitional area between the Helderberg Mountains and Hudson Valley and is bounded to the west by the sharp rise of the Helderberg Escarpment. The Facility Area slopes gently to the south and east and is composed of low rolling hills interspersed with nearly flat fields. Elevations within the Facility Area range between 89 feet and 249 feet amsl.

The bedrock geology of the Facility Area is part of the Normanskill and Schenectady Formations. The Normanskill Formation is heavily folded and faulted and forms bedrock ridges that overlook the western banks of the Hudson River. Bedrock may be exposed within the Facility Area along these ridges and consists of Ordovician slate, shale, greywacke, and chert. In lower areas, bedrock may be greater than 5 feet below ground surface (USDA 1992). The Schenectady Formation is the youngest of the Ordovician rocks and consists of relatively undeformed gray sandstones and shales.

Based on the 2014 New York State Hazard Map (USGS 2014a), Albany County is located in an area with a 2% or less probability over 50 years of peak acceleration exceeding 10% to 14% of the force of gravity. This indicates relative low probability for seismic activity and bedrock shift in the vicinity of the Facility Area. The most recent earthquake in the vicinity of the Facility Area was a 1.8 magnitude earthquake that occurred in 2007 approximately 5.3 miles west of the Facility Area (USGS 2018a).

4.21.1.13 Impacts to Regional Geology

Based on the limited spatial scale of the Facility, construction and operation of the Facility is not expected to result in negative impacts on geology and topography on a regional scale. No significant impacts on geology are anticipated from construction and operation of the Facility. Minimal earthwork will be required as the Facility Area primarily consists of flat terrain. Only minimal excavation will be required for the Facility as posts supporting the solar panel racking systems will be driven into the ground and, therefore, will not require excavation.

Karst conditions exist exists immediately adjacent to the Facility Area to the west. The karst geology consists of carbonate rocks buried under less than 50 feet of glacially derived insoluble sediments. Rock types consists of limestone and dolostone (USGS 2014b). Site specific preliminary karst condition assessments will be conducted to assess the potential for karst formation. A SPDES permit will be obtained prior to construction initiation in which stormwater

best management practices will be developed specifically to protect the karst features at the Facility Area, if present. Precautions will also be taken to seal potential pathways for water with concrete over exposed bedrock subgrades. Existing karst features in the vicinity of the Facility Area will be identified on maps and more fully described in the Application.

Construction and operation of the Facility could impact small portions of the Facility Area topography where construction occurs in the following situations:

- Surface soil could be compacted during construction of the solar arrays and support structures (i.e., access roads and underground power lines).
- Local topography around the solar arrays and roads may be changed to accommodate the requirements to construct and operate the arrays.
- Local drainage patterns may be impacted as a result of construction activities. The Stormwater Pollution Protection Plan (SWPPP) required as part of the SPDES permit will address these impacts. The SWPPP will take into consideration karst features in relation to the drainage patterns to ensure that karst development is not accelerated.

As additional geotechnical subsurface investigations/data and construction plans are advanced, the Application will include any specific impacts to regional geology due to the construction and operation of this Facility.

4.21.1.14 Seismic Analysis

As described above, USGS data indicate that the Facility Area is not located within an active seismic region. No significant tectonic faults have been mapped in Albany County, and there are no known active faults (i.e., younger than 1.6 million years) in this region (USGS 2018b).

4.21.1.15 Soils Map

A map delineating soil types on the Facility Area will be included in an Appendix to the Application and categorized by mapping unit and hydric characteristics. As applicable, the map will also show all locations designated as applicable:

- Prime farmland;
- Prime farmland, if drained;
- Unique farmland;
- Farmland of Statewide importance; and
- Farmland of local importance.

The Application will include a discussion describing how the siting, construction, and operation of the Facility will avoid or otherwise minimize impacts to farmland with these designations, including a description of the proposed methods for soil stripping, storage and replacement upon the completion of construction, where disturbance to such areas cannot be avoided.

Methods for identifying the locations of drainage tile in designated farmland will also be included in the Application, along with a description of practices for restoration of farmland drainage systems following construction. The Co-Applicants will consult with the Albany County Soil and Water Conservation District for records of drainage improvements within the Facility Area.

The Co-Applicants met with the NYSDAM on March 14, 2018 to discuss impacts to farmland.

4.21.1.16 Soils Analysis

The Facility Area is dominated by Hudson-Rhinebeck soils, which are formed in glacial till and found on dissected lake plains. These soils are nearly level to steep, moderately well drained to somewhat poorly drained, fine textured, and very deep. Eight soils from six different soil series are present within the Facility Area, representing a variety of landforms, textures, and drainages, including flood plains and rock outcrops (USDA 1992).

This section will include a detailed description of the characteristics and suitability for construction purposes of each soil type identified above, including a description of the soil structure, texture, percentage of organic matter, and recharge/infiltration capacity of each soil type; a discussion of any de-watering that may be necessary during construction and whether the Facility shall contain any components below grade that would require continuous de-watering.

Geotechnical investigations, consisting of subsurface explorations, laboratory analysis, and geotechnical design recommendations will be conducted to characterize the soil conditions in the proposed locations of Facility components, and address the suitability of these soils for construction of the Facility.

4.21.1.17 Subsurface Analysis and Impacts

This section requires maps, figures, and analyses delineating depth to bedrock and underlying bedrock types. It will include vertical profiles showing soils, bedrock, water table, seasonal high groundwater, and typical foundation depths on the Facility Area, and any area to be disturbed for roadways to be constructed and all off-site interconnections required to serve the Facility. An evaluation or potential impacts due to Facility construction and operation, including any on-site wastewater disposal system, based on information to be obtained from available published maps

and scientific literature, review of technical studies conducted on and in the vicinity of the Facility, and on-site field observations, test pits and/or borings will be provided, as available.

Construction activities such as clearing and grubbing; grading; trenching; excavation; movement of heavy equipment; and cleanup activities may affect soil. Potential soil and agricultural productivity-related impacts in the portion of the Facility Area on which construction will occur may include:

- soil compaction and rutting;
- erosion and sediment runoff during precipitation events;
- introduction of rocks into the topsoil, impeding agricultural practices;
- contamination due to leaks and spills from construction vehicle operation and maintenance;
- introduction of weeds or other invasive species; and
- loss of productive agricultural land.

The Application will describe soil constraints, potential impacts of Facility components on soil resources and agricultural productivity, and the measures that will be implemented during construction and operation to avoid or minimize impacts on soil resources for the following:

- compaction and rutting;
- stony/rock soils or shallow-depth-to-bedrock soils;
- erosion and sedimentation;
- soil contamination;
- agricultural productivity; and
- drainage features.

4.21.1.18 Foundation Evaluation

The PV panels for the proposed Facility will be ground-mounted on a low-profile racking system that will have a small post footprint, typically consisting of small I-beam posts, driven into the ground upon which the tracker/panel framework is mounted. Foundations may be required for inverter packages and components of the substation and interconnection facilities. Hecate Albany will conduct an evaluation to determine suitable equipment foundations for these facilities, including:

- A preliminary engineering assessment to determine the types and locations of foundation to be employed. The assessment will investigate the suitability of such foundation types

as spread footings, caissons, or piles, including a statement that all such techniques conform to applicable building codes or industry standards;

- The tracker posts will be driven with a small pile driver. It is not anticipated that larger pile driving will be needed for the Facility equipment (inverters, substation); however, if larger piles are to be used, a description and preliminary calculation of the number and length of piles to be driven, the daily and overall total number of hours of pile driving work to be undertaken to construct the facility, and an assessment of pile driving impacts on surrounding properties and structures due to vibration will be conducted; and
- Results from the geotechnical investigations conducted for the Facility Area will be used to inform this section for the Application submission.

4.21.1.19 Facility Vulnerability to Earthquake and Tsunami

As noted above, the Facility Area appears to have minimal vulnerability associated with seismic events based on review of available data. Further geotechnical research and evaluations will update this analysis.

Due to the inland site location, there is no vulnerability associated with tsunami events.

4.21.2 Proposed Studies

Exhibit 21 of the Application will follow the requirements outlined in Subsections (a) through (s) of Section 1001.21 of the Article 10 regulations as follows.

Exhibit 21 will contain a study of the geology, seismology, and soils impacts of the facility consisting of the identification and mapping of existing conditions, an impact analysis, and proposed impact avoidance and mitigation measures, including:

- (a) a map delineating existing slopes on and within the drainage area potentially influenced by the Facility site and interconnections;
- (b) a proposed site plan showing existing and proposed contours at 2-foot intervals, for the Facility site and interconnections, at a scale sufficient to show all proposed buildings, structures, paved and vegetative areas, and construction areas;
- (c) a description and preliminary calculation of the quantity of cut and fill necessary to construct the Facility, including separate calculations for topsoil, sub-soil, and rock, and including a plan to identify the presence of invasive species in spoil material and to prevent the introduction and/or spread of invasive species by the transport of fill material to or from the site of the facility or interconnections;

- (d) a description and preliminary calculation of the amount of fill, gravel, asphalt, and surface treatment material to be brought in to the Facility site and interconnections;
- (e) a description and preliminary calculation of the proposed type and amount of cut material or spoil to be removed from the Facility site and interconnections;
- (f) a description of excavation techniques to be employed;
- (g) a delineation of temporary cut or fill storage areas to be employed;
- (h) a description of the characteristics and suitability for construction purposes of the material excavated for the Facility and of the deposits found at foundation level, including factors such as soil corrosivity, bedrock competence, and subsurface hydrologic characteristics;
- (i) in the unlikely event that blasting were to be required, a preliminary plan describing all blasting operations, including location, minimum blasting contractor qualifications, hours of blasting operations, estimates of amounts of rock to be blasted, warning measures, measures to ensure safe transportation, storage and handling of explosives, use of blasting mats, conduct of a pre-blasting condition survey of nearby buildings and improvements, and coordination with local safety officials;
- (j) in the unlikely event blasting were determined to be required, an assessment of potential impacts of blasting to environmental features, aboveground structures and belowground structures such as pipelines and wells;
- (k) in the unlikely event blasting were determined to be required, an identification and evaluation of reasonable mitigation measures regarding blasting impacts, including the use of alternative technologies and/or location of structures, and including a plan for securing compensation for damages that may occur due to blasting;
- (l) a description of the regional geology, tectonic setting and seismology of the Facility vicinity.
- (m) an analysis of the expected impacts of construction and operation of the Facility with respect to regional geology, if such can be determined;
- (n) an analysis of the impacts of typical seismic activity experienced in the Facility area based on current seismic hazards maps, on the location and operation of the Facility identifying potential receptors in the event of failure, and if the facility is proposed to be located near a young fault or a fault that has had displacement in Holocene time, demonstration of a suitable setback from such fault;
- (o) a map delineating soil types on the Facility and interconnection sites;

- (p) a description of the characteristics and suitability for construction purposes of each soil type identified above, including a description of the soil structure, texture, percentage of organic matter, and recharge/infiltration capacity of each soil type and a discussion of any de-watering that may be necessary during construction, and whether the Facility shall contain any facilities below grade that would require continuous de-watering;
- (q) maps, figures, and analyses delineating depth to bedrock and underlying bedrock types, including vertical profiles showing soils, bedrock, water table, seasonal high groundwater, and typical foundation depths on the Facility site, and any area to be disturbed for roadways to be constructed and all off-site interconnections required to serve the Facility, including an evaluation for potential impacts due to Facility construction and operation, including any on-site wastewater disposal systems, based on information to be obtained from available published maps and scientific literature, review of technical studies conducted on and in the vicinity of the facility, and on-site field observations, test pits and/or borings as available;
- (r) an evaluation to determine suitable building and equipment foundations, including:
    - (1) a preliminary engineering assessment to determine the types and locations of foundations to be employed. The assessment shall investigate the suitability of such foundation types as spread footings, caissons, or piles, including a statement that all such techniques conform to applicable building codes or industry standards;
    - (2) if piles are to be used for the equipment foundations, a description and preliminary calculation of the number and length of piles to be driven, the daily and overall total number of hours of pile driving work to be undertaken to construct the facility, and an assessment of pile driving impacts on surrounding properties and structures due to vibration; and
    - (3) identification of mitigation measures regarding equipment foundation pile driving impacts, if applicable, including a plan for securing compensation for damages that may occur due to pile driving; and
- (s) an evaluation of the vulnerability of the Facility site and the operation of the Facility to an earthquake event and a tsunami event.

4.22 TERRESTRIAL ECOLOGY AND WETLANDS – EXHIBIT 22

4.22.1 Overview

The Application will contain information necessary for identification and description of terrestrial resources and wetlands, analysis of the temporary and permanent impact of the construction and operation of the Facility and its interconnections, and identification and evaluation of reasonable avoidance and mitigation measures for these resources pursuant to Section 1001.22 of the Article 10 Regulations. This section of the PSS is organized to first identify existing terrestrial resources and wetlands, based on studies that the Applicant has conducted to date, and describe potential impacts of the construction and operation of the Facility and its interconnections on these resources; followed by a description of the additional studies the Applicant proposes to conduct. The resources for this section of the PSS are grouped as follows: plant communities and general wildlife habitat; mammals; avian resources; state and federal endangered and threatened species; wetlands; and agricultural resources.

4.22.1.1 General Wildlife Habitat

A total of approximately 238 acres of the 428-acre Facility Area will be disturbed for the construction of the Facility. This includes variety of cover types that potentially provide habitat for wildlife. Table 4.22-1 summarizes the Facility Area by cover type based National Land Cover Database (NLCD). Less than 56% (less than 238 acres) of the total area removed or disturbed will be converted to permanent features associated with the Facility such as panel arrays, access roads, and ancillary features such as a substation. An additional potential impact to general wildlife habitat resulting from construction of the Facility is the potential for the inadvertent introduction and/or spread of invasive plant species.

Table 4.22-1: Land Cover within Facility Area and Facility Layout Limits of Disturbance

NLCD Land Cover Class	Facility Area Coverage (Acres)	Facility Layout (Acres)
Developed, open space	1.68	1.06
Developed, low intensity	0.64	0.60
Deciduous Forest	69.84	14.52
Evergreen Forest	25.77	19.14
Mixed Forest	26.23	3.05

NLCD Land Cover Class	Facility Area Coverage (Acres)	Facility Layout (Acres)
Scrub/Shrub	1.99	1.57
Pasture/Hay	136.54	68.23
Cultivated Crops	160.49	126.68
Woody Wetlands	3.59	3.01

4.22.1.2 Mammals

Albany County habitat supports a variety of mammals, including: white-tailed deer (*Odocoileus virginianus*); wild turkey (*Meleagris gallopavo*); ruffed grouse (*Bonasa umbellus*); eastern gray squirrel (*Sciurus carolinensis*); eastern cottontail (*Sylvilagus floridanus*); gray fox (*Urocyon cinereoargenteus*); eastern coyote (*Canis latrans*); racoon (*Procyon lotor)*; striped skunk (*Medphitis mephitis)*; Virginia opossum (*Didelphis virginiana)* (USDA 1992). A variety of shrew (family *Soricidae*), mice and rats (family Cricetidae) and moles (family *Talpidae*) are also native to the woods and meadows of the Facility Area. In addition, a variety of bat species, including three protected species (discussed in Section 4.22.1.4) may be present in the area. Mammals observed within the Facility Area indicate species generally adapted to human activities and associated with the largely agricultural land use.

The most likely impact to mammals from the Facility would be indirect impacts in the form of habitat loss or alteration resulting from addition of the Facility to the landscape. For mammals, Facility related impacts are expected to be temporary and minor such as: temporary displacement of disturbance-tolerant species into adjacent suitable habitat during construction and minor wildlife mortality of less mobile species due to interactions with machinery during construction.

Minimal tree clearing is proposed and all tree-cutting will be done within the timeframe specified by the USFWS and NYSDEC, when breeding bats are not present to avoid direct impacts to bat species. Minimal tree removal for construction of the Facility is also anticipated so only a negligible fraction of suitable summer roost habitat within range of bat hibernacula would be affected.

4.22.1.3 Avian Resources

The Facility Area is located in the Atlantic Flyway migratory bird route and the habitats within provide potential stop-over points for migratory species as well as potential breeding habitat. Direct impacts of the Facility to birds are not anticipated given the very low profile of the panel arrays. Indirect impacts of solar energy development can include disruptions of foraging behavior,

breeding activities, and migratory patterns resulting from presence of the Facility in landscapes used by birds and bats.

Hecate Albany met with the NYSDEC on March 14, 2018 to identify potential avian concerns associated with Facility construction and/or operation. NYSDEC indicated the potential for both breeding grassland birds and wintering grassland raptors to occur in the Facility Area.

Indirect impacts to grassland birds may include behavioral alterations or avoidance of areas within, or close to, Facility components.

4.22.1.4 State and Federal Endangered or Threatened Species

Based on information compiled from the USFWS IPaC tool and results from a data request to the NYSDEC NYNHP, the following state and federal endangered or threatened species have been documented within or in the vicinity of the Facility Area:

- Indiana bat (*Myotis sodalis*) – Federal and New York Endangered
- Northern long-eared bat (*Myotis septentrionalis*) – Federal and New York Threatened
- Eastern small-footed bat (*Myotis leibii*) – New York Special Concern

IPaC results provide information on a broader county level while results for documented species occurrence from NYNHP are more narrowly focused on the Facility Area. Results from the NYNHP did not identify northern long-eared bats in the Facility Area.

Indiana bat (*Myotis sodalis*)

Indiana bats hibernate in caves and mines during the winter. Female Indiana bats radio-tracked from hibernacula in various New York counties were found to move between approximately 10 and 35 miles to roost locations on their foraging grounds (USFWS 2007). Summer roosts typically consisted of living, dying, and dead trees in both rural and suburban landscapes. In summer, male Indiana bats are found most commonly in areas near hibernacula.

It is not anticipated that operation of the Facility will have any direct or indirect impacts on Indiana bats.

Northern long-eared bat (*Myotis septentrionalis*)

Similar to most bats found in New York, northern long-eared bats hibernate in caves and mines. During the summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). Males and non-reproductive females may also choose summer roosts in cooler places, like caves and mines. Northern long-

eared bats appear to be adaptable in selecting summer roosts, choosing roost trees of variable sizes that retain bark or provide cavities or crevices.

Mist net captures from New York suggest that northern long-eared bats may also be found using younger forest types. A variety of tree species are used for roosting. Roosts of female bats tend to be large-diameter, tall trees, and in at least some areas, located within a less dense canopy (Sasse and Pekins 1996). On rare occasions, they have also been found roosting in structures, like barns and sheds or behind shutters.

It is not anticipated that operation of the Facility will have any direct or indirect impacts on northern long-eared bats.

Eastern Small-footed bat (*Myotis leibii*)

In New York, small-footed bats winter in caves, mines, and openings deep within rock crevices in outcrops. The largest overwintering populations are currently known from mines in the northern part of the state. Several individuals, including a few lactating females, have been mist-netted in deciduous forests during the summer months in southeastern and central New York, but the summer range is thought to be more widespread throughout the state. Several studies in the northeast and southeast portions of the state have found that small-footed bats roost and form maternity colonies in fractures in rock ledges and talus areas, neither of which are found within the Facility Area.

It is not anticipated that operation of the Facility will have any direct or indirect impacts on eastern small-footed bats.

The USFWS IPaC Report also identified 17 migratory bird species on the USFWS Birds of Conservation Concern list. (USFWS 2018), including:

- American Golden-plover (*Pluvialis dominica)*
- Bald Eagle (*Haliaeetus leucocephalu*s)
- Black-billed Cuckoo (*Coccyzus erythropthalmus*)
- Bobolink (*Dolichonyx oryzivorus*)
- Buff-breasted Sandpiper (*Calidris subruficollis*)
- Cerulean Warbler (*Dendroica cerulean)*
- Eastern Whip-poor-will (*Antrostomus vociferous*)
- Golden Eagle (*Aquila chrysaetos)*
- Golden-winged Warbler (*Vermivora chrysoptera)*

- Lesser Yellowlegs (*Tringa flavipes)*
- Long-eared Owl (A*sio otus)*
- Prairie Warbler (*Dendroica discolor*)
- Red-headed Woodpecker (*Melanerpes erythrocephalus*)
- Semipalmated Sandpiper (*Calidris pusilla*)
- Short-billed (Dowitcher *Limnodromus griseus*)
- Snowy Owl (B*ubo scandiacus*)
- Wood Thrush (*Hylocichla mustelina*)

4.22.1.5 Wetlands

Based on a review of the NYSDEC Freshwater Wetland Maps and the USFWS NWI maps, there are no NYSDEC-mapped wetlands and only one small NWI-mapped wetland within the proposed facility boundaries or within 500-feet of the Facility Area (See Figure 5). This feature, an approximately 0.3-acre freshwater emergent wetland, is located in the northern agricultural fields within the Facility Area boundary. Table 4.22-2 provides a summary of the number and acreage of wetlands mapped by the NWI within the Facility Area and outside its boundaries, within a 500-foot zone. A Class 2 NYSDEC-mapped wetland is located approximately 95 feet outside the eastern boundary of the 500-foot zone outside the boundaries of the Facility Area. This feature's 100-foot regulated buffer zone crosses into the eastern edge of the non-regulated 500-foot zone but remains outside of the Facility Area boundary.

Table 4.22-2: Mapped NWI Wetlands within the Facility Area and 500-foot Buffer

Wetland Class[1]	Acreage
PEM[1]	0.34*
Total	**0.34**

[1]PEM = palustrine emergent

*within Facility Area

In addition, 18 wetlands were field delineated within the Facility Area during two separate field efforts including November 15 to December 1, 2016, and September 5 and 6, 2017. During September 2017, the field effort included delineating previously un-surveyed wetlands as well as verifying wetlands delineated during fall 2016. Approximately 90% of the Facility Area has been delineated. Delineated wetlands are summarized in Table 4.22-3 and shown on Figure 6.

Table 4.22-3: Preliminary Delineated Wetlands within the Facility Area

Wetland ID	Cowardin Class	Edinger Ecological Community	Connectivity	Jurisdictional Status	Area (acres)
W-01	PEM1Ch	Shallow emergent marsh	Unnamed tributary to Coeymans Creek	NWI	0.324
W-02	PEM	Shallow emergent marsh	Unnamed tributaries to Coeymans Creek	NWI	0.061
W-03	PFO/PEM	Floodplain forest	Unnamed tributaries to Coeymans Creek	NWI	PFO: 0.751 PEM: 0.184
W-04	PEM	Shallow emergent marsh	Unnamed tributaries to Coeymans Creek	NWI	0.013
W-05	PEM	Shallow emergent marsh	Unnamed tributaries to Coeymans Creek	NWI	0.011
W-06	PSS	Shrub swamp	Unnamed tributaries to Coeymans Creek	NWI	0.141
W-07	PFO	Floodplain forest	Unnamed tributaries to Coeymans Creek	NWI	0.597
W-08	PSS	Shrub swamp	Unnamed tributaries to Coeymans Creek	NWI	1.187

Wetland ID	Cowardin Class	Edinger Ecological Community	Connectivity	Jurisdictional Status	Area (acres)
W-09	PEM	Shallow emergent marsh	Unnamed tributaries to Coeymans Creek	NWI	0.455
W-10	PEM	Shallow emergent marsh	Unnamed tributaries to Coeymans Creek	Potentially Non-jurisdictional	0.623
W-11	PEM	Shallow emergent marsh	Isolated	Potentially Non-jurisdictional	0.037
W-12	PFO	Floodplain forest	Mosher Brook	NWI	0.379
W-13	PSS/PEM	Shrub swamp	Unnamed tributaries to Mosher Brook	NWI	4.164
W-14	PSS/PEM	Shrub swamp	Unnamed tributary of Mosher Brook	NWI	0.564
W-100	PEM	Shallow emergent marsh	Unnamed tributaries to Mosher Brook	NWI	1.021
W-101	PEM	Shallow emergent marsh	Unnamed tributaries to Mosher Brook	NWI	1.800
W-102	PEM	Shallow emergent marsh	Unnamed tributaries to Mosher Brook	NWI	0.077
W-103	PEM	Shallow emergent marsh	Unnamed tributaries to Mosher Brook	NWI	0.347
				Total	**12.736**

4.22.1.6 Agricultural Resources

As discussed in Section 4.4, the majority of the Facility Area is located within an Agricultural District (ALBA003) certified by the NYSDAM, with on-site cultivated crops consisting of corn and soybeans, in rotation, and hay lands.

The Application will include an analysis of the temporary and permanent impacts of the construction and operation of the facility and the interconnections on agricultural resources, including the acres of agricultural land temporarily impacted, the number of acres of agricultural land that will be permanently converted to nonagricultural use, and mitigation measures to minimize the impact to agricultural resources.

4.22.2 Proposed Studies

4.22.2.1 General Wildlife Habitat

Plant community and wildlife habitat characterization will be completed for the Facility Area and will be included in the Application. Land cover classes noted in Section 4.22.1.1 will be described in more detail using Ecological Communities of New York State data (Edinger, et al. 2014) and supplemented by field observations of dominant vegetation within the Facility Area. For each community identified, its Heritage Program Element Rank will be provided. A table listing area assumptions used to determine vegetation disturbance by Facility component will also be included in the Application.

Wildlife studies and data relating to the presence, abundance, and distribution of wildlife species in the Facility Area will be conducted to provide area-specific guidance on the nature and extent of potential direct and indirect impacts. Data have been collected from the NYNHP and USFWS and will be supplemented by available data from: the New York State Amphibian and Reptile Atlas Project; the New York State Breeding Bird Atlas and range maps; North American Breeding Bird Survey Routes; Audubon Christmas Bird Counts; Ebird; and other similar reference sources, including an identification and depiction of any unusual habitats or significant natural communities that could support state or federally listed endangered or threatened species or species of special concern. No Significant Coastal Fish and Wildlife Habitat Areas designated by New York State Department of State (NYSDOS)/NYSDEC are designated within the Facility Area. In addition, the Co-Applicants have consulted the NYSDEC and will consult the USFWS for additional information on threatened and endangered species.

Habitat characterization within the Facility Area will be based on identification and description of the type of plant communities present within the Facility Area and the interconnections, and

adjacent properties (as access permits). Plant communities will be classified using the USGS Gap Analysis Program national land cover data set (Version 2), and will be identified to ecological system level describing dominant species and subdominant associates. Wetland and aquatic habitats will be classified according to the USFWS Classification of Wetlands and Deep Water Habitats of the United States (Cowardin, et al. 1979). Generated plant community maps will be field verified to corroborate accuracy of mapped cover types and adjusted for recent changes to the landscape. The extent of offsite field corroboration will be based on access availability to adjacent properties. A list of terrestrial invertebrate, amphibian, reptile, avian, and mammal species likely to reside in habitats associated with the Facility Area will be compiled. Specifically, the Application will identify species present at the Facility Area that are dependent on open fields or un-fragmented forest, and will include an evaluation of how those species will be affected by construction and operation of the proposed Facility. In addition, the Application will include a discussion of impacts to wildlife corridors and how the presence of wildlife corridors is ascertained.

The Application will also include an analysis of the temporary and permanent impact of the construction and operation of the facility and the interconnections on the vegetation identified, including a map of vegetation within the Facility Area showing the areas to be removed or disturbed. The application will also include a plan to identify the presence of invasive species and to prevent the introduction and/or spread of invasive species.

4.22.2.2 Mammals

Based on response from the NYNHP, the Facility is also located about 0.5 miles from known bat hibernacula. As noted in Section 4.22.1.4 above, Indiana bat, northern long-eared bat, and eastern small-footed bat have been documented within the vicinity of the Facility Area. Potential Indiana bat and northern long-eared bat habitat has been preliminarily identified within the Facility Area. All tree-cutting will be done within the timeframe specified by the USFWS to avoid impacts to bat species. Suitable habitat for eastern-small footed bat was not observed within the Facility Area

The Application will include a list of the species of mammal likely to occur on, or in the vicinity of the Facility Area based on site observations and supplemented by publicly available sources. The Application will also include an analysis of karst geologic formations within the Facility Area and evaluate any corresponding potential bat or other wildlife impact considerations.

Habitat for mammals currently hunted in the Facility Area will be identified and a qualitative discussion of how Facility operations may impact these species and the opportunity for continued

hunting in the Facility Area will be provided. As noted above, minimal tree clearing is proposed and all tree-cutting will be done within the timeframe specified by the USFWS to avoid impacts to bat species.

4.22.2.3 Avian Resources

As discussed in Section 4.22.1.1, most of the Facility Area consists of agricultural land. The Facility Area also includes areas of, wetland, shrubland, and forest, which may support a number of avian species as foraging and breeding habitat. The Application will present information on birds from the New York State Breeding Bird Atlas (BBA). The Facility Area is located within or immediately adjacent to four survey blocks, including 5970A, 5970B, 5970C, and 5970D.

Three other publicly available data sources that will be assessed include Ebird, the North American Breeding Bird Survey, and Audubon Christmas Bird Count. The nearest Breeding Bird Survey route, the Ghent route, is located approximately 6.5 miles east of the Facility Area. Data from this route will be included in the Application. The Facility Area falls within the 15-mile wide count circle of the Albany County Christmas Bird Count location, which will be assessed as part of the Article 10 Application.

The Application will compile a list of birds within the vicinity of the Facility Area based on records from these survey blocks and supplemented by on site observations. The Article 10 Application will present information on birds from the New York State BBA survey blocks, including 5970A, 5970B, 5970C, and 5970D, the Audubon Christmas Bird Count Albany County circle, and Ebird, Albany County, for a summary of bird resources in the Facility Area.

In addition, the Co-Applicants have initiated consultation with NYSDEC staff regarding the need for Facility-specific avian field surveys, and the extent of information that will be provided in the Application. These discussions took place during a meeting with NYSDEC staff in Albany, New York on March 14, 2018. NYSDEC indicated the potential for grassland birds within the Facility Area and, as they do not have data for the Facility location, recommended both breeding bird surveys and wintering grassland raptors surveys.

In coordination with NYSDEC, Hecate Albany has initiated end of season 2017/2018 winter raptor surveys for the Facility Area. Surveys were conducted using the NYDEC Draft Survey Protocol for State-listed Wintering Grassland Raptor Species (NYSDEC 2015b). These protocols specifically target the New York State-listed short-eared owl (*Asio flammeus*) (Endangered) and northern harrier (*Circus cyaneus*) (Threatened). Surveys at two survey stations were

simultaneously run on March 26, 2018, April 2, and April 11, 2018. One Cooper's hawk (*Accipiter cooperii*) was observed; no short-eared owls or northern harriers were detected.

For grassland breeding birds and grassland wintering raptors, the Applicant will further coordinate with NYSDEC to determine the need for further grassland bird surveys within the Facility Area. If required, surveys will be conducted using NYSDEC's Draft Survey Protocol for State-listed Breeding Grassland Bird Species (NYSDEC 2015a) and Draft Survey Protocol for State-listed Wintering Grassland Raptor Species (NYSDEC 2015b).

4.22.2.4 State and Federal Endangered or Threatened Species

Information on the distribution and abundance of known occurrences of state-listed species in the Facility Area will be compiled from documented occurrences recorded by the NYNHP and the USFWS. Results of onsite surveys (as requested by the NYSDEC), as well as results of species-specific surveys conducted by the NYSDEC, if any, will supplement the documented occurrences. A spatial analysis of these data will be completed to assess potential impact of the Facility on identified listed species.

The Co-Applicants have consulted the NYSDEC and are currently preparing avoidance, minimization and mitigation strategies for threatened and endangered species in compliance with the federal Endangered Species Act (ESA 1973) and Part 124 of New York State ECL Article 11. Hecate Albany will initiate consultation with the USFWS and will continue to consult the NYSDEC on threatened and endangered species during the course of the Article 10 Application process.

4.22.2.5 Wetlands

Wetlands within approximately 90% of the Facility Area were delineated during November 2016 and September 2017 using the three-parameter methodology described in the 1987 Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987) and the 2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (USACE 2012). Wetland boundaries were documented using GPS technology with sub-meter accuracy. Hecate Albany is in the process of delineating wetlands within the east parcel (144.-1-29) using methods described in the 2012 regional supplement. For the Application, Hecate Albany will also field delineate the remaining 10% of the wetlands within the Facility Area. The area within 500 feet of areas to be disturbed by construction will also be delineated.

The Application will include a map showing delineated boundaries based on on-site identification of all federal, state and locally regulated wetlands present on the facility site and within 500 feet of areas to be disturbed by construction. For adjacent properties without accessibility, initial

surveys may be based on remote-sensing data, interpretation of published wetlands and soils mapping, and aerial photography.

Wetland delineations for currently un-surveyed parcels will be completed using the 1987 Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987) and the 2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (USACE 2012). The 500-foot zone outside the proposed limits of disturbance but within the control of Hecate will also be field inspected for the presence of hydric vegetation, soil, and hydrology indicators, and areas meeting the criteria will be delineated.

The Application will also include a description of the vegetation, soils, and hydrology data collected for each of wetland sites identified, based on actual on-site wetland observations. Hydric vegetation, soil, and hydrology indicators at representative sampling station locations have been and will be recorded on the Corps of Engineers regional data forms for each delineated wetland. Wetland cover types have been and will be characterized using the USFWS classification of wetlands (Cowardin 1979). Observations supporting potential functions and values will be recorded at each wetland. Wetland boundaries will be recorded using a Trimble© GeoXT™, or equivalent, handheld unit. Photographs will be taken of each delineated wetland. These data have been collected for the previously delineated wetlands.

For adjacent properties not accessible to Hecate Albany, desktop delineations will be completed based upon analysis and interpretation of available remote-sensing and GIS data including: NYSDEC Freshwater Wetlands maps; NWI maps; the USGS National Hydrography Dataset; and USDA Natural Resources Conservation Service soil survey data. Compiled information will be geo-referenced with USGS 1:24,000-scale quadrangle maps and recent aerial photography. Based on an examination of previously mapped wetlands, hydric mapped soils, and photointerpretation of vegetation cover type, approximate wetland boundaries will be determined.

The Application will include a qualitative and descriptive wetland functional assessment, including seasonal variations, for all wetlands delineated as above for: groundwater recharge/discharge; floodflow alteration; fish and shellfish habitat; sediment/toxicant retention; nutrient removal; sediment/shoreline stabilization; wildlife habitat; recreation; uniqueness/heritage; visual quality/aesthetics; and protected species habitat.

Functions and values will be assessed using procedures outlined in the Highway Methodology Workbook Supplement issued by the USACE New England District (USACE 1995) that prescribes a descriptive approach. This method integrates wetland science and value judgment into the

overall assessment of a wetland. This method considers eight functions and five values. Principal and secondary (where applicable) functions and values will be designated to each wetland delineated within the 500-foot buffered Facility limits of disturbance.

Based upon desktop review of available information, the Application will include an analysis of mapped off-site wetlands that may be hydrologically or ecologically influenced by development of the Facility and the wetlands identified on the Facility Area. Wetlands mapping will be used to inform an analysis of hydrological connections to offsite wetlands, including those that are state-mapped wetlands, protected by NYSDEC.

4.22.2.6 Agricultural Resources

The Application will include an analysis of the temporary and permanent impacts of the construction and operation of the facility and the interconnections on agricultural resources, including the acres of agricultural land temporarily impacted, and the number of acres of agricultural land that will be permanently converted to nonagricultural use.

4.22.3 Proposed Avoidance, Minimization, and Mitigation Measures

4.22.3.1 General Wildlife Habitat

As noted in Section 4.21, Hecate Albany will develop a plan to identify the presence of invasive species and to prevent the introduction and/or spread of invasive species within areas disturbed by construction of the Facility. Elements in this plan can include:

- Identification;
- Training;
- Pre-Construction Plant Removal and Treatment;
- Inspection of Fill Sources;
- Invasive Species Vegetation Removal and Disposal;
- Washing Machinery and Equipment;
- Erosion Control; and
- Preservation and Restoration of Native Vegetation.

Mitigation options for any unavoidable impacts for wildlife habitat include:

- Restoring temporarily disturbed areas, where practicable, to comparable pre-construction contours and reseeding with native (noninvasive) as soon as practicable following the completion of construction activities; and

- Implementing a comprehensive Invasive Species Management Plan that outlines management measures to identify invasive species that may occur in the Facility Area, and controlling and monitoring their spread during each phase of construction.

4.22.3.2 Mammals

The Facility has been designed and will continue to be designed to reduce significant adverse impacts to wildlife. Facility infrastructure is sited away from high quality wildlife habitat and forested clearing will be minimized to the greatest extent practicable.

4.22.3.3 Avian Resources

The proposed Facility will continue to be designed to reduce impacts to birds. Hecate Albany will continue to assess presence of grassland birds and threatened and endangered species and if present, will evaluate design considerations and mitigation measures.

4.22.3.4 State and Federal Endangered or Threatened Species

The following conservation measures have been implemented during the design of the Facility, or will be implemented before or during construction to reduce potential bat mortality to federal and state listed bats that may be present within the vicinity of the Facility Area as identified through USFWS and NYNHP consultations (Indiana bat, northern long-eared bat, and eastern small-footed bat) as a result of the construction and operation of the Facility:

- Avoidance – the Facility design will continue to take into consideration the distribution of potential bat habitat in the Facility Area to avoid potential take of protected bats, and will continue to engage in avoiding, minimizing, or reducing placement of Facility elements in forested or wetland areas as determined in consultations with USFWS and NYSDEC,
- Avoidance –The Facility design will endeavor to time any tree cutting to the winter season, when bats would be hibernating.
- Preplanning with Agencies – Hecate Albany is currently seeking technical assistance with the USFWS, USACE, and NYSDEC for potential impacts to protected bats species. The Co-Applicants will comply with conditions and mitigation measures derived through this collaborative process.

4.22.3.5 Wetlands

The Application will identify and evaluation reasonable avoidance measures or, where impacts are unavoidable mitigation measures to be employed regarding the wetlands and adjacent areas impacts.

The Preliminary Layout of the Facility will be designed to avoid and minimize wetland impacts to the greatest extent practicable. Results of field delineations for Facility Areas and the 500-foot buffer will be used to guide the design. Avoidance and minimization strategies will be determined in consultation with USACE and NYSDEC, but are generally expected to include the following items:

- Avoiding cutting forested wetlands to the greatest extent practicable;
- Giving preference to existing crossings or narrow crossings when impacts are unavoidable;
- Crossing wetlands in the fewest locations possible;
- Crossing wetlands perpendicular to flow to the extent practicable;
- Restoring temporarily disturbed wetland areas to pre-construction contours and revegetating with native (noninvasive) plant material or seeds as soon as is practicable after completion of regulated activities;
- Consolidate Facility components in available areas that exclude wetlands; and
- Where Facility components must be located in wetlands, focus on lower value, isolated or non-jurisdictional wetlands.

In the Application, GIS shape files of the preliminary Facility plans including mapped and delineated state and federal wetlands. In addition, a table of state and federal wetlands will be included:

- Identifying all state-regulated wetlands, federal wetlands, streams, and environmentally sensitive areas that could potentially be impacted by the proposed Facility as depicted in preliminary design drawings or wetland delineations;
- Identifying the corresponding page number on preliminary design drawings depicting the resource;
- Including wetland delineation types, NYSDEC stream classifications, and descriptions of resources within environmentally sensitive areas;
- For each resource, explaining if the resource could reasonably be avoided; and
- Proposing site-specific actions to minimize impacts to resources that are unavoidable.

4.22.3.6 Agricultural Resources

The Application will include mitigation measures to minimize the impact to agricultural resources. To accomplish this, the Applicant will coordinate with NYSDAM to implement appropriate

mitigation measures. Hecate Albany will evaluate areas that can be preserved as open field or hay fields to provide habitat.

4.22.4 Proposed Measures to Mitigate Unavoidable Impacts

4.22.4.1 General Wildlife Habitat

4.22.4.2 Mammals

No significant adverse impacts to mammals are anticipated; therefore, no mitigation is proposed for mammals.

4.22.4.3 Avian Resources

If avian resources are unavoidably impacted. Hecate Albany will consider such mitigation options as funding and implementing a pre- and post-construction study to estimate the direct and indirect effects of Facility operation as well as funding land management activities to increase grassland bird habitat. If protected grassland birds are determined to be present, mitigation plans will be developed in consultation with the NYSDEC per Part 182 of New York Article 11.

4.22.4.4 State and Federal Endangered or Threatened Species

The Application will identify state and federal endangered or threatened species within the Facility Area or that could be subject to impacts from facility construction, operation, or maintenance, including incidental takings, and an endangered or threatened species mitigation plan.

- If protected grassland birds are determined to be present, the Applicant will coordinate with the NYSDEC per Part 182 of New York Article 11 and a specific mitigation plan will be developed.
- Mitigation may include creation, enhancement and/or preservation of habitat through a conservation easement or purchase in fee title.

4.22.4.5 Wetlands

If the Facility would result in unavoidable impacts to jurisdictional wetlands, the Applicant will apply for a USACE Nationwide Permit and the Application will include mitigation plans for compensatory mitigation. Compensation for unavoidable fills in wetlands will be consolidated in one or more locations, as warranted. If required, it is anticipated that wetlands may be mitigated on-site and in-kind utilizing the periphery of the Facility Area. A compensatory mitigation plan will be prepared for any unavoidable permanent fill of wetlands or permanent conversion of forested wetland covered types to non-forested cover types. Wetlands will be mitigated in kind at a ratio to be

determined in consultation with the appropriate regulatory agencies. Mitigation plans will contain sections on grading, planting, and monitoring for success of the mitigation.

4.22.4.6 Agricultural Resources

For unavoidable impacts to agricultural resources, the Applicant will include mitigation measures to minimize the impact to agricultural resource and will coordinate with NYSDAM to implement appropriate mitigation measures.

4.22.5 Other Material Issues Raised by the Public and Affected Agencies

Hecate Albany received comments to date regarding terrestrial ecology and wetlands resources, as summarized in Table 4.22-4.

Table 4.22-4: Comments and Responses Regarding Terrestrial Ecology and Wetlands

Date	Commenter	Issue/Comment Summary	Response
2/20/2018	Open House Attendee	Attendees asked about potential impacts to wildlife with regard to Facility operations.	Hecate Albany is working with appropriate federal and state agencies to minimize impacts to wildlife to the maximum extent practicable.

4.23 WATER RESOURCES AND AQUATIC ECOLOGY - EXHIBIT 23

This Exhibit will provide an assessment of local water resources and aquatic ecology.

4.23.1 Overview

4.23.1.1 Groundwater

As noted in Section 3.8, no known sole-source aquifers occur within the Facility Area or its vicinity (USEPA 2017). The east and west portions of the Facility Area are located within a NYSEC principal aquifer that is known to be highly productive or whose geology suggests abundant potential water supply, but that is not intensively used as sources of water at the present time (NYSDEC 2018b). Based on review of USDA NRCS data, depth to the water table throughout most of the Facility Area is greater than 80 inches below the surface with shallower depths to water tables occurring in low-lying areas associated with wetlands (NRCS 2018).

Construction activities will not likely result in surface excavation to the water table. The installation of access roads and power collection lines will be shallow in depth and will also not likely result in potential groundwater disturbance. Additional indirect groundwater impacts could result from the potential introduction of pollutants into groundwater from surface flow via natural drainage down slopes or through open excavations or diversions related to construction activities.

No potentially significant adverse impacts are expected to groundwater quality in the Town of Coeymans in Albany County. Operation of construction equipment and vehicles that require the use of diesel and gasoline fuels, lubricating oils, and cooling fluids may pose a small risk for spills. However, spills associated with these sources, should they occur, will likely be small and confined to work sites, thus limiting the potential for infiltration into groundwater.

While shallow groundwater flow rates and patterns may exhibit some deviation from preconstruction conditions in the immediate area surrounding the racking systems of Facility PV panels, the Facility will likely have minimal impacts on regional groundwater recharge because of the small percentage of added impervious surface. If dewatering of excavated pits for foundations occurs, it may result in temporary minor and local lowering of the water table. Given the minor and highly localized character of these impacts, local water supply wells will not be adversely affected. The routine operation and maintenance of the Facility is anticipated to have no significant impacts to groundwater, as most of the Facility impacts are attributed to the construction phase.

4.23.1.2 Surface Water

The Facility Area is located within the Hannacroix Creek-Hudson River HUC10 watershed (0202000604). As noted in Section 3.8, four tributaries exist within the Facility Area. Moser Brook and a smaller unnamed tributary are located in the southeastern corner of the Facility Area, traversing from southwest to northeast. Two unnamed tributaries to Coeymans Creek are mapped in the northern and central portions of the Facility Area. All tributaries flow to Coeymans Creek, located east of the Facility Area. All four tributaries are NYSDEC Class C waters, which support fisheries and are suitable for non-contact activities. Coeymans Creek is an NYSDEC Class C(TS) water, which indicates that it may support trout spawning. In addition, a small segment of the north tributary discussed previously is classified as a NYSDEC Class C(TS) water where it confluences with Coeymans Creek outside of the Facility Area. Table 4.23-1 shows streams preliminary delineated throughout 90% of the Facility Area.

Table 4.23-1. Preliminary Stream Delineation

Stream ID	Type	Feature Name	NYSDEC Class [Class of Receiving Waterbody]	Jurisdictional Status	Length (feet)
SW-01	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	272.14
S-01	Intermittent	Unnamed	Class-C	USACE	3,075.83
S-02	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	264.90
S-03	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	305.14
S-04	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	205.12
S-05	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	303.10
S-06	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	310.29
S-07	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	145.62
S-08	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	1,731.36
S-09	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	203.74
S-10	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	220.57
S-11	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	197.94
S-12	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	237.18
S-13	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	222.79
S-14	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	148.87
S-15	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	68.48
S-16	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	236.52
S-17	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	101.90
S-18	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	210.13
S-19	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	98.74
S-20	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	1,126.35
S-21	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	223.75
S-22	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	146.61

Stream ID	Type	Feature Name	NYSDEC Class [Class of Receiving Waterbody]	Jurisdictional Status	Length (feet)
S-23	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	366.77
S-24	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	128.43
S-25	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	196.33
S-26	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	66.51
S-27	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	105.32
S-28	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	231.39
S-29	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	44.41
S-30	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	290.39
S-31	Perennial	Unnamed	Class-C	USACE	1,340.40
S-31-Braid	Perennial	Unnamed	Class-C	USACE	168.02
S-32	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	44.29
S-33	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	80.58
S-34	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	276.24
S-35	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	255.11
S-36	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	168.17
S-37	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	408.93
S-38	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	57.93
S-39	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	291.56
S-40	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	222.57
S-41	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	168.78
S-42	Intermittent	Unnamed	Unmapped (Class-C)	USACE	1,331.07
S-43	Intermittent	Unnamed	Unmapped (Class-C)	USACE	641.74
S-44	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	61.86
S-45	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	226.64

Stream ID	Type	Feature Name	NYSDEC Class [Class of Receiving Waterbody]	Jurisdictional Status	Length (feet)
S-45-Braid	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	28.74
S-46	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	127.74
S-47	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	123.22
S-48	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	653.38
S-49	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	25.65
S-50	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	94.39
S-51	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	362.96
S-52	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	169.27
S-53	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	84.72
S-54	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	607.57
S-55	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	84.86
S-56	Intermittent	Unnamed	Unmapped (Class-C)	USACE	92.45
S-57	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	43.94
S-58	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	570.78
S-59	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	143.85
S-60	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	65.92
S-61	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	32.63
S-62	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	209.04
S-63	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	187.23
S-64	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	190.78
S-100	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	1,730.17
D-01	Ephemeral	Unnamed	Unmapped (Class-C)	USACE	173.17
				Total	**23,032.98**

Direct impacts to surface waters will be minimal and are anticipated in areas where underground cable crossings are necessary to facilitate electrical interconnection during construction. Potential indirect impacts to surface water may result from sediment-, silt- or pollutant- laden surface runoff associated with vegetation clearing, limited grading, construction access, access roads, underground collection lines, and other ancillary facilities.

4.23.1.3 Stormwater

As noted in Section 3.3, bedrock may be exposed within the Facility Area along ridges. In lower areas, bedrock may be greater than 5 feet below ground surface (USDA 1992). Based on review of USDA NRCS data, depth to restrictive features ranges from 10 inches to greater than 80 inches below the surface throughout the Facility Area (NRCS 2018).

While distinct topographic and changes in local elevation are minor within the Facility Area, there is a direct influence of these features on stormwater runoff. The capacity of the most limiting layer of soils within the Facility Area to transmit water range from moderately low to moderately high. Fine soil materials may inhibit permeation of stormwater and may contribute to overland flow. Precipitation in the Facility Area is either absorbed into the ground or is transported via overland flow into numerous drainage channels, which typically connect to wetlands or streams in the Facility Area, which are primarily limited to the forested areas within the Facility Area and are associated with moderately steep ravines. During construction, stormwater may potentially convey sediment and silt laden runoff to down gradient surface waters or potentially pollutant laden runoff to groundwater or down gradient surface waters.

4.23.1.4 Aquatic and Invasive Species

Aquatic species were not observed during the preliminary field delineation of stream resources with the Facility Area. Only one of the streams within delineated Facility Area is perennial. Based on review of the New York State Amphibian and Reptile Atlas Project, 11 salamander species occur in the project vicinity:

- Blue spotted salamander (*Ambystoma laterale*);
- Common mudpuppy (*Necturus maculosus*);
- Four-toed salamander (*Hemidactylium scutatum*);
- Jefferson salamander (*Ambystoma jeffersonianum*);
- Northern two-lined salamander (*Eurycea bislineata*);
- Northern dusky salamander (*Desmognathus fuscus*);
- Northern red-backed salamander (*Plethodon cinereus*);

- Northern slimy salamander (*Plethodon glutinosus*);
- Northern spring salamander (*Gyrinophilus porphyriticus*);
- Red-spotted newt (*Notophthalmus viridescens*); and
- Spotted salamander (*Ambystoma maculatum*).

Two species of salamanders in New York, the Common Mudpuppy and the red-spotted newt spend their entire lives in water bodies. The blue-spotted, Jefferson's, and spotted, salamanders belong to a family known as the mole salamanders, because they spend most of their adult life underground, except for a brief early spring breeding period when they emerge to breed in vernal pools. The remainder are either streamside or woodland salamanders.

Invasive plant species identified during the completed wetland delineations include:

- Reed canary grass (*Phalaris arundinacea*);
- Multi-flora rose (*Rosa multiflora*);
- Common reed (*Phragmites australis*); and
- Purple loosestrife (*Lythrum salicaria*).

Construction activities may pose a risk of introducing and/or spreading invasive species by transferring seeds to the site that may be mixed in topsoil, gravel, and straw or moving plant material to new locations in the Facility Area by construction equipment. Depending on the individual species their spread can: displace native species and decrease native plant and wildlife biodiversity by encroaching into upland forest, wetland, and riparian habitats; present a public health hazard by causing photo-dermatitis; decrease habitats; decrease forage production for livestock and wildlife; and reduce habitat for small fish and invertebrates.

4.23.1.5 Cooling Water

The proposed Facility does not involve the use of cooling water. Therefore, information related to cooling water systems, intake, and discharge will not be included in the Application.

4.23.2 Extent of Quality of Information Required

Information regarding water resources will be supplemented with a compilation of existing federal and state agency data sources, and a desktop geo-spatial analysis for the Facility Area. These data will be used to identify hydrogeologic conditions such as the local groundwater elevation, quality, and use; the presence and extent of surface water resources, aquatic species, and potential occurrence of invasive species in the Facility Area; and to determine the significance of Facility-related impacts to these resources.

4.23.2.1 Groundwater

To identify existing water wells in the area, a Freedom of Information Law request letter will be sent to the NYSDEC and Albany County to request any information pertaining to groundwater wells (including location, construction logs, depths, and descriptions of encountered bedrock) within the Facility Area. The Application will include information received from the NYSDEC and Albany County on water wells, including location, depth, yield, and use, if such data are available.

The Application will include publicly available information on groundwater aquifers and groundwater recharge areas, groundwater flow direction, groundwater quality, and the location, depth, yield and use of all public and private groundwater wells or other points of extraction of groundwater, and including delineation of well head and aquifer protection zones.

Based on the proposed Facility layout, there will be a very small increase in impervious cover and, thus, the Facility should have little impact on groundwater recharge or surface water runoff rates. During construction, erosion and sedimentation control measures will be used to reduce sediment runoff from construction sites. Prior to construction, an appropriate industry standard survey for karst will be undertaken as part of the geotechnical survey described in Section 4.21.

4.23.2.2 Surface Water

Surface waters located within the Facility Area were delineated in November 2016 and confirmed in September 2017 in conjunction with wetland delineations. Surface waters were delineated based on the USACE *Jurisdictional Determination Form Instruction Guidebook*, USEPA and USACE joint guidance regarding CWA jurisdiction after Rapanos, and joint guidance on identifying waters protected by CWA (USEPA/USACE 2007, 2008, 2011). Hecate Albany will field delineate surface waters within 500 feet of the areas to be disturbed by construction. For adjacent properties without access, desktop delineations will be completed based upon analysis and interpretation of available remote-sensing and GIS data including NYSDEC Stream maps and USGS National Hydrography Dataset survey data.

A map will be prepared identifying all surface waters within a 2-mile Study Area, including intermittent streams based on field and desktop data. Each mapped stream will be supplemented with a description of the New York State listed Water Classification and Standards physical water quality parameters, flow, biological aquatic resource characteristics, and other characteristics as applicable. Any downstream surface water drinking-water supply intakes will be identified and described within 1 mile of the Facility Area.

4.23.2.3 Stormwater

As noted in Exhibit 21, prior to construction, a SPDES General Permit for Stormwater Discharges Associated with Construction Activities (GP-0-15.002) will be obtained. This permit will include a SWPPP to identify potential sources of sediment and other pollutants associated with the Facility layout that may affect the quality of stormwater discharge. A draft SWPPP will be included within the Application as will design drawings of any stormwater management measures proposed, as applicable.

4.23.2.4 Aquatic Species and Invasive Species

The Co-Applicants will consult with the NYSDEC for data on fish species that have been caught or identified in the streams associated with within the Facility Area. The data will be compared to the state and federal databases of threatened and endangered species and included in the Application. To determine impacts to salamander species the Applicant with characterize habitats to be disturbed by construction and operation of the Facility and identify impacts to the species likely to be present.

Aquatic invasive species identified by the NYSDEC (NYSDEC 2018c) and the Capital-Mohawk Partnerships for Regional Invasive Species Management (PRISM), which are observed during delineations and field investigations, will be documented and included in the Application. A comprehensive inventory of aquatic species or aquatic invasive species is not proposed to be included.

4.23.3 Proposed Avoidance, Minimization, and Mitigation Measures

4.23.3.1 Groundwater Avoidance and Minimization Measures

Operation of the Facility is not anticipated to result in any significant impacts to groundwater quality or quantity, drinking water supplies, or aquifer protection zones. Construction of the substation foundation, roadways, and underground collection lines are expected to be relatively shallow, and are not anticipated to intercept groundwater within the surrounding aquifers. The Facility will add only small areas of impervious surface. Nevertheless, the minimal potential for groundwater contamination resulting from Facility construction or operation will be mitigated by:

- Requiring construction contractors to use appropriate best management practices to prevent spills; and
- Complying with applicable laws related to the use of hazardous materials, and the implementation of the ERP that addresses prevention, containment and removal of spills.

In addition, the Application will include a plan for minimizing impacts to wells in the area including:

- A complete inventory of all identified wells within 500 feet of any areas of ground disturbance;
- Information on the location, depth and usage patterns of existing public and private wells, as available from the well owners;
- Plans to minimize impacts to well productivity and water quality; and
- Complaint notification and resolution procedures, including 24-hour contact information for well owners to report impacts to well productivity and water quality during and following construction activities, including blasting operations.

The Co-Applicants will perform a detailed assessment of soils, topographic features, and groundwater characteristics in order to anticipate whether dewatering will be required. Areas where existing soils are generally characterized as having low infiltration rates and low topographic relief will be identified. Groundwater data, including groundwater depth, quality and flow direction, will be obtained during the advancement of geotechnical test borings within the Facility Area. Where dewatering is anticipated, the Application will include a detailed description of the proposed dewatering practices and a demonstration of how dewatering will avoid and/or minimize flooding, surface water runoff, and transport of fine-grained soils into existing surface water bodies. Any locations where permanent dewatering will be required will be identified and permanent dewatering practices will be described in detail.

The potential for direct flow of contaminants into groundwater through fissures in karst areas will be addressed in the ERP and SWPPP. The Co-Applicants will work with the NYSDEC and the Albany County Soil and Water District prior to construction to develop a plan to survey karst features in the Facility Area. Hecate Albany will also prepare an SPCC Plan for construction activities to minimize the potential for unintended releases of petroleum and other hazardous chemicals. Best Management Practices (BMP) to be implemented during construction to prevent and contain spills. It is not anticipated that the Facility will require the on-site storage or disposal of large volumes of any substances subject to regulation under the State of New York's chemical and petroleum bulk storage programs (e.g., fuel oil, petroleum, etc.) or any substances subject to regulation under local laws. However, this will be confirmed in the Application.

The risks of potential water table reduction or pathway alteration due to dewatering will be avoided initially through pre-construction surveys and studies. Depth to water table will be established by conducting pre-construction geotechnical studies. Construction of foundations presents limited risk to the continued operation of private wells due to limited proximity. As previously mentioned,

the solar arrays will be located a distance of approximately 200 feet from existing, occupied residences, making it likely each will have no appreciable impact on active, private wells (which tend to be located in close proximity to homes).

4.23.3.2 Groundwater Mitigation Measures

As discussed above, based on the proposed Facility layout, there will be a very small increase in impervious cover, and thus the Facility should have no appreciable impact on groundwater recharge. During construction, erosion and sedimentation control measures will be used to reduce sediment runoff from construction sites. Beyond erosion and sedimentation control measures to be outlined in the SWPPP, no additional mitigation is anticipated to be required.

4.23.3.3 Surface Water Avoidance and Minimization Measures

Potential impacts to surface waters will be minimal and will only occur during the construction of the Facility. Results of field delineations for the Facility Area will be used to inform approaches for further avoidance, minimization, and/or reduction of impacts. Hecate Albany will endeavor to reduce impacts by:

- Crossing jurisdictional water at locations that reduce impacts;
- Following BMPs, such as installing erosion control measures to control sediment that could potentially flow offsite;
- Limiting vegetation clearing near stream banks;
- Giving preference to existing crossings or narrow crossings when impacts are unavoidable; and
- Establishing “Restricted Activities Areas” within 100 feet surrounding essential construction, as required by the appropriate regulatory agencies, which will include:
    - No storage of construction debris within the area;
    - No equipment refueling or washing within the area;
    - Limited use and strict adherence to manufacturer’s instructions for the application of herbicides;
    - No storage of any chemical substances, combustible fuels, or petroleum products within the area; and
    - No deposition of slash within or adjacent to a wetland or waterbody.

The Co-Applicants will perform a comparative evaluation of viable crossing methods of NYS Protected Streams (if applicable) and Class C streams, New York State freshwater wetlands and adjacent areas, and USACE regulated wetlands for all locations traversed by collection lines,

transmission lines, or other Facility components. The Application will include maps showing the locations of these crossings and identify the anticipated crossing methods. GIS shapefiles will also be provided to the DPS for the proposed crossings, indicating the method of crossing at each location. This Exhibit will also discuss the proposed crossing locations and methods and evaluate how impacts to streams and wetlands are minimized to the maximum extent practicable.

The location of all proposed horizontal direction drilling (HDD) operations within 500 feet of surface waters, wetlands or existing water supply wells will be identified in the Application. In addition, a description of mitigation measures to minimize impacts of HDD operations on surface water quality and the hydrologic flow patterns and groundwater quality of the shallow aquifer will be included.

4.23.3.4 Surface Water Mitigation Measures

While no significant adverse impacts to surface waters are anticipated, details of mitigation measures for unavoidable impacts will be developed and potential mitigation measures will be developed in conjunction with the NYSDEC and USACE. This Mitigation Plan will include the proposed location and nature of the proposed stream mitigation as well as a proposed monitoring program.

4.23.3.5 Stormwater Avoidance and Minimization Measures

Identifying potential sources of sediment and other pollutants that affect the quality of stormwater discharge, and implementing measures identified in the SWPPP will avoid and minimize impacts associated with stormwater discharge during construction of the Facility.

4.23.3.6 Stormwater Mitigation Measures

No significant adverse impacts resulting from discharge of stormwater are anticipated; therefore, no specific mitigation is proposed. BMPs used for Facility construction and operation to prevent potential adverse impacts to water quality will be described in the SWPPP and will conform to the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control.

4.23.3.7 Aquatic Species and Invasive Species Avoidance and Minimization Measures

Impacts to aquatic species are not anticipated; however, implementation of measures to avoid and minimize impacts to surface water resources will assist in minimizing unanticipated impacts to aquatic species.

An Invasive Species Management Plan will be prepared to identify specific invasive species that may occur in the Facility Area and outline management measures that will be implemented. Hecate Albany will ensure the Invasive Species Management Plan is employed throughout Facility development.

4.23.3.8 Aquatic Species and Invasive Species Mitigation Measures

No significant adverse impacts to fish, amphibians, or reptiles are anticipated; therefore, no specific mitigation is proposed for aquatic species.

Post-construction management of invasive species may be employed in the Facility Area to manage invasive plant communities identified by NYSDEC. Management strategies will be limited to those outlined in the Invasive Species Management Plan. If additional invasive species are discovered in the Facility Area, Hecate Albany will consult with NYSDEC regarding the most effective means of control.

4.23.4 Proposed Studies

4.23.4.1 Groundwater

With regard to groundwater, the following information is necessary to evaluate pre-construction mitigation of potential impacts:

(1) Hydrologic information reporting depths to high groundwater and bedrock, including a site map showing depth to high groundwater and bedrock in increments appropriate for the Facility.

(2) A map based on publicly available information showing all areas within a 2-mile Study Area delineating all groundwater aquifers and groundwater recharge areas, and identifying groundwater flow direction, groundwater quality, and the location, depth, yield and use of all public and private groundwater wells or other points of extraction of groundwater, and including delineation of well head and aquifer protection zones.

(3) An analysis and evaluation of potential impacts (during normal and drought conditions) from the construction and/or operation of the facility on drinking water supplies, groundwater quality and quantity in the facility area, including potential impacts on public and private water supplies, including active, private wells within a 1-mile radius of the Facility Area, and wellhead and aquifer protection zones.

4.23.4.2 Surface Water

Consistent with the Article 10 regulations, field delineations will be performed for all jurisdictional surface waters within the Facility Area where unmapped surface waters are identified within the Facility Area. As noted in Section 4.23.2.2, surface waters within 500 feet of the areas to be disturbed will be field delineated or where property access is not obtainable, desktop delineated. Stream data collection will involve recording the segment of the surface water that is located within the Facility Area, including up to an additional 20 feet outside the Facility Area with GPS to ensure adequate field-data collection. The top of bank will be recorded for streams greater than 5 feet in width and the centerline recorded for streams less than 5 feet in width. Portions of the Facility Area inaccessible during the field effort will be desktop delineated. The desktop delineation will involve review of recent high-resolution aerial photography obtained during April 2011 overlaid with 2-foot contour lines. This information will be supplemented with the location of wetlands and streams derived from state and federal sources, field delineated wetlands and streams, and soils information to digitize an accurate representation of field conditions. In addition, all surface waters, including intermittent streams, within a 2-mile Study Area will be identified and mapped.

4.23.4.3 Stormwater

As noted in Section 4.23.2.3, a SWPPP will be prepared to address stormwater discharges related to the Facility layout. The SWPPP will comply with SPDES requirements for the General Permit for Stormwater Discharges Associated with Construction Activities (GP-0-15.002). This goal will be met by identifying potential sources of sediment and other pollutants that affect the quality of stormwater discharge, and by planning and implementing measures to meet the following objectives:

- Reduction or elimination of erosion and loading of sediment and other pollutants that affect the quality of stormwater discharges to water bodies during construction;
- Control of the impact of stormwater runoff on the water quality of the receiving waters;
- Control of the increased volume and peak rate of runoff during and after construction; Maintenance of stormwater controls during and after completion of construction;
- Waste and material management for construction activities;
- Implementation of site inspections, monitoring and personnel training; and
- Identification of any post-construction measures that will be required.

4.23.4.4 Aquatic Species and Invasive Species

Available data from the NYS Amphibian and Reptile Atlas Project and NYNHP unusual habitats or significant natural communities that could support state or federally listed endangered or threatened species or species of special concern will be compiled and evaluated. Information on the presence and distribution of aquatic species and potential suitable habitat identified in the Facility Area will be compiled and an analysis of these data will be completed to assess potential impacts to aquatic species and their habitat.

4.24 VISUAL - EXHIBIT 24

Hecate Albany will develop a visual impact assessment (VIA) to determine the extent and assess the significance of Facility visibility. Hecate Albany will complete the VIA in compliance with the requirements of Section 1001.24 (Visual Impacts) of the Article 10 regulations, and with the *NYSDEC Policy Assessing and Mitigating Visual Impacts (DEP-00-2) (2000)*. The sections below describe potentially significant adverse visual impacts, studies that will be completed to identify anticipated adverse visual impacts, and potential mitigation measures for visual impacts.

4.24.1 Overview

According to NYSDEC Policy DEP-00-2 *Assessing and Mitigating Visual Impacts,* a significant impact may occur if one or more sensitive places of statewide concern or local concern are located within the viewshed of the Facility. NYSDEC Policy DEP-00-2 states:

> "*Aesthetic impact occurs when there is a detrimental effect on the perceived beauty of a place or structure. Significant aesthetic impacts are those that may cause a diminishment of the public enjoyment and appreciation of an inventoried resource, or one that impairs the character or quality of such a place."*

Public enjoyment of a scenic resource is subjective and highly dependent on the viewer's perception of beauty and scenery. Addition of the Facility components into a view may be detrimental to one viewer's enjoyment of a location, but may be negligible to a different viewer. Therefore, a process using the concept of "contrast" based on the United States Bureau of Land Management's (BLM) Visual Resource Management System (VRM) will be used to objectively measure potential visual impacts to the inventoried sensitive aesthetic resources (BLM 1986, BLM 1984). The degree of contrast introduced to a particular viewpoint by Facility components, in combination with the level of sensitivity of that viewpoint, will determine the significance of visual impacts. The BLM VRM system is widely used for a variety of projects and, with some

modifications, has been applied successfully to projects that do not occur on lands under the jurisdiction of the BLM.

The potential for significant adverse impacts is proposed to be limited to areas within the 5-mile visual study area where views of the Facility are not blocked by intervening topography, vegetation, and developments. The sections below discuss anticipated appearance of the proposed facilities, how the 5-mile visual study area was established, and how areas with potential views of the Facility will be identified using viewshed mapping.

4.24.1.1 Appearance of Proposed Facilities

Visible facilities will include geometric-shaped blocks containing rows of approximately 8-foot tall single-axis tracking solar panels oriented on a north-south axis, access roads, the Facility substation, the approximately 7-foot tall perimeter chain-link fence, and electrical equipment associated with the interconnection (Figure 3). The tallest structures among the Facility array are expected to be approximately 8 to 10 feet tall. Hecate Albany may also evaluate the use of taller structures, up to approximately 15 feet, to optimize the Facility's layout. The collection cable system will be predominantly underground to avoid shading the PV panels, however the engineer may consider overhead lines (approximately 40 feet high wood or steel structures) for a portion of the collection system that may be located on site and along tree lines. The electrical equipment located within the proposed substations will be traditional open-air substation configuration with most equipment below 20 feet height and select structures (e.g. lightning protection, cable dead-end structures) may be up to 40 feet.

Glare is not anticipated to cause significant adverse impacts. Glare is defined as a continuous source of bright light, and can be produced by indirect reflection of sunlight or the reflection of the bright sky surrounding the sun (FAA 2010). PV panels are designed to absorb rather than reflect solar radiation, and are commonly installed at or adjacent to airports and on residences. Glare may result if the angle of the sun is reflected from the PV panels or associated infrastructure, and directed towards a viewer; however, the tracking PV panels will follow the sun such that any glare is reflected back in the direction of the sun. The PV panels will have anti-reflective coating to minimize glare. For these reasons, glare will not be addressed in detail in the VIA or the Article 10 Application.

Lighting will be limited to the security lighting at the substation and entrance. As a security precaution, the engineer may consider motion detection lighting at select location along the fence. Selection of lighting locations type of lighting will take into consideration potential off-site

receptors. Light fixtures will be shielded and downward-facing to minimize off-site lighting impacts. Security lighting will not appear dissimilar to other proximate sources of light in the valley, which include industrial developments, schools, residences, businesses, and street lights along roadways.

4.24.1.2 Visual Study Area

The VIA will identify sensitive aesthetic resources from which Facility components would be visible, and evaluate the potential impacts from the proposed Facility. Facility components will be visible from surrounding viewpoints where not obscured by intervening topography, vegetation, developments, or distance. The VIA will focus on the visual study area, which incorporates areas within 5 miles of the Facility boundary. The visual study area was established based on the definition of a "Study Area" as provided in Section 1001.2 (ar) of the Article 10 regulations and guidance provided in NYSDEC Policy DEP-002.

- Guidance provided in Section 1001.2 (ar) of the Article 10 regulations states: "An area generally related to the nature of the technology and the setting of the proposed site. In highly urbanized areas, the study area may be limited to a one-mile radius from the property boundaries of the facility site, interconnections, and alternative location sites. For large facilities or wind power facilities with components spread across a rural landscape, the study area shall generally include the area within a radius of at least five miles from all generating facility components, interconnections and related facilities and alternative location sites. For facilities in areas of significant resource concerns, the size of a study area shall be configured to address specific features or resource issues."
- Guidance provided in NYSDEC Policy DEP-00-2*:* "With respect to determining the radius of the impact area to be analyzed, there has been a general guideline for large actions that it is usually "safe" to use five miles (five miles is still largely considered "background," i.e. distances at which most activities are not a point of interest to the casual observer)."

Both guidance's allow for expansion of the visual study area beyond 5 miles, but Hecate Albany anticipates that the visibility of the facility will generally be limited to locations close or adjacent to the facility given the short stature of the predominant Facility components, with the tallest components standing only 8 to 10 feet above ground level; the location of the proposed Facility in a valley; and the forested landscape.

4.24.1.3 Viewshed Analysis

Hecate Albany conducted a digital viewshed analysis to evaluate the potential visibility of the PV panels based on the height of the PV panel and screening provided by topography as well as vegetation. This analysis was conducted using ESRI ArcGIS GIS software with the Spatial Analyst extension to process 10-meter Digital Elevation Models based on the National Elevation Dataset, forested land cover (Homer et al. 2015) and the height of the PV modules above ground. The topographic viewshed assumed "bare earth" conditions and was developed from the proposed Facility Area boundary looking out to determine areas with potential visibility. NLCD land cover data were then used to determine where forested areas would obscure the Facility components using average heights of tree species based on forest type (deciduous forest= 61.5 feet; evergreen forest = 52.5 feet; and mixed forest = 57 feet). The resulting viewshed map shows areas with potential visibility based on screening by topography (i.e. bare earth) and vegetation (i.e. forested) (Figure 7). It is important to note that "seen" areas identified in the viewshed analyses do not necessarily indicate that the Facility will be visible or noticeable to the casual observer. "Seen" areas indicate that some portion of the Facility is potentially visible from that point because there is a direct, unobstructed line of sight between the point and some location within the Facility Area. Other factors such as distance, color, and the low profiles of the panels will also affect visibility and noticeability to different viewers. The viewshed analysis will be updated for the Application if the Facility layout is changed, and a field reconnaissance will be conducted to verify visibility from sensitive viewpoints.

As shown in the viewshed maps, the proposed Facility is located in a valley at an elevation ranging from approximately 160 feet amsl in the southern portion, to approximately 240 feet amsl in the northern portion. Elevation increases sharply immediately west of the Facility Area to a ridgeline of approximately 500 feet amsl, which serves to block most views of the Facility Area from the west (Figure 7). Elevations also rise immediately east of the Facility Area to a height of approximately 200 feet amsl before falling sharply to the Hudson River, which is located approximately 2.3 miles east of the Facility Area. Topography blocks most views from the Hudson River and eastward, until elevations exceed those found immediately west of the Hudson River (Figure 7). Generally, topography within and around the Facility Area is gently rolling and forested which serves to further obscure views of the Facility Area even at close distances

4.24.2 Extent and Quality of Information Required

Hecate Albany will complete the VIA and all supporting analysis in compliance with the requirements of Section 1001.24 (Visual Impacts) of the Article 10 regulations, and with *NYSDEC*

Policy Assessing and Mitigating Visual Impacts (DEP-00-2) (2000). Components of the VIA will include the following:

1) Desktop study to inventory visually sensitive resources and determine potential visibility based on digital viewshed analysis. The initial inventory of visually sensitive resources has been completed, and is based on publicly available GIS data through the NYS GIS Clearinghouse and other online resources. The preliminary digital viewshed analysis was also completed in March 2018 and is described above in Section 1.1.1.2.
2) Coordination with state and local agencies to confirm inventory of visually sensitive resources. In compliance with Section 1001.24 (b)(4) of the Article 10 regulations, Hecate Albany will correspond with state agencies, municipal planning representatives, and other stakeholders to confirm the list of visually sensitive viewpoints and resources that will be addressed in the Application, and to seek feedback on locations for simulations. Hecate Albany will send the letter describing the proposed Facility and the Article 10 process, a map of the visual study area, a preliminary inventory of sensitive resources, a description of next steps including the process for selecting simulation points, and a request for feedback regarding sensitive resources and simulation locations.
3) Field visit to confirm visibility and conduct site photography for visual simulations. Hecate Albany will conduct a field visit to confirm visibility of the Facility from visually sensitive resources as indicated by digital viewshed mapping. During the field visit, photographs will be taken as a record of findings, and to be used in photographic simulations. The existing landscape will be surveyed and any cumulative visual issues identified.
4) Develop comprehensive VIA document. The VIA will present findings of the desktop study, the digital viewshed analysis, and the field visit. The VIA will also present visual simulations, discuss potential contrast introduced by the Facility to sensitive viewpoints from which the Facility would be visible, and evaluate the degree of significance of visual impacts. The VIA will also include an assessment of cumulative impacts of the Facility in consideration with other proposed projects in the viewshed, and will proposed visual impact mitigation measures as appropriate.

4.24.3 Proposed Studies

Hecate Albany has started to conduct the visual analysis for the VIA and Application, which will contain all information required by Section 1001.24 (Visual Impacts) of the Article 10 regulations, and with *NYSDEC Policy Assessing and Mitigating Visual Impacts (DEP-00-2) (2000).* The following describes the major sections of the VIA.

4.24.3.1 Character and Visual Quality of the Existing Landscape

The VIA will include a discussion of the character and visual quality of the existing landscape within the 5-mile visual study area. The VIA will identify Landscape Similarity Zones (LSZs) within the 5-mile study area to describe the landscape in greater detail. LSZs are delineated based on shared characteristics including but not limited to scenic character, topography, vegetation, land use patterns, and water features. The LSZs will be shown on maps in the VIA and will provide a basis for discussing the visual quality of the landscape.

4.24.3.2 Visibility of the Facility – Operational Characteristics

The VIA will include the analysis of the visibility of the facility focusing on operational characteristics. Digital viewshed mapping will be used to determine the visibility of above-ground facilities including but not limited to the solar panels, the Facility substation, electrical interconnection equipment, and access roads. Two digital viewshed maps will be completed; one showing the potential visibility of Facility components based on topographic screening (bare earth viewshed), and one showing the potential visibility of Facility components based on topographic and vegetative screening (vegetated viewshed). The maps will show relevant distance zones; foreground (up to 0.5-mile from the viewer), middle ground (0.5 mile to 4 miles from the foreground), and background (4 miles from the viewer to the horizon) (United States Forest Service [USFS] 1995). The maps will also show locations of potentially sensitive viewpoints in relation to visibility zones and distance zones. Line-of-sight analyses will be performed for important viewpoints to confirm potential visibility.

Field verification will be employed to confirm visibility of the proposed Facility from sensitive viewpoints. Photographs will be taken to record findings, using a single lens reflex camera (dSLR). The camera will be equipped with a "normal lens," which means it most closely approximates the field of vision of the human eye. In photos taken with this lens, the size and scale of objects in the background and foreground are depicted in ratio and are not distorted. The resolution of the photography will be suitable for use in small and large format page layouts. Time, date, and weather conditions will be recorded for each viewpoint, and viewpoint locations will be recorded using a GPS unit. In addition to recording field findings, the photographs will be used to develop visual simulations.

4.24.3.3 Visibility of all Aboveground Interconnections and Roadways

The VIA will also discuss visibility of all other aboveground facilities including access roads, the Facility substation, any other electrical equipment required, and fences (anticipated to be a 8-foot

high chain-link fence). These features will be shown on visual simulations prepared as part of the VIA.

4.24.3.4 Appearance of the Facility upon Completion/Representative Views

A select number of visual simulations will be developed to show the anticipated appearance of the facility upon completion. Locations of visual simulations will be selected by Hecate Albany after conferring with state agencies, municipal planning representatives, and other stakeholders as described in Section 4.24.2. Simulations locations will be selected from locations that provide unobstructed views of Facility components, represent sensitive viewpoints as identified by the NYSDEC policy or stakeholders, and represent a variety of views from different elevations, distances, lighting conditions, and LSZ.

Photographic-based simulations will be developed using Autodesk 3ds Max® 3D modeling and rendering software. An accurate, scaled, detailed three-dimensional (3D) model of the proposed Facility components will be created based on the engineering plans and specifications included in the Application. To create the model, photograph location data captured by the GPS device will be transferred to GIS software, where it will be combined with GIS data of the preliminary layout of the Facility. A map showing these data will then be exported at true scale and imported into the 3D modeling software to create a 3D model of the Facility Area. GIS data will also be used to generate a terrain model and the Facility 3D model will be placed into the simulated landscape in real-world coordinates to ensure spatial accuracy.

To create the visual simulations, the location data captured by the GPS device is transferred to design software that combines the GIS data and the 3D model of the Facility. The views from the digital photographs are matched in the 3D modelling software using virtual cameras with the same focal length and field-of-view as the dSLR camera settings used to capture the digital photographs. Date- and time-specific lighting is added into the 3D model and then renderings are created for each simulation. The renderings are then overlaid on the site photography and any necessary modifications to the existing landscape are made to the images. The simulations will be presented on a page layout that shows the visual simulation along with an existing conditions photograph, location map, and information regarding the photography and simulated conditions.

4.24.3.5 Lighting

The VIA will describe lighting associated with the proposed Facility, the visual impact created by proposed lighting, and any proposed mitigation measures. Nighttime lighting will be limited to the proposed site entrance, substation, and possibly motion detection lighting at select locations

along fence if needed to improve security. No nighttime lighting is proposed as part of the PV arrays. Mitigation measures are anticipated to include considering off-site receptors when locating lights and choosing type of light, and use of security lighting and fixtures that are shielded and/or downward facing to minimize light intrusion off-site.

4.24.3.6 Nature and Degree of Visual Change from Construction

The VIA will discuss visual impacts as they relate to construction activities. Minor and temporary visual impacts are anticipated during construction, and are anticipated to include views of construction equipment, ground disturbance activities, construction worker activity, construction materials, vegetation removal, and dust.

4.24.3.7 Nature and Degree of Visual Change from Operation

Long-term visual impacts will include addition of the PV panels, access roads, and Facility substation to the landscape where they are visible. Visual simulations (as described in Section 4.24.3.4) will be utilized to illustrate visual change from selected sensitive viewpoints. Photographs of existing conditions will be compared with the simulations to determine how the Facility introduces contrasting elements into the landscape.

The level of visual contrast introduced by a project is measured by changes in form, line, color, and texture. In the context of the proposed Facility, existing landscape scenery is defined by the visual characteristics (form, line, color, and texture) associated with the landform, vegetation, and existing facilities within and adjacent to the Facility Area. Visual contrast will be assessed considering (1) landscape contrast – landform modifications that are necessary to prepare the Facility for access and/or construction, and the removal of vegetation to construct and maintain the facilities; and (2) structure contrast – the introduction of new, aboveground facilities into the landscape. A visual resource specialist trained in the BLM VRM process will utilize a modified version of the VRM Contrast Rating Form to assess contrast.

The term “sensitive viewers” refers to specific user groups associated with various land uses that have a sensitivity to landscape change and, therefore, could be adversely affected by the construction and operation of the proposed Facility. The sensitivity of viewers at each viewpoint is based on the following criteria: type of use; volume of use; duration of use; expected concern for aesthetics; and special status or designation. The expected response of sensitive viewers will be assessed based upon (1) level of visual contrast (i.e., form, line, color, and texture), (2) distance from the Facility, (3) viewing condition (i.e, level, inferior, or superior), (4) visibility

(screened, backdropped, or skylined), and (5) expected level of viewer sensitivity. These factors will be combined to determine the level of significant impact for sensitive viewpoints.

4.24.3.8 Related Operational Effects of Facility

Visual effects of the Facility will be limited to visibility of the PV panels and associated components: No plumes, shading, flare, or other visual impacts are anticipated during operation of the Facility. Glare is not anticipated to be a significant concern for the PV panels, as discussed in Section 4.24.1 of this PSS.

4.24.3.9 Proposed Mitigation

Mitigation measures that will be considered include those identified in NYSDEC Policy DEP-00-2 *Assessing and Mitigating Visual Impacts*, which include professional design and siting, screening, relocation, camouflage, low profile, use of non-specular materials, lighting, maintenance and setbacks (offsets). The professional design and siting that Hecate Albany will incorporate into the Facility layout serves as visual mitigation. As shown in Figure 3, swaths of forest have been preserved along drainages, which will serve to visually break up the sections of PV panels with natural landscapes and soften the overall appearance of the Facility. In addition, the Facility is located in a valley that contains mixed uses, including existing industrial facilities, surrounded by forested landscapes, blocking the Facility from many views outside the valley including from the Hudson River and areas west and south of the Facility Area (Figure 7). The Application will discuss these factors, and the feasibility and potential effects of additional mitigation measures if proposed to mitigate potentially significant impacts from specific sites. Screening is a measure commonly utilized for solar facilities, and may be accomplished by fencing, berming, or vegetation. The type of screening recommended would depend on the sensitivity of the viewpoint, the sensitivity of potential viewers, and the Facility components to be screened (PV panels, electrical equipment, or other aboveground facilities).

4.24.3.10 Description of All Visual Resources that would be Affected by the Facility

According to NYSDEC Policy DEP-00-2 *Assessing and Mitigating Visual Impacts,* the VIA must identify significant scenic and aesthetic resources within the 5-mile visual study, including the following types of resources:

- Properties on or eligible for inclusion in the National or State Register of Historic Places;
- State Parks;
- Urban Cultural Parks;

- State Forest Preserves;
- National Wildlife Refuges, State Game Refuges and State Wildlife Management Areas; National Natural Landmarks;
- Sites of the National Park System, including Recreation Areas, Seashores, and Forests;
- National or State Wild, Scenic or Recreational Rivers;
- Sites, areas, lakes, reservoirs or highways designated or eligible for designation as scenic;
- Scenic Areas of Statewide Significance (SASS);
- State or federally-designated trail, or one proposed for designation;
- Adirondack Park Scenic Vistas;
- State Nature and Historic Preserve Areas;
- Palisades Park; and
- Bond Act Properties purchased under Exceptional Scenic Beauty or Open Space Category.

In addition, Article 10 regulations (Section 1001.24.b.3) states that sensitive viewing areas "shall include recreational areas, residences, businesses, historic sites (listed or eligible for listing on the State or National Register of Historic Places), and travelers (interstate or other highway users)."

A preliminary list of sites of aesthetic resources/sensitive viewing areas within the 5-mile study area for the proposed Facility include those listed in Table 4.24-1.

Table 4.24-1: Preliminary List of Aesthetic Resources within the 5-mile Visual Study Areas

Site Number[1]	Site Name	Scenic Area of Statewide Significance?	Distance from Facility Area (miles)	Facility Visibility (topography only)	Facility Visibility (topography and forested land cover)
Properties Listed in or Eligible for the National or State Resister of Historic Places					
1	Babcock, Dr. John, House	Yes	2.2 miles	Views Possible	Views Possible
2	Bethlehem Grange No. 137	Yes	2.2 miles	Views Possible	No View
3	Bethlehem House	Yes	3.6 miles	No View/	No View
4	Blaisdell, Dr. Wesely, House	Yes	2.7 miles	No View/	No View
5	Blaisdell, Fletcher, Farm Complex	Yes	2.5 miles	Views Possible	No View
6	Coeymans School	Yes	2.6 miles	Views Possible	No View
7	Coeymans, Ariaanje, House	Yes	2.5 miles	No View	No View
8	Coeymans--Bronck Stone House	Yes	3.1 miles	Views Possible	No View
9	Croswell--Parsons Paper Mill Ruin	Yes	3.2 miles	No View	No View
10	District School No. 1	Yes	3.1 miles	No View	No View
11	District School No. 7	Yes	4.0 miles	No View	No View

Site Number[1]	Site Name	Scenic Area of Statewide Significance?	Distance from Facility Area (miles)	Facility Visibility (topography only)	Facility Visibility (topography and forested land cover)
12	First Reformed Dutch Church of Bethlehem	Yes	3.0 miles	Views Possible	No View
13	Harmanus Bleecker Library	Yes	4.2 miles	Views Possible	No View
14	Houghtaling, Abraham, House	Yes	2.5 miles	Views Possible	No View
15	Muitzes Kill Historic District	Yes	5.0 miles	Views Possible	Views Possible
16	Mull House and Cemetery	Yes	2.1 miles	No View	No View
17	Mull House and Cemetery	Yes	2.1 miles	No View	No View
18	New Baltimore Hamlet Historic District	Yes	4.1 miles	No View	No View
19	Onesquethaw Valley Historic District	Yes	1.8 miles	Limited Views Possible	Views Possible
20	Requa House	Yes	4.2 miles	Views Possible	No View
21	Rowe Farm	Yes	1.2 miles	Views Possible	Views Possible
22	Schodack Landing Historic District	Yes	3.0 miles	Views Possible	Views Possible
23	Schoonmaker House	Yes	2.4 miles	No View	No View
24	Shear, Israel, House	Yes	3.9 miles	No View	No View

Site Number[1]	Site Name	Scenic Area of Statewide Significance?	Distance from Facility Area (miles)	Facility Visibility (topography only)	Facility Visibility (topography and forested land cover)
25	Ten Eyck, Tobias, House and Cemeteries	Yes	0.7 miles	Views Possible	Views Possible
26	Valley Paper Mill Chimney and Site	Yes	4.9 miles	No View	No View
27	Van Der Zee, C., House	Yes	3.2 miles	No View	No View
28	Van derzee, Cornelius and Agnietje House	Yes	3.1 miles	No View	No View
29	Willis, Alexander, House	Yes	2.5 miles	No View	No View
State Parks					
30	Schodack Island State Park	Yes	2.5 miles	No View	No View
National Wildlife Refuges, State Game Refuges, and State Wildlife Management Areas					
31	Louise E. Keir WMA	Yes	2.3 miles	Views Possible	Views Possible
Scenic Areas of Statewide Significance					
32	Columbia-Greene North SASS CGN-1 Coeymans Hamlet Waterfront	Yes	2.4 miles	No View	No View

Site Number[1]	Site Name	Scenic Area of Statewide Significance?	Distance from Facility Area (miles)	Facility Visibility (topography only)	Facility Visibility (topography and forested land cover)
33	Columbia-Greene North SASS CGN-2 Hannacrois Creek Outlet	Yes	3.0 miles	No View	No View
34	Columbia-Greene North SASS CGN-3 New Baltimore Hamlet	Yes	3.6 miles	No View	No View
35	Columbia-Greene North SASS CGN-4 Islands	Yes	2.5 miles	No View	No View
36	Columbia-Greene North SASS CGN-5 Otter Hook	Yes	4.9 miles	No View	No View
37	Columbia-Greene North SASS CGN-13 Schodack Landing	Yes	2.9 miles	Views Possible	Views Possible
38	Columbia-Greene North SASS CGN-14 Stuyvesant Farms	Yes	4.0 miles	Views Possible	Views Possible
39	Columbia-Greene North SASS CGN-15 Poolsburg	Yes	4.0 miles	Views Possible	No View

Site Number[1]	Site Name	Scenic Area of Statewide Significance?	Distance from Facility Area (miles)	Facility Visibility (topography only)	Facility Visibility (topography and forested land cover)
40	Columbia-Greene North SASS CGN-16 Stuyvesant Woods	Yes	4.4 miles	Views Possible	Views Possible
Other Resources of Statewide or Regional Significance					
43	Onesquehtaw Creek Fishing Access Parking Lot (NYSDEC Site)	No	1.3 miles	No View	No View
44	Hudson River New Baltimore Waterway Access (NYSDEC Lands – 2 sites)	No	3.6	No View	No View
45	Hudson River – NYSDEC Boat Launch	No	2.8	No View	No View
Local Parks					
50	Coeymans Landing Park (Coeymans)	No	2.8	No View	No View
51	Cornell Park (New Baltimore)	No	4.2	No View	No View

Site Number[1]	Site Name	Scenic Area of Statewide Significance?	Distance from Facility Area (miles)	Facility Visibility (topography only)	Facility Visibility (topography and forested land cover)
48	Henry Hudson Town Park and Fishing Access (Selkirk)	No	4.0	No View	No View
49	Joralemon Park (Coeymans)	No	2.7	No View	No View
46	Mosher Park (Ravena)	No	1.9	No View	No View
47	Maple Ridge Park (Selkirk)	No	4.0	Views Possible	Views Possible
52	Selkirk Park (Selkirk)	No	1.6	Views Possible	No Views
	Lakes and Rivers				
N/A	Hudson River	Yes	2.3	No View	No View
Golf Courses					
N/A	Sycamore Country Club	No	2.9	No View	No View
Schools and Colleges					
N/A	Albertus W. Becker School	No	2.7	Views Possible	No View
N/A	Castleton Elementary School	No	4.0	No View	No View
N/A	Pieter B. Coeymans School	No	2.4	Views Possible	No View

Site Number[1]	Site Name	Scenic Area of Statewide Significance?	Distance from Facility Area (miles)	Facility Visibility (topography only)	Facility Visibility (topography and forested land cover)
N/A	Ravena-Coeymans-Selkirk Senior High School	No	0.5	Views Possible	View Possible
Major Transportation Corridors					
N/A	Interstate 87	No	1.5	Views Possible	No View
N/A	Interstate 90	No	1.5	Views Possible	No View
N/A	U.S. Route 9W	No	0.25	Views Possible	Views Possible
N/A	New York State Route 396	No	0.7	Views Possible	Views Possible
N/A	New York State Route 144	No	1.6	Views Possible	No View
N/A	County Road 101	No	Adjacent	Views Possible	Views Possible
N/A	County Road 102	No	1.7	No View	No View

[1] Where applicable, corresponds to Visual Resource Site on Figure 7.

It is important to note that cultural resource investigations for the Facility are not yet complete, and may identify additional properties eligible for the National or State Registers of Historic Places. If additional eligible properties are identified, they will be considered in the VIA for potential visual impacts.

The topographic viewshed analysis (described in Section 1.1.1.3) indicates that views of the Facility Area would be obscured by topography and/or vegetation at most of the aesthetic resources identified in Table 4.24-1. Locations where views are possible considering both topography and vegetation are limited to six properties listed on the NRHP, areas within Louise M. Keir Wildlife Management Area (WMA), one local park, Ravena-Coeymans-Selkirk Senior High School, several transportation corridors, and limited areas located within the Hudson River scenic landscape units, which extend beyond the Hudson River into the surrounding landscape. The NHRP properties, Louise M. Keir WMA, and the Hudson River scenic landscape units are considered aesthetic resources of statewide significance. The Louise M. Keir WMA features trails that climb east and southeast-facing slopes, where the topographic viewshed analysis indicates that views of a portion of the proposed Facility are possible. The Louise M. Keir WMA is heavily wooded, however, and any views towards the Facility Area would be restricted to openings in the trees along the trails.

Nine subunits of the Columbia-Green North Scenic Area of Statewide Significance (SASS) associated with the Hudson River are located within 2-5 miles from the proposed Facility Area boundary. The viewshed analysis indicates that six of these subunits (CGN-1, CGN-2, CGN-3, CGN-4, CGN-5, and CGN-15) will not have views of any of the Facility Area, and three subunits (CGN-13, CGN-14, and CGN-16) may have limited potential views of the Facility Area.

4.24.4 Other Material Issues Raised by the Public and Affected Agencies

Hecate received comments regarding real property, as summarized below in Table 4.24-2.

Table 4.24-2: Comments and Responses Regarding Visual

Date	Commenter	Issue/Comment Summary	Response
2/20/2018	Open House Attendee	Visual Impacts – concern about views from County Route 101, as it is higher in elevation, so	Hecate Albany will conduct a viewshed analysis to identify specific measures to mitigate

Date	Commenter	Issue/Comment Summary	Response
		vegetative screening may be less effective.	the potential viewshed impacts.

4.24.5 Proposed Avoidance, Minimization and Mitigation Measures

As discussed in Section 4.24.3.9, Hecate Albany is proposing to maintain several swaths of forested areas within the Facility Area boundary (Figure 2). This design approach will serve to mitigate the visual effects of the solar facility by breaking up the solar panels into smaller sections interspersed with natural landscapes. Additional measures to reduce, minimize, or avoid potential visual impacts from the Facility will be determined in consultation with the appropriate regulatory agencies and may include items such as:

- Landscaping around the perimeter of the PV panels, and around the substation to partially obscure the facility from surrounding roadways and residences;
- Use of non-specular materials and anti-glare coating;
- Utilization of shielded, downward-facing lighting fixtures to minimize off-site lighting impacts;
- Limitation of lighting to security lighting at the substation; and
- Additional screening options such as fencing and berming.

If reasonably unavoidable visual impacts from the Facility are identified, Hecate Albany will consult with municipal authorities, appropriate local stakeholders, and state agencies to identify specific measures to mitigate the impacts on specific resources. These agencies may include but are not limited to OPRHP, NYSDEC, and local planning authorities.

4.25 EFFECT ON TRANSPORTATION - EXHIBIT 25

4.25.1 Overview

4.25.1.1 Facility Layout

The proposed Facility will include a number of permanent on-site access roads to each component of the Facility for maintenance purposes. A preliminary layout of these access roads is depicted on the preliminary site plan included as Figure 2 to this PSS. Each roadway will be approximately 15 to 20 feet in width and will consist of a gravel and crushed stone cover type. A former raised railroad bed that transects the site in a northwest to southeast direction will serve as the primary access route with secondary access roads branching out to different areas of the

Facility. The only intersection with a public roadway anticipated at this time will be the site's existing access point located off of County Route 101. The existing driveway at this location that serves a farm processing facility will be improved as needed during Facility construction.

A conceptual site plan will be included in the Application and will identify the horizontal and vertical geometry, the connection with County Route 101, the number of approach lanes, the lane widths, shoulder width, traffic control devices (if needed), and sight distance of the Facility Area driveway off County Route 101 and any other access points determined to be necessary from public roadways. Additional information will be included in Exhibit 11: Preliminary Drawings of the Application depicting the layout and construction details of the Facility's proposed access roads.

4.25.1.2 Pre-Construction Characteristics of Facility Area Roads

As noted in Section 3.10, the Facility Area is located between County Route 101 to the west and US Route 9W to the east. A portion of the Facility Area is bound by County Route 101 which serves as the primary access road to the Callanan quarry and Oldcastle Precast (a manufacturer of precast concrete pipe and building products) located to the northwest of the Facility Area. County Route 101 is a two-lane roadway and is maintained by the Albany County Department of Public Works. US Route 9W is also a two-lane roadway and is maintained by the NYSDOT. It serves as the primary access road to the Lafarge quarry and the Lafarge Ravena Cement Plant, both of which are located within 1 mile of the Facility Area. The New York State Thruway parallels US Route 9W to the east. Local roads in the vicinity of the Facility Area include Kruger Road and Kinley Road, located east of the Facility Area.

The Facility will require usage of these road systems primarily during construction to transport equipment. During operations, road system usage by the Facility will be drastically reduced. Delivery of equipment from major highways will likely include Interstate 87 and Interstate 90. State and County roadways likely to be used during construction are US Route 9W, State Route 396, and County Route 101. It is not anticipated that local roadways within the vicinity of the Facility Area will be utilized as the primary access point to the Facility will be off County Route 101.

Data will be obtained from the NYSDOT Traffic Data Online Viewer to review Annual Average Daily Traffic (AADT) volumes along proposed approach and departure routes for the Facility. Accident information along those routes contained in the Accident Location Information System (ALIS) will be requested from the local police agencies and/or NYSDOT regional office.

The Study Area is located within the Ravena-Coeymans-Selkirk Central School district with the Ravena-Coeymans-Selkirk Regional High School located approximately 1,500 feet south of the

Facility Area on US Route 9W. The Application will include a review of the Ravena-Coeymans-Selkirk Central School district routes by obtaining publicly available school bus routes, number of buses, and times from these school districts.

The potential approach and departure routes to and from the Facility for police, fire, ambulance and other emergency vehicles will be identified in the Application. In addition, consultations that have occurred between the Co-Applicants and local emergency service providers will be summarized. These consultations will result in the emergency departments learning about the Facility, the Article 10 process, and how the Co-Applicants typically interact with fire and emergency service providers during construction and operation. The Co-Applicants will alert all local Fire Departments identified in the consultation process that there will be a fire and emergency training and communication plan developed as part of the Article 10 process.

The available load bearing and structural rating information for expected Facility traffic routes will be included in the Application. As there are a number of existing industrial uses that utilize the roadways surrounding the Facility Area, there are no issues anticipated with the load bearing and structural ratings of existing roadways and bridges when accessing the Facility Area.

The Facility is not located in a congested urbanized area and, therefore, the following tasks are not contemplated in accordance with Section 1001.25(b)(5) of the Article 10 regulations: results of 24-hour traffic volume counts and peak turning movement counts for typical weekday morning, weekday afternoon, and Saturday peaks, at representative critical intersections.

4.25.1.3 Trip Generation Characteristics during Construction and Operation

Potential impacts to traffic and transportation during construction will be evaluated, considering likely delivery routes and the types of vehicles to be used. Impacts during operation are expected to be minimal as only intermittent access will be required for operation and maintenance activities. For each major phase of the Facility, including construction and the operation phase, an estimate of the number and frequency of vehicle trips, including time of day and day of week arrival and departure distribution, by size, weight and type of vehicle will be included in the Application.

The heavy equipment and materials needed for site access, site preparation, and foundation construction are typical of road construction and do not pose unique transportation considerations. The types of heavy equipment and vehicles required would include small cranes, pile drivers, bulldozers, graders, excavators, front-end loaders, compactors, dump trucks, electric line trucks, water trucks, and heavy equipment maintenance vehicles. Typically, the equipment would be moved to the Facility Area by flatbed combination truck and would remain on site through

the duration of construction activities. Typical construction materials hauled to the site would include gravel, sand, water, steel, electrical cable and components, fencing, and lumber. Ready-mix concrete might also be transported to the site. The movement of equipment and materials to the Facility Area during construction would cause a relatively short-term, minimal increase in the traffic levels on surrounding roadways during the approximately 9 to 12-month construction period.

An identification of approach and departure routes to and from the Facility Area out to a 5-mile distance for vehicles carrying water, fuel oil, bulk fuels, chemicals or hazardous materials for construction or operation of the Facility will be included in the Application.

Major cut or fill activity (spoil removal or deposition at the Facility site and affected interconnection areas) is not anticipated during construction of the Facility. The existing topography of the Facility Area is well-suited for placement of a solar facility. The land slopes gently to the south and east and is composed of low rolling hills interspersed with nearly flat fields and, as such, cut or fill activity will be minimal. Thus, a separate estimate of the number and frequency of vehicle trips for spoil removal or deposition at the Facility is not proposed to be developed.

The approach and departure routes to and from the Facility Area for construction workers and employees of the Facility will include the same existing roadways discussed above.

4.25.1.4 Traffic and Transportation Study

As discussed in Section 4.25.3 above, potential impacts to traffic and transportation will primarily occur during the construction phase for the Facility. Impacts during operation are expected to be minimal as only intermittent access will be required for operation and maintenance activities. During construction, it is anticipated that a peak of up to 200 workers will be working at the site at any given time, resulting in an increase in vehicle trips in and around the Facility Area. In addition, delivery of panels and other Facility components will result in additional vehicle trips. To assess the impacts of these additional vehicle trips associated with the construction of the Facility, a traffic study will be conducted. The Application will contain a comparison of projected future traffic conditions with and without the proposed Facility, the analysis to be conducted separately for the peak construction impacts of the Facility and for the typical operations of the completed Facility. Because the Facility is not in a congested urbanized area, a calculation and comparison of the level of service for each representative intersection or detail for each turning movement is proposed to not be included.

The Application will also contain an evaluation of the adequacy of the road system to accommodate the projected traffic. This adequacy analysis will be conducted separately for the construction impacts of the Facility and for the typical operations of the completed Facility. Transportation logistics for the Facility will be reviewed early in the planning process. The estimated number of delivery trips for solar array components, interconnection and substation facilities and road materials will be provided in the Application. No over-sized load deliveries are anticipated. The largest Facility components should likely be the main electrical step-up transformer to be located in the substation and which will not require the use of oversized vehicles for delivery. The Application will discuss the typical type of delivery vehicles required and provide a discussion on the adequacy of the existing road system to facilitate these types of vehicles. Although no anticipated, any temporary improvements to roadways, if determined necessary, will be identified in the Application.

The Application will also include an identification and evaluation of practicable mitigation measures if warranted regarding traffic and transportation impacts, including time restrictions, the use of alternative technologies, the construction of physical roadway improvements, and the repair of local roads due to damage by heavy equipment or construction activities during construction of the Facility. No new traffic control devices are anticipated to be necessary and no damage to roads during Facility operations are expected.

A description of road use and restoration agreements, if any are required, between the Co-Applicants and municipalities or other entities regarding repair of local roads damaged by heavy equipment or construction activities during construction or operation of the Facility will be provided in the Application.

4.25.1.5 Impacts on Mass Transit Systems

There are no mass transit systems in the vicinity of the Facility Area. Therefore, impacts to mass transit systems as a result of Facility construction and operation are not anticipated and will not be addressed in the Application.

4.25.1.6 Federal Aviation Administration Notice of Proposed Construction

Facility construction and operation are not anticipated to affect aviation. Construction of the Facility will not involve the use of construction equipment greater than 200 feet in height above the ground level and will not be near or at a civilian public or military airport or heliport. Therefore, consultations with the Federal Aviation Administration (FAA) are not required and will not be included in the Application. Consultations will occur with any public airports or heliports identified

on the Facility's Stakeholder List (Appendix B) as part of the PIP Plan and summarized in the Application, as applicable.

4.25.2 Proposed Studies

Exhibit 25 of the Application will follow the requirements outlined in the applicable Subsections (a) through (f) of Section 1001.25 of the Article 10 regulations, as follows.

Exhibit 25 will contain:

- (a) A conceptual site plan, drawn at an appropriate scale, depicting all Facility site driveway and public roadway intersections horizontal and vertical geometry, the number of approach lanes, the lane widths, shoulder widths, traffic control devices by approaches, and sight distances. The site plans will be developed for the Facility Area driveway off County Route 101 and any other access points determined to be necessary from public roadways;
- (b) A description of the pre-construction characteristics of the roadways in the vicinity of the Facility, including:
    - (1) a review of existing data on vehicle traffic, use levels and accidents obtained from obtained from the NYSDOT Traffic Data Online Viewer, the ALIS and other publicly available data;
    - (2) a review of transit facilities and routes, including areas of school bus service;
    - (3) an identification of potential approach and departure routes to and from the Facility site for police, fire, ambulance and other emergency vehicles;
    - (4) a review of available load bearing and structural rating information for expected Facility traffic routes; and
- (c) An estimate of the trip generation characteristics of the facility during both construction and operation, including:
    - (1) for each major phase of construction, and for the operation phase, an estimate of the number and frequency of vehicle trips, including time of day and day of week arrival and departure distribution, by size, weight and type of vehicle;
    - (2) an identification of approach and departure routes to and from the facility site out to a 2-mile distance for vehicles carrying water, fuel oil, bulk fuels (including wood, biomass, coal and municipal solid waste), chemicals or hazardous materials for construction or operation of the facility;
    - (3) an identification of approach and departure routes to and from the Facility site for construction workers and employees of the Facility.

- (d) An analysis and evaluation of the traffic and transportation impacts of the Facility, including:
    - (1) a comparison of projected future traffic conditions with and without the proposed Facility, the analysis to be conducted separately for the peak construction impacts of the Facility and for the typical operations of the completed Facility;
    - (2) an evaluation of the adequacy of the road system to accommodate the projected traffic, the analysis to be conducted separately for the peak construction impacts of the Facility and for the typical operations of the completed Facility, the analysis to also include an identification of the extent and duration of traffic interferences during construction of the Facility and any interconnections;
    - (3) an assessment of the adequacy of roadway systems to accommodate the vehicles to be utilized for delivery of Facility components during construction; improvements necessary to accommodate deliveries; impacts associated with such improvements; and mitigation measures appropriate to minimize such impacts;
    - (4) an identification and evaluation of practicable mitigation measures as warranted regarding traffic and transportation impacts, including time restrictions, the use of alternative technologies, the construction of physical roadway improvements, the installation of new traffic control devices, and the repair of local roads due to damage by heavy equipment or construction activities during construction or operation of the Facility; and
    - (5) a description of all road use and restoration agreements, if any, between the Co-Applicants and landowners, municipalities, or other entities, regarding repair of local roads damaged by heavy equipment or construction activities during construction or operation of the Facility.
- (e) An analysis and evaluation of the impacts of the facility on airports and airstrips, railroads, subways, buses and any other mass transit systems in the vicinity of the Facility. The analysis and evaluation shall include impacts on military training and frequent military operations in the National Airspace System and Special Use Airspace designated by the Federal Aviation Administration.

4.26 EFFECT ON COMMUNICATION - EXHIBIT 26

4.26.1 Overview

The proposed Facility is not anticipated to interfere with any existing communication systems including AM/FM radio, television reception, microwave communication, and military or civilian radar systems. The Facility will lack tall structures and exposed moving parts, and it is anticipated that it will generate only very weak electromagnetic fields (EMF).

The Facility is not expected to have any material impact on military or civilian radar systems because it lacks tall structures that could potentially block radar signals. As noted above, it also lacks exposed moving parts and it is anticipated to generate only weak EMF that will dissipate rapidly within short distances.

Based on the foregoing, the following communication systems are not anticipated to be impacted by Facility construction or operation and are proposed to not be addressed in the Application:

- AM/FM radio
- television
- telephone
- microwave transmission
- land mobile radio including emergency services/first responders, municipal/school districts and public utility services
- radar
- air traffic control
- armed forces
- federal government systems, including GPS and hyperbolic long-range navigation (LORAN); and
- amateur radio

4.26.2 Proposed Studies

A study will be performed for the Facility in compliance with the requirements of the Article 10 regulations for Exhibit 26. A plan will be developed to address any potentially significant adverse impacts to communication systems. Specifically, locations of underground fiber optic cable within the 2-mile Study Area will be identified in the Application, to the extent such cable is publicly known. This Exhibit will also provide a description of the publicly known communication systems within a 2-mile radius of the Facility and describe any expected impacts to those systems, if any.

A more general discussion of the anticipated effects of the proposed Facility (including the electric interconnection) on the communication systems identified above in Section 4.26.1, will address the following:

- Physical disturbance due to construction;
- Adverse impacts to co-located lines due to unintended bonding; and
- Other potentials for interference.

4.26.3 Proposed Avoidance, Minimization and Mitigation Measures

Communication systems are not anticipated to be affected by Facility construction and operation. However, as described in Section 4.12.1 the Co-Applicants will develop a complaint resolution process through which residents can submit a formal complaint should any issues arise as a result of construction or operation of the Facility to communication systems.

No unavoidable impacts are anticipated. If there are, they will be resolved on a case- by -case basis using the complaint resolution procedure to be submitted, as described in Section 4.12.1.

4.26.4 Proposed Studies

Exhibit 26 of the Application will follow the requirements outlined in the applicable Subsections (a) through (e) of Section 1001.25 of the Article 10 regulations, as follows.

Exhibit 26 will contain:

- (b) An identification of all existing underground cable and fiber optic major transmission telecommunication lines within a 2-mile radius of the Facility and the electric interconnection between the Facility and the POI, to the extent known.
- (c) A statement describing the anticipated effects of the proposed Facility and the electric interconnection between the Facility and the POI on the communications systems required to be identified above, including the potential for:
    - physical disturbance by construction activities;
    - adverse impacts to co-located lines due to unintended bonding; and
    - any other potential for interference.
- (d) Communication systems are not anticipated to be affected by Facility construction and operation. However, the Co-Applicants will develop a complaint resolution process through which residents can submit a formal complaint should any issues arise as a result of construction or operation of the Facility to communication systems. The complaint resolution process will be included in Exhibit 12 of the Application.

4.27 SOCIOECONOMIC EFFECTS - EXHIBIT 27

The socioeconomic impacts of the Facility will be determined consistent with the requirements of Article 10 and the Co-Applicants will evaluate the following general categories: construction workforce, associated payroll, primary and secondary employment and economic activity, school district and infrastructure costs.

4.27.1 Overview

A specialized and non-specialized workforce will be required for construction of the Facility. A majority of the local workers will be sourced locally to the extent available within the local community. Nonlocal workers will be mainly required for supervision and to supplement the local construction workforce. This will result in a relatively small temporary in-migrating of workers that will require temporary accommodations, housing, and food services. Operation of the Facility will require a smaller workforce that may be hired from the local community while specialty workers from equipment vendors may be sourced outside the area for occasional O&M activity. A significant portion of the payroll to the construction and operation workforce is likely to recirculate into the local economy through local expenditures and taxes.

Various supplies and services for the Facility are expected to be purchased from local suppliers and companies. Construction of the Facility will require trucking, gravel, and concrete among other services and supplies. This will lead to additional revenues for area businesses, and possible hiring of additional temporary workers. Total economic impact on the local area is composed of direct, indirect, and induced economic impacts. Any supplies and services purchased locally and any financial compensation received by local workers is a direct impact of the Facility. Reinvestment of these revenues by businesses and workers at other local businesses should result in the indirect impact of increasing revenues in the local economy. Induced impacts should occur as a result of employees of the businesses re-spending money at other businesses in the area.

Local spending will result in increased tax revenue for the Town of Coeymans. The Facility will also provide revenues to the local community through a PILOT arrangement. Increased municipal revenues will benefit the County, School District, emergency services, and essential infrastructure.

Owners of properties with proposed Facility components will receive lease payments during operation from Hecate Albany. No recreational or tourist facilities will be displaced by the Facility and the facility will draw relatively little municipal services.

The Applicant proposes to evaluate the socioeconomic impacts from construction and operation of the Facility by developing and analyzing the following information:

- Construction
    - The average construction work force by discipline, for each quarter, and during the construction period;
    - The peak construction employment level;
    - Estimated construction payroll; and
    - Direct non-payroll expenditures likely to be made in the vicinity of the Facility, including materials, services, rentals, and similar categories.
- Operation
    - Number of jobs and payroll, during a typical year once the Facility is in operation; and
    - Other expenditures likely to be made in the vicinity of the Facility during a typical year of operation.

The Co-Applicants will seek to rely on actual job and economic impact numbers from previous projects and industry data in informing socioeconomic effect estimates for the Facility. The Co-Applicants will make efforts to use job and economic impact numbers from projects that most closely resemble the Facility in terms of location, MW capacity, acreage, and/or regional economics.

The Facility is not anticipated to result in any additional operation or infrastructure costs to the local school districts, municipalities, authorities, or utilities. Consultations with the local municipality will be pursued to verify this assumption. Hecate Albany will also consult with local fire and emergency services, to determine if the local emergency response capacity, including specific training and equipment, is sufficient to meet the needs, if any, during construction or operation of the Facility.

Real property taxes or PILOT payments, benefit assessments, and user fees that will be paid by Hecate Albany will be estimated for inclusion in this Exhibit. Any fiscal costs to the municipality that may result from the construction and operation of the Facility, although none are expected, should be compared to the tax revenues and payments.

Finally, this Exhibit will include a detailed statement indicating how the proposed Facility and interconnections are consistent with each of the applicable state smart growth public infrastructure criteria specified in ECL § 6-0107, or why compliance would be impracticable.

4.27.2 Proposed Avoidance, Minimization and Mitigation Measures

To mitigate financial implications of placing Facility components on private property, property owners with Facility components will receive payments from Hecate Albany during operations.

Although not expected, construction of the Facility may impact local roads and necessitate their repair or upgrade to accommodate construction vehicles and higher activity. Hecate Albany will ensure all public roads used are returned to the same condition than they were before construction, at no expense to taxpayers.

4.27.3 Other Material Issues Raised by the Public and Affected Agencies

Hecate Albany has received comments regarding socioeconomic issues. These are summarized in Table 4.27-1.

Table 4.27-1: Comments and Responses Regarding Socioeconomic Effects

Date	Commenter	Issue/Comment Summary	Response
1/26/2018	Town of Coeymans	Local Benefits – can the energy generated be made available for sale to residents?	Hecate Albany is investigating the feasibility of providing local access to energy generated. by the Facility.
2/20/2018	Open House Attendee	Local Benefits – resident asked if there will be a PILOT program	Yes, Hecate Albany plans to pursue PILOT negotiations.

4.27.4 Proposed Studies

Exhibit 27 of the Application will follow the requirements outlined in the applicable Subsections (a) through (l) of Section 1001.27 of the Article 10 regulations, as follows.

Exhibit 27 will contain:

- (a) An estimate of the average construction work force, by discipline, for each quarter, during the period of construction; and an estimate of the peak construction employment level.
- (b) An estimate of the annual construction payroll, by trade, for each year of construction and an estimate of annual direct non-payroll expenditures likely to be made in the vicinity

of the Facility (materials, services, rentals, and similar categories) during the period of construction.

- (c) An estimate of the annual secondary employment and economic activity likely to be generated in the vicinity of the Facility by the construction of the solar Facility. This analysis will state the basis of any economic multiplier factor or other assumption used.
- (d) An estimate of the number of jobs and the on-site payroll, by discipline, during a typical year once the Facility is in operation, and an estimate of other expenditures likely to be made in the vicinity of the Facility during a typical year of operation.
- (e) An estimate of the annual secondary employment and economic activity likely to be generated in the vicinity of the facility by its operation.
- (f) An estimate of incremental school district operating and infrastructure costs due to the construction and operation of the Facility, this estimate to be made after consultation with the affected school districts.
- (g) An estimate of incremental municipal, public authority, or utility operating and infrastructure costs that will be incurred for police, fire, emergency, water, sewer, solid waste disposal, highway maintenance and other municipal, public authority, or utility services during the construction and operation phases of the Facility (this estimate to be made after consultation with the affected municipalities, public authorities, and utilities).
- (h) An identification of all jurisdictions (including benefit assessment districts and user fee jurisdictions) that levy real property taxes or benefit assessments or user fees upon the Facility site, its improvements and appurtenances and any entity from which payments in lieu of taxes will or may be negotiated.
- (i) For each jurisdiction, an estimate of the incremental amount of annual taxes (and payments in lieu of taxes, benefit charges and user charges) it is projected would be levied against the post-construction Facility site, its improvements and appurtenances.
- (j) For each jurisdiction, a comparison of the fiscal costs to the jurisdiction that are expected to result from the construction and operation of the Facility to the expected tax revenues (and payments in lieu of taxes, benefit charge revenues and user charge revenues) generated by the Facility.
- (k) An analysis of whether all contingency plans to be implemented in response to the occurrence of a fire emergency or a hazardous substance incident can be fulfilled by existing local emergency response capacity, and in that regard identifying any specific equipment or training deficiencies in local emergency response capacity (this analysis to be made after consultation with the affected local emergency response organizations).

- (l) A detailed statement indicating how the proposed Facility and interconnections are consistent with each of the state smart growth public infrastructure criteria specified in ECL 6-0107, or why compliance would be impracticable.

4.28 ENVIRONMENTAL JUSTICE - EXHIBIT 28

Per NYSDEC Environmental Justice Policy CP-29, Potential Environmental Justice Areas include census block groups featuring populations that meet or exceed at least one of the following statistical thresholds:

- At least 51.1% of the population in an urban area reported themselves to be members of minority groups;
- At least 33.8% of the population in a rural area reported themselves to be members of minority groups; or
- At least 23.59% of the population in an urban or rural area had household incomes below the federal poverty level.

4.28.1 Overview

The Co-Applicants have considered whether the Facility could have negative impacts on nearby environmental justice areas. As noted previously, the Facility will not result in emissions or air quality impacts beyond temporary vehicle/equipment emissions and fugitive dust during construction. Therefore, the Impact Study Area is defined as a 0.5-mile radius around all Facility components (Figure 8).

Based on data obtained from the NYSDEC's GIS Tools for Environmental Justice website, there are no Potential Environmental Justice Areas within the Study Area (NYSDEC 2018d). The nearest Potential Environmental Justice Area to the Facility Area is over 7 miles away, within the City of Albany (76.27% of the population of this census block group are members of minority groups and 41.55% of the population of this census block group have a household income below the federal poverty level). A map depicting this Potential Environmental Justice Area in relation to the Facility Area will be provided in the Application.

The Co-Applicants provided this information in the PIP Plan and, to date, no comments have been received regarding potential impacts to Environmental Justice Areas. The Facility will not have an impact on the Potential Environmental Justice Area described above as it is over 7 miles away, or any other Environmental Justice Areas. Therefore, the full Environmental Justice Analysis outlined in 6 NYCRR 487.6 is not required, and is proposed to not be included in the Application.

4.28.2 Proposed Studies

Exhibit 28 will contain:

- (a) A map of potential Environmental Justice Areas in relation to the facility; and,
- (b) A statement indicating that there are no Environmental Justice Areas within a 0.5-mile study area, why the Facility will not have an impact on Potential Environmental Justice Areas identified by NYSDEC GIS Tools for Environmental Justice website located nearest to the Facility Area and why a full Environmental Justice Analysis as outlined in 6 NYCRR 487.6 is not required.

4.29 SITE RESTORATION AND DECOMMISSIONING - EXHIBIT 29

Hecate Albany will identify performance criteria proposed for site restoration in the event the Facility cannot be completed and for decommissioning of the Facility at the end of its commercial useful life. Hecate Albany will also discuss how the selected criteria are appropriately addressing:

- Safety and the removal of hazardous conditions;
- Environmental impacts;
- Aesthetics;
- Salvage and recycling;
- Potential future uses for the site; and
- The commercial useful life of the facility.

4.29.1 Overview

Should the Facility be abandoned before completion of construction or at the end of its useful commercial life, and it were to remain in place, the land on which it would be sited could not be utilized for other uses such as traditional agriculture, residences or industry as allowed by local zoning. By having a decommissioning plan, measures will be in place to ensure that all components of the Facility are removed so that the land can be utilized in the future.

4.29.2 Extent and Quality of Information Required

A decommissioning plan will be prepared that will provide for the quantification of the salvage value of the Facility components as well as a plan for, and cost of, decommissioning the Facility. This plan will also set forth requirements for disposal of any hazardous materials (not planned). This plan will specify how decommissioning and restoration, if required, will be funded and will provide a schedule for conducting such activities.

Since the proposed Facility is to be located on private land under lease agreement, the plan will also include a description of site restoration and decommissioning addressed in agreements between Hecate Albany and the landowner, as applicable, specifically addressing provisions for the removal of the solar panels, racking, inverters, electrical collection lines, and site interconnection/substation facilities.

4.29.3 Proposed Avoidance, Minimization and Mitigation Measures

The Application will include information on Hecate's plan to cover the cost of decommissioning. Financial assurance, such as a future cash reserve, corporate guarantee, or letter of credit will be considered to cover the cost of decommissioning less the salvage value of the Facility components. This will provide funding for decommissioning of the Facility either if the Facility cannot be completed or is abandoned at the end of its useful commercial life. The land can then be restored to its present condition.

4.29.4 Proposed Studies

Exhibit 29 of the Application will follow the requirements outlined in the applicable Subsections (a) through (b) of Section 1001.29 of Article 10 of the Public Service Law as follows.

Exhibit 29 will contain:

- (a) A statement of the performance criteria proposed for site restoration in the event the Facility cannot be completed and for decommissioning of the Facility, including a discussion of why the performance criteria are appropriate. Among other things, the statement shall address:
    - safety and the removal of hazardous conditions;
    - environmental impacts;
    - aesthetics;
    - salvage and recycling;
    - potential future uses for the site; and
    - the useful life of the facility.
- (b) A plan for the decommissioning and restoration of the Facility site including how such decommissioning and restoration shall be funded and a schedule for the conduct of decommissioning and site restoration activities.

4.30 NUCLEAR FACILITIES - EXHIBIT 30

This Exhibit is not applicable to the proposed Facility as no nuclear facilities are proposed.

4.31 LOCAL LAWS AND ORDINANCES - EXHIBIT 31

Exhibit 31 of the Application will include an analysis of local laws and ordinances that are applicable to the construction, operation and maintenance of the Facility. Local laws and ordinances of both a procedural and substantive nature will be identified. The Co-Applicants will continue to consult with the Town of Coeymans and other local agencies whose requirements are the subject of this exhibit to determine whether the Co-Applicants have correctly identified all such requirements and to determine whether any potential request by the Co-Applicants that the Siting Board elect to not apply any such local requirement could be obviated by design changes to the proposed Facility, or otherwise.

4.31.1 Applicable Local Laws and Ordinances of a Procedural Nature

The following is a list of local ordinances, laws, resolutions, standards and other requirements anticipated to be applicable to the construction or operation of the proposed Facility:

- Town of Coeymans General Legislation:
  - Chapter 71 Building Construction and Fire Prevention
  - Chapter 136 Site Plan Review
  - Chapter A170 Permit Fees

It is Hecate Albany's understanding that the Town of Coeymans is currently drafting a proposed solar ordinance; the Facility's consistency with this ordinance will be addressed in the Application.

Procedural requirements are supplanted by Article 10 of the PSL unless the Board expressly authorizes the exercise of the procedural requirement by the local municipality or agency. Absent Article 10, the Facility would require site plan review by the Town Planning Board to confirm compliance with applicable provisions of the Town's zoning ordinance and other applicable local codes.

4.31.2 Building Permit Issuance

The Town of Coeymans would be responsible for building permit review to certify compliance with the New York State Uniform Fire Prevention and Building Code and the Energy Conservation Construction Code of New York State. Typically, the Town's Building Department is responsible for building permit review. The Co-Applicants will consult with the Town to determine the Town's capabilities to review and approve building plans; inspect as necessary, the construction work; and to certify compliance with the applicable building codes (i.e., New York State Uniform Fire Prevention and Building Code and the Energy Conservation Construction Code of New York

State) for the Facility. Further information identifying who will be responsible for building permit issuance will be provided in the Application following these consultations.

4.31.3 Applicable Local Laws and Ordinances of a Substantive Nature

A list and description of all local laws and regulations of a substantive nature anticipated to be applicable to the construction, operation or maintenance of the proposed Facility is provided in Table 4.31-1. A preliminary assessment of the Facility's ability to comply with each of these substantive local laws and regulations has been provided. Where compliance is not anticipated, a statement has been provided indicating specific provisions that the Co-Applicants anticipate they will be requesting the Siting Board to elect not to apply, in whole or in part, and a preliminary explanation as to why the Siting Board should elect not to apply the specific provisions as unreasonably burdensome in view of the existing technology or the needs of or costs to ratepayers whether located inside or outside of such municipality.

Table 4.31-1: Substantive Local Laws and Ordinances Applicable to the Facility

Chapter/Section	Title
Chapter 102	**Garbage and Garbage Receptacles**
§102-7	Dumpsters and roll-offs
Chapter 145	**Subdivision of Land**
Article IV	General Requirements and Design Standards, including: • §145-21.D Driveway access • 145-22 Drainage improvements • 145-23.F Preservation of natural features
Chapter 165	**Zoning**
Article IV	Regulations, including: • §165-7 Effect of establishment of districts • §165-8 Schedule of District Zoning Regulations • §165-9 Standards for special permits • §165-10 Supplementary regulations

The Facility Area is not located within a State-designated coastal zone and accordingly, there is no Local Waterfront Revitalization Program applicable to the Facility.

It is anticipated that the Facility can be designed so as to comply with the general provisions and intent of the Town of Coeymans' substantive requirements, with the exception of the "Maximum Percent of Lot to be Occupied" dimensional regulation of the zoning ordinance (§165-8 Schedule of District Zoning Regulations).

According to the Town of Coeymans' Zoning Code, most of the Facility components are proposed to be located in the Planned Residential (R4P) District. The northern extent of the Facility Area is located within the Industrial (I) District, and portions of the Facility Area along the east and south boundaries are located within the Residential and Agricultural District (RA). The I zoning district has a "maximum percent of lot to be occupied" requirement of 70% for principal buildings. The R4P and RA zoning districts have a "maximum percent of lot to be occupied" requirement of 15% for principal buildings. A building is defined as any structure other than a boundary wall or fence (Town of Coeymans Zoning Ordinance §165-3). Furthermore, a structure is defined as anything constructed or erected, the use of which requires location on the ground or attachment to something having location on the ground (Town of Coeymans Zoning Ordinance §165-3).

As the solar panels to be located within the portion of the Facility Area zoned as R4P and RA will cover approximately up to 50% (depending on what areas are included in the calculation) of the residentially-zoned parcels making up the Facility Area, the Facility may not be in compliance with this dimensional regulation of 15%. It is anticipated that the Facility will be able to comply with the 70% maximum percent of lot to be occupied requirement of the I zoning district.

The Co-Applicants will continue to consult with the Town of Coeymans to explore its application of the zoning ordinance. Should the Facility not be able to comply with this dimensional regulation, the Co-Applicants will request that the Siting Board not to apply it to the Facility as the regulation would be unreasonably burdensome in view of the existing technology. In order to meet the 40-MW (AC) generating capacity for the proposed Facility, adequate land area is required to site the number of solar panels necessary to meet this generating capacity. Therefore, limiting the coverage of the solar array to 15% of the residentially zoned portions of the Facility Area would be unreasonably burdensome. Utility-scale solar power facilities such as the Facility are consistent with the NYPSC's proceeding implementing a Clean Energy Standard and are necessary to support the development of clean energy and renewable resources in New York State.

4.31.4 Local Laws and Ordinances Applicable to Utility Interconnections in Public ROWs

The Facility will not require any interconnections for water, sewer or steam lines. Should the Co-Applicants determine that an interconnection is required for the Facility to a telecommunication utility within a public ROW, the Application will include a list of all local ordinances, laws, resolutions, regulations, standards and other requirements applicable to the interconnection both of a procedural and substantive nature. Based upon a preliminary review, it is anticipated that the local laws and ordinances that would be applicable to any proposed telecommunication utilities would be consistent with those listed in Sections 4.31.1 through 4.31.3 above.

4.31.5 Zoning Designations and Permitted Uses

As noted above, the Town of Coeymans Zoning Map indicates that most of the Facility components are proposed to be located in the Planned Residential ("R4P") District. The northern extent of the Facility Area is located within the Industrial ("I") District, and portions of the Facility Area along the east and south boundaries are located within the Residential and Agricultural District ("RA"). Electric generating facilities and, more specifically solar energy generating facilities, are not a specifically listed use in the Town's zoning ordinance. However, Public Utility Facilities are an allowable principal use for each zone in which the Facility will be located.

4.31.6 Proposed Studies

Exhibit 31 of the Application will follow the requirements outlined in Subsections (a) through (j) of Section 1001.31 of the Article 10 regulations as follows.

Before preparing the exhibit required by this section, the Co-Applicants will consult with the municipalities or other local agencies whose requirements are the subject of the exhibit to determine whether the Co-Applicants have correctly identified all such requirements and to determine whether any potential request by the Co-Applicants that the Siting Board elect to not apply any such local requirement could be obviated by design changes to the proposed Facility, or otherwise.

Exhibit 31 will contain:

- (a) A list of all local ordinances, laws, resolutions, regulations, standards and other requirements applicable to the construction or operation of the proposed major electric generating facility (includes interconnection electric transmission lines and fuel gas transmission lines that are not subject to review under Article VII of the PSL) that are of a procedural nature. These local procedural requirements are supplanted by PSL Article 10

unless the Siting Board expressly authorizes the exercise of the procedural requirement by the local municipality or agency.

- (b) A list of all local procedural requirements required to be identified pursuant to subdivision (a) of this section for which the Co-Applicants request that the Board expressly authorize the exercise of the procedural requirement by the local municipality or agency, including a statement why such local exercise would be desirable or appropriate.
- (c) Identification of the city, town, village, county, or State agency qualified by the Secretary of State that shall review and approve the building plans, inspect the construction work, and certify compliance with the applicable codes that may include New York State Uniform Fire Prevention and Building Code, the Energy Conservation Construction Code of New York State, and the substantive provisions of any applicable local electrical, plumbing or building code. If no other arrangement can be made, the NYSDOS should be identified. The statement of identification shall include a description of the preliminary arrangement made between the Co-Applicants and the entity that shall perform the review, approval, inspection, and compliance certification, including arrangements made to pay for the costs thereof including the costs for any consultant services necessary due to the complex nature of such facilities. If the applicable city, town or village has adopted and incorporated the New York State Uniform Fire Prevention and Building Code for administration into its local electric, plumbing and building codes, the Co-Applicants may make a request pursuant to subdivision (b) of this section that the Siting Board expressly authorize the exercise of the electric, plumbing and building permit application, inspection and certification processes by such city, town or village.
- (d) A list of all local ordinances, laws, resolutions, regulations, standards and other requirements applicable to the construction or operation of the proposed major electric generating facility (includes interconnection electric transmission lines and fuel gas transmission lines that are not subject to review under Article VII of the PSL) that are of a substantive nature, together with a statement that the location of the facility as proposed conforms to all such local substantive requirements, except any that the applicant requests that the Board elect to not apply. Copies of zoning, flood plain and similar maps, tables and/or documents shall be included in the exhibit when such are referenced in such local substantive requirements. Pursuant to PSL §168(3)(e), the Siting Board must find that the Facility is designed to operate in compliance with these local substantive requirements, all of which shall be binding upon the applicant, unless the Board elects to not apply them by finding that, as applied to the proposed Facility such are unreasonably burdensome in

view of the existing technology or the needs of or costs to ratepayers whether located inside or outside of such municipality.

- (e) A list of all local substantive requirements required to be identified pursuant to subdivision (d) of this section for which the Co-Applicants request that the Siting Board elect to not apply them by finding that, as applied to the proposed Facility such are unreasonably burdensome in view of the existing technology or the needs of, or costs to, ratepayers whether located inside or outside of such municipality. For each local substantive requirement identified, a statement justifying the request shall be provided. The statement of justification shall show with facts and analysis the degree of burden caused by the requirement, why the burden should not reasonably be borne by the Co-Applicants, that the request cannot reasonably be obviated by design changes to the proposed Facility, the request is the minimum necessary, and the adverse impacts of granting the request are mitigated to the maximum extent practicable. The statement shall include a demonstration:
    - (1) for requests grounded in the existing technology, that there are technological limitations (including governmentally imposed technological limitations) related to necessary Facility component bulk, height, process or materials that make compliance by the Co-Applicants technically impossible, impractical or otherwise unreasonable;
    - (2) for requests grounded in factors of costs or economics (likely involving economic modeling), that the costs to consumers associated with applying the local substantive requirement outweigh the benefits of applying such provision; and
    - (3) for requests grounded in the needs of consumers, that the needs of consumers for the Facility outweigh the impacts on the community that would result from refusal to apply the local substantive requirement.
- (f) A list of all local ordinances, laws, resolutions, regulations, standards and other requirements applicable to the interconnection to or use of telecommunication lines in public ROWs that are of a procedural nature. These local procedural requirements are not supplanted unless the Siting Board elects to not apply them by finding that, as applied to the proposed Facility interconnections such are unreasonably burdensome in view of the existing technology or the needs of or costs to ratepayers whether located inside or outside of such municipality.

- (g) A list of all local ordinances, laws, resolutions, regulations, standards and other requirements applicable to the interconnection to or use of telecommunication lines in public ROWs that are of a substantive nature. These local substantive requirements are not supplanted unless the Siting Board elects to not apply them by finding that, as applied to the proposed Facility interconnections such are unreasonably burdensome in view of the existing technology or the needs of or costs to ratepayers whether located inside or outside of such municipality.
- (h) A list of all local procedural or substantive requirements required to be identified pursuant to subdivisions (f) and (g) of this section for which the Co-Applicants request that the Siting Board elect to not apply them by finding that, as applied to the proposed Facility interconnections, such are unreasonably burdensome in view of the existing technology or the needs of, or costs to, ratepayers whether located inside or outside of such municipality. For each local procedural or substantive requirement identified, a statement justifying the request will be provided. The statement of justification will show with facts and analysis the degree of burden caused by the requirement, why the burden should not reasonably be borne by the Co-Applicants, that the request cannot reasonably be obviated by design changes to the proposed Facility, the request is the minimum necessary, and the adverse impacts of granting the request are mitigated to the maximum extent practicable. The statement shall include a demonstration:
    - (1) for requests grounded in the existing technology, that there are technological limitations (including governmentally imposed technological limitations) related to necessary Facility component bulk, height, process or materials that make compliance by the Co-Applicants technically impossible, impractical or otherwise unreasonable;
    - (2) for requests grounded in factors of costs or economics (likely involving economic modeling), that the costs to consumers associated with applying the local substantive requirement outweigh the benefits of applying such provision; and
    - (3) for requests grounded in the needs of consumers, that the needs of consumers for the Facility outweigh the impacts on the community that would result from refusal to apply the local substantive requirement.
- A summary table of all local substantive requirements required to be identified pursuant to subdivisions (d) and (g) of this section in two columns listing the provisions in the first

column and a discussion or other showing demonstrating the degree of compliance with the substantive provision in the second column.

- (j) An identification of the zoning designation or classification of all lands constituting the site of the proposed Facility and a statement of the language in the zoning ordinance or local law by which it is indicated that the proposed facility is a permitted use at the proposed site. If the language of the zoning ordinance or local law indicates that the proposed Facility is a permitted use at the proposed site subject to the grant of a special exception, a statement of the criteria in the zoning ordinance or local law by which qualification for such a special exception is to be determined.

4.32 STATE LAWS AND REGULATION - EXHIBIT 32

4.32.1 Anticipated State Approvals, Consents, Permits or Other Conditions

Hecate Albany has preliminarily identified state approvals, consents, permits, certificates, or other conditions that are anticipated to be required for the construction and operation of the proposed Facility, associated interconnections, and ancillary features through initial discussions with state agencies. These preliminary identified requirements are provided in Table 4.32-1.

Table 4.32-1 State Approvals, Consents, Permits, or Other Conditions

Permit/Consultation	Trigger	Requirements	Status/Timeframe
STATE OF NEW YORK			
New York State Department of Environmental Conservation			
SPDES General Stormwater Discharge Permit for Construction Activity GP-0-15-002	Soil disturbances greater than 1 acre	A GP-0-15-002 General Stormwater Discharge Permit for Construction Activity requires that a Notice of Intent along with a SWPPP be filed with the governing agency(ies). Permit is required if discharge occurs to Waters of the State or municipal sewer systems.	Permit issuance to be coordinated with Article 10 proceeding in accordance with Section 172 of PSL.

Permit/Consultation	Trigger	Requirements	Status/Timeframe
Section 401 of the CWA Water Quality Certification (WQC)	Discharge of dredged or fill material regulated under Section 404	The Section 401 WQC is generally limited to discharges of dredged or fill material regulated under Section 404. The Facility must be consistent with the designated use of a given water body and the water quality criteria established.	Permit issuance to be coordinated with Article 10 proceeding in accordance with Section 172 of PSL.
New York State Office of Parks, Recreation, and Historic Preservation			
Section 14.09 of the New York State Historic Preservation Act and Section 106 of the National Historic Preservation Act consultation with SHPO	Potential to directly or indirectly affect any building, structure, archeological site, object, landscape or district. This consultation is required by Article 10 regulations and if there is a federal nexus.	The SHPO provides project review to ensure that effects or impacts on eligible or listed properties are considered and avoided or mitigated during the Facility planning process. SHPO also consults with federal agencies in identifying archaeological site and historic properties and avoiding or minimizing any potential adverse effects from federally funded, licensed, or authorized projects in New York.	Initial consultation with OPRHP has occurred. Recommendations will be included within Application.

Permit/Consultation	Trigger	Requirements	Status/Timeframe
New York State Department of Agriculture and Markets (NYSDAM)			
Notice of Intent to ensure Compliance with Agricultural District Laws	All facilities located within agricultural districts.	If the project is located in or within 500 feet of an Agricultural District, an Agricultural Data Statement (Town or County Village form) is required and the neighboring landowners are to be notified of the Facility. Hecate Albany will coordinate with NYSDAM to assist in the determination of Facility impacts and to identify remedial actions to consider. Hecate Albany will follow the Notice of Intent (NOI) checklist to prepare the NOI.	Initial consultation with NYSDAM has occurred.

Hecate Albany will construct and operate the Facility in conformance with the applicable state substantive requirements for those approvals, consents, permits, certificates, or other conditions. As part of this Exhibit of the Application, substantive requirements associated with necessary state approvals, consents, permits, certificates, or other conditions will be provided in a summary table demonstrating the degree of compliance with the substantive provision.

4.32.2 Proposed Studies

Exhibit 32 of the Application will follow the requirements outlined in Subsections (a) through (e) of Section 1001.32 of the Article 10 regulations as follows.

Before preparing the exhibit required by this section, the Co-Applicants will consult with the state agencies and authorities whose requirements are the subject of the exhibit to determine whether the Co-Applicants have correctly identified all such requirements.

Exhibit 32 will contain:

- (a) A list of all state approvals, consents, permits, certificates, or other conditions for the construction or operation of the proposed major electric generating facility (including interconnection electric transmission lines and fuel gas transmission lines that are not subject to review under Article VII of the PSL) of a procedural nature. These state procedural requirements are supplanted by PSL Article 10, except for permits to be issued by the NYSDEC pursuant to federal recognition of state authority, or pursuant to federally delegated or approved authority, in accordance with the CWA, the Clean Air Act and the Resource Conservation and Recovery Act, and permits pursuant to Section 15-1503, Title 9 of Article 27, and Articles 17 and 19 of the ECL, unless the Siting Board expressly authorizes the exercise of such authority by the state agency.
- (b) A list of all state procedural requirements required to be identified pursuant to subdivision (a) of this section for which the Co-Applicants request that the Siting Board expressly authorize the exercise of such authority by the state agency, including a statement why such exercise would be desirable or appropriate.
- (c) A list of all state approvals, consents, permits, certificates, or other conditions for the construction or operation of the proposed major electric generating facility (including interconnection electric transmission lines and fuel gas transmission lines that are not subject to review under Article VII of the PSL) of a substantive nature, together with a statement that the Facility as proposed conforms to all such state substantive requirements. Pursuant to PSL §168(3)(e), the Siting Board must find that the Facility is designed to operate in compliance with these state substantive requirements, all of which will be binding upon the Co-Applicants.
- (d) A summary table of all state substantive requirements required to be identified pursuant to subdivision (c) of this section in two columns listing the provisions in the first column and a discussion or other showing demonstrating the degree of compliance with the substantive provision in the second column.
- (e) A list of all state approvals, consents, permits, certificates, or other conditions for the construction or operation of any proposed offsite interconnections and ancillary features that are not encompassed within the definition of Major Electric Generating Facility. These state actions not for the construction or operation of the proposed major electric generating facility are not supplanted by PSL Article 10 and may be state procedural requirements or state substantive requirements.

4.33 OTHER APPLICATIONS AND FILINGS - EXHIBIT 33

4.33.1 Other Applications

In addition to the permits and approvals listed in Table 4.32-1, the Facility is anticipated to require federal permits, consents approvals or licenses for construction and operation of the Facility as documented in Section 4.33.2. The Co-Applicants do not have and are not aware of any other pending applications or filings that concern the subject matter of this proceeding before the Siting Board.

4.33.2 Federal Permits and Approvals

Hecate Albany has preliminarily identified other potential applications or filings for the Facility that may be filed with the federal departments or agencies. This preliminary list is provided in Table 4.33-1. A complete list will be included in the Application.

Table 4.33-1: Potential Federal Permits, Consents, Approvals or Licenses

Permit/Consultation	Trigger	Comments	Status/Timeframe
United States Army Corps of Engineers			
Nationwide Permit and/or Individual Permit pursuant to Section 404 of the CWA	Discharges of dredged or fill materials affecting federal waters and wetlands	Requires approval prior to discharging dredged or fill material into the "Waters of the United States"; Nationwide Permit required for impacts less than 0.5 acres and an Individual Permit would be required for impacts over 0.5 acres.	Application would be filed concurrently with Article 10 Application
National Historic Preservation Act			
Section 106 Consultation	A license or permit from a federal agency	Consultation with federal and state historic preservation authorities under Section 106 of the NHPA is required for federal permitting actions. The	Initial consultation with OPRHP and the Stockbridge-Munsee Community Band of Mohican Indians

Permit/Consultation	Trigger	Comments	Status/Timeframe
		federal agency issuing permit may be obligated to consult with Native American Tribes to identify Traditional Cultural Properties within the Facility Area.	has occurred. Recommendations will be included within Application.
United States Fish and Wildlife Service			
Technical Assistance and Consultation under the ESA	Potential impacts to federally listed species and their critical habitat; Federal permit or approval (Section 404 Permit) required.	Hecate Albany will seek technical guidance from the USFWS to plan the Facility and avoid or minimize adverse effects to northern long-eared bat and Indiana bats or their habitat. The ESA also directs all federal agencies to work to conserve endangered and threatened species and to ensure that actions they fund, authorize, permit, or otherwise carry out will not jeopardize the continued existence of any listed species or adversely modify designated critical habitats.	Co-Applicants to consult with USFWS. Documentation to be included in Application.

4.33.3 Proposed Studies

Exhibit 33 of the Application will follow the requirements outlined in Subsections (a) through (b) of Section 1001.33 of the Article 10 regulations as follows.

- (a) A statement whether the Co-Applicants have pending, or know of others who have pending, with the Commission or with any other governmental department, agency or

court of competent jurisdiction (state or federal), any application or filing which concerns the subject matter of the proceeding before the Siting Board. If any such applications or filings are pending, the Co-Applicant will state, for each such application or filing, whether the granting of any such application or filing will have any effect on the grant or denial of a certificate, and whether the grant or denial of a certificate will have any effect upon the grant or denial of any such other application or filing. The Co-Applicants will notify the Secretary, Presiding Examiner and each party of any significant change in the status of each such application or filing.

- (b) The Application will identify any Federal permit, consent, approval or license that will be required for the construction or operation of the Facility. The Application will specify the date on which an application for any such approval was made or the estimated date on which it will be made. The Co-Applicants will notify the Secretary, Presiding Examiner and each party of any significant change in the status of each such application.

4.34 ELECTRIC INTERCONNECTION - EXHIBIT 34

4.34.1 Overview

Hecate Albany will provide a description of the Facility's proposed electric interconnection, including the information provided in the following sections. It is anticipated that interconnection of the Facility to the electric transmission system will be accomplished via an interconnection switchyard and short 115-kV lines connecting to the existing 115-kV line located adjacent to the Facility Area. The collection substation will transform the power up to 115 kV and deliver power to the National Grid transmission system at two POIs. Both POIs will be via an on-site substation, which will be constructed either by the Co-Applicants, meeting design specifications offered by National Grid, or by National Grid. This POI substations will connect the Facility to the National Grid transmission system.

4.34.1.1 Design Voltage and Voltage of Initial Operation

Operating voltage of the interconnection lines will be 115 kV(grid voltage), .

4.34.1.2 Type, Size, Number and Materials of Conductors

The type, size, and length (likely under 500 feet) of the interconnection lines will be described in the Application. The interconnecting lines will most likely be overhead going from the existing lines to the adjacent on site substations.

4.34.1.3 Insulator Design

Typical utility-grade ceramic or composite insulators will be used and described in the Application.

4.34.1.4 Length of the Transmission Line

The Co-Applicants are proposing to construct two short (less than 500 feet) overhead transmission lines to interconnect the Facility substations to the National Grid transmission lines at 115 kV.

4.34.1.5 Collection Line Design and Standards Specifications

Design standards and specifications of the interconnection lines and associated structures will be addressed in the Application.

4.34.1.6 Type and Design Standards of Cable System

Where underground lines are planned, it will be direct buried or in conduit. The trench may disturb an area up to approximately 6 feet wide with cables installed to a depth of 2 to 4 feet. Suitable native or engineered backfill will be used, and the disturbed areas will be returned to approximate pre-construction grades and restored.

4.34.1.7 Profile of the Underground Construction

If underground interconnection lines are planned, then the associated drawings will be provided with the Application.

4.34.1.8 Equipment to be Installed

The Facility substation and interconnection switching station drawings will be provided with the Application. The interconnection switching station is required by the local interconnecting utility and the details of the Facility will be addressed in the Application.

4.34.1.9 Terminal Facility

No terminal facility is required as part of the proposed Facility.

4.34.1.10 Need for Cathodic Protection Measures

Hecate Albany will assess, review results, and determine whether cathodic protection measures will be required as part of the Application. The Application will also include a discussion on the need for cathodic protection measures on the existing gas pipeline that traverses the Facility Area due to the operation of the Facility.

4.34.2 Proposed Studies

Exhibit 34 of the Application will follow the requirements outlined in Subsections (a) through (k) of Section 1001.34 of the Article 10 regulations, as follows.

Exhibit 34 will contain a detailed description of the proposed electric interconnection including:

(a) the design voltage and voltage of initial operation;

(b) the type, size, number and materials of conductors;

(c) the insulator design;

(d) the length of the transmission line;

(e) the typical dimensions and construction materials of the towers;

(f) the design standards for each type of tower and tower foundation;

(g) for underground construction, the type of cable system to be used and the design standards for that system;

(h) for underground construction, indicate on a profile of the line the depth of the cable and the location of any oil pumping stations and manholes;

(i) equipment to be installed in any proposed switching station or substation including an explanation of the necessity for any such switching station or substation;

(j) any terminal facility; and

(k) the need for cathodic protection measures.

4.35 ELECTRIC AND MAGNETIC FIELD - EXHIBIT 35

The two proposed POIs will be located within the Facility Area and, therefore, will not require an off-site ROW. However, the Application will identify 115 kV interconnection route segments with unique EMF characteristics along the proposed interconnection routes, which will be evaluated in the EMF study. The Co-Applicants propose to measure EMF levels at the Facility Area property boundaries.

4.35.1 Overview

Compliance with the NYPSC's "Interim Policy on Magnetic Fields of Major Electric Transmission Facilities," issued on September 11, 1990 (NYPSC Policy, Exhibit I), will be discussed in the Application.

Potential impacts of the proposed interconnection route segments on radio and TV reception interference will be evaluated in the Application. The proposed segments will be designed in accordance with applicable regulations and in a way, as much as practical, to reduce the proposed interconnection route segments EMF strength and any reception interference. Complaint resolution procedures and potential mitigation measures will also be discussed in the Application

4.35.2 Proposed EMF Study

The strength and location of EMFs will be modeled on representative areas of the interconnections route segments. Modeling calculations will identify existing EMFs and future EMFs that would result from construction and operation of the Facility at the Facility property lines. For the purposes of calculations, the interconnection route segment is assumed to be 30 feet wide (subject to confirmation during design) for all of the segments. The Application will identify the name and calculation number of each segment.

For each of the unique segments, the EMF study will provide both base case (where existing facilities are present) and proposed cross sections that will show, to scale, the following features:

- any known overhead electric transmission, sub-transmission, and distribution facilities showing structural details and dimensions and identifying phase spacing, phasing, and any other characteristics affecting EMF emissions;
- any known underground electric transmission, sub-transmission, and distribution facilities;
- Facility Area boundaries as they relate to the interconnection route; and
- structural details and dimensions for all structures (dimensions, phase spacing, phasing, and similar categories) and an overview map depicting the Station number identifying the location.

The EMF study will also include a set of aerial photos/drawings showing the exact location of each unique interconnection route segment and each cross-section, and any residences or occupied buildings below or immediately adjacent to the segments (though none are anticipated). If no residence or occupied building is below or immediately adjacent to the interconnection route segments, the measurement of the distance between the interconnection route segment and the nearest residence or occupied building will be provided.

The Co-Applicants will also provide a study which evaluates potential induced voltages on Facility components (i.e., perimeter fencing; solar array structures) located in proximity to existing and proposed high-voltage electric transmission facility.

4.35.3 Proposed Studies

Exhibit 35 of the Application will follow the requirements outlined in Subsections (a) through (d) of Section 1001.35 of the Article 10 regulations, as follows.

The EMF study will include proposed (including the 115-kV interconnection route segments) and base (without the 115-kV interconnection route segments) case scenarios as defined in Exhibit 35 of Article 10. The EMF study will be performed by a licensed Professional Engineer and the computer software program used to model the facilities and make the calculations will be described in the Application. Each segment will be studied individually in the following manner:

Study One: Exhibit 35(d)(3)

Study one will be performed in accordance with Exhibit 35(d)(3) for the proposed and base case scenarios for every interconnection route segment.

Study Two: Exhibit 35(d)(4)

There are various loading requirements of study two including summer normal, summer short-term emergency, winter normal, and winter short-term emergency situations need to be modeled individually. Notwithstanding the loading models of Exhibit 35(d)(4), Hecate Albany is proposing that modeling the Facility at the highest possible generation output will be sufficient for this study. Since the maximum output of the solar energy facility is fixed at the nameplate capacity and since no other transmission will be on the proposed interconnection route segments, modeling the line at the highest possible generation output will capture the highest realistic EMF levels and be sufficient for this study. Hecate Albany proposes to model only one situation (highest possible generation output) for this study for both the proposed and base case scenarios. The remaining portions of the study would be conducted in conformance with all other aspects of Exhibit 35(d)(4).

Study Three: Exhibit 35(d)(5)

Hecate Albany does not have plans to expand or to place another facility on the proposed interconnection route segments. In addition, the generation from this Facility will be the only power transmitted on the segments. Therefore, the average annual load occurring on the proposed interconnection route segments within ten years after it is placed into service will be less than the maximum load studied in Exhibit 35(d)(3). Consequently, Hecate Albany is proposing to not perform this study.

Study Four: Exhibit 35(d)(6)

Study Four will be performed for all segments with existing facilities that parallel the proposed interconnection route segments. These studies will be accordance with Exhibit 35(d)(6). Any segments without existing facilities will have no magnetic field in the proposed interconnection route segment (assumed to be 30 feet wide) – in such cases, no study would be performed as the results would not be informative.

4.35.4 Proposed Avoidance, Minimization and Mitigation Measures

Conductors will be arranged using industry best practices and will comply with NYPSC guidelines. Hecate Albany's interconnection design will conform to applicable NYPSC guidelines and therefore there will be no unavoidable impacts.

4.36 GAS INTERCONNECTION - EXHIBIT 36

This Exhibit is not applicable to the proposed Facility as no natural gas interconnection is required.

4.37 BACK-UP FUEL - EXHIBIT 37

This Exhibit is not applicable to the proposed Facility does not utilize fuel.

4.38 WATER INTERCONNECTION - EXHIBIT 38

This Exhibit is not applicable to the proposed Facility as the Facility will not use any water for operation; therefore, no water interconnection is required.

4.39 WASTEWATER INTERCONNECTION - EXHIBIT 39

This Exhibit is not applicable to the proposed Facility as no wastewater will be generated as a result of its operation.

4.40 TELECOMMUNICATIONS INTERCONNECTION - EXHIBIT 40

4.40.1 Overview

It is not anticipated that the Facility will require telecommunications interconnections as defined by 16 NYCRR § 1000.2. It is likely that data will be transmitted to National Grid and others using existing telecommunications facilities as the area is generally served by existing cellular and broadband services. However, the Co-Applicants will conduct a review of existing communications facilities to determine whether new facilities will be required to meet off-site

communication needs prior to submitting the Application. If any additional facilities are identified, a description of such facilities will be contained in this Exhibit.

4.40.1.1 Operational Data Transmitted to NYISO

It is anticipated that the Facility's operational generating data will be transmitted to NYISO/National Grid through an underground conduit or duct from the collection substation into the POI, and will include generation data (MW output, mega volt ampere reactive [MVAR], and any curtailment) and environmental data. The Application will provide additional information on the Facility's meter location, the means of providing the operational data to National Grid, and the secure communications network for these operational data.

4.40.1.2 Facility Operations Communications Methods

The Application will provide information regarding a high-speed internet (cellular, cable, fiber, or other provider) to be established, and the means of transmitting the necessary data and other information to the appropriate parties for monitoring and reporting purposes.

4.40.1.3 Status of Negotiations

Negotiations regarding communications interconnection have not yet been initiated for the Facility because at this time, the need for these agreements has not been identified. Although not anticipated, any changes in status will be discussed in the Application.

4.40.2 Proposed Studies

Exhibit 40 of the Application will follow the requirements outlined in Subsections (a) through (c) of Section 1001.40 of the Article 10 regulations, as follows.

Exhibit 40 will contain:

(a) A detailed description of the proposed telecommunications interconnection, including all interconnecting facilities, line route, design details, size, functions, and operating characteristics.

(b) An analysis demonstrating that there will be sufficient capacity to support the requirements of the facility.

(c) A description of the status of negotiations, or a copy of agreements that have been executed, with companies or individuals for providing the communications interconnection including any restrictions or conditions of approval placed on the facility imposed by the provider, and a description of how the interconnection and any necessary system upgrades will be installed, owned, maintained and funded.

4.41 APPLICATIONS TO MODIFY OR BUILD ADJACENT

This Exhibit is not applicable to the proposed Facility.

5.0 SUMMARY AND CONCLUSIONS

This PSS has been prepared for the Facility, a 40 MW PV solar energy generation facility in the Town of Coeymans, Albany County, New York. The Facility, proposed within a general single area between NYS Route 9W and County Route 101 totaling approximately 428 acres, will consist of solar arrays, inverters, cable collection system, substation, internal infrastructure (i.e. access roads and fencing), and temporary laydown areas. This document has been prepared to facilitate an understanding of the proposed Facility, continue to solicit input from the public and other stakeholders, and to comply with 1000.5(l) of the Article 10 regulations requirements for a PSS.

Section 4.0 of this PSS has been organized in accordance with 16 NYCRR Part 1001 (Content of an Application). All subsections of Section 4.0 follow the 41 Exhibits outlined in the subsections of 16 NYCRR Part 1001. As noted within each exhibit, numerous studies are to be performed and included within the Application in order to provide a thorough environmental assessment of the Facility. These studies include:

- Electric SIS
- Invasive Species Prevention Plan
- Electric System Production Modeling
- Alternatives Analysis
- Preliminary QA/QC Plan
- Property Boundary Survey
- ERP
- Complaint Resolution Plan
- Noise Impact Assessment
- Decommissioning Plan
- Phase IB Archaeological Survey
- Historic Resources Survey
- Preliminary Geotechnical Investigation
- Plant Community and Wildlife Habitat Characterization
- Breeding Bird and Winter Raptor Surveys
- Wetland and Stream Delineation
- Preliminary SWPPP
- VIA
- Traffic and Transportation Study

- EMF Study

The Co-Applicants have prepared a matrix to demonstrate the compliance of this PSS with the requirements of 1000.5(l), which is provided in Table 5-1.

Table 5-1: Compliance of this PSS with the Requirements of 1000.5(l) of the Article 10 Regulations

PSL 1000.5(l) Section	Requirement	Corresponding Section of this PSS	Notes
PSL 1000.5(l)(1)	As much information as is reasonably available concerning the proposed facility, generally in the form (though in less detail) that it will appear in the application.	Sections 1 and 2	Sections 1 and 2 provide a project description and brief description of potential impacts.
PSL 1000.5(l)(2)	A preliminary scope of an environmental impact analysis containing a brief discussion, on the basis of reasonably available information of the following items listed below:	Sections 3 and 4	Section 3 includes general information about the environmental setting of the Facility Area. The detailed subsections of Section 4 (as described below) provide the preliminary scope of an environmental impact analysis based on currently available information.
PSL 1000.5(l)(2)(i)	A brief description of the proposed facility and its environmental setting;	Sections 2 and 3	Sections 2 provides a project description. Section 3 includes general information about the environmental setting of the Facility Area and Study Area.
PSL 1000.5(l)(2)(ii)	Potentially significant adverse environmental and health impacts resulting from the construction and operation of the proposed facility including also an identification of	Section 4	Section 4 identifies the potential impacts associated with each of the 41 exhibits (as applicable) regarding the environment and health.

PSL 1000.5(l) Section	Requirement	Corresponding Section of this PSS	Notes
	particular aspects of the environmental setting that may be affected, including any material impacts or effects identified in consultations by the public, affected agencies, and other stakeholders, and a responsive analysis by the Applicant as to those issues identified in consultations;		
PSL 1000.5(l)(2)(iii)	The extent and quality of information needed for the application to adequately address and evaluate each potentially significant adverse environmental and health impact, including existing and new information where required, and the methodologies and procedures for obtaining the new information;	Section 4	Section 4, and all associated subsections, identify the extent and quality of information anticipated to be included in the Application, including numerous stand-alone support studies. Section 5 provides a summary project-specific studies to be conducted.
PSL 1000.5(l)(2)(iv)	for proposed wind-powered facilities, proposed or ongoing studies during pre-construction activities and a proposed period of post- construction operations monitoring for potential impacts to avian and bat species;	Not applicable	The project does not consist of a wind-powered facility.

PSL 1000.5(l) Section	Requirement	Corresponding Section of this PSS	Notes
PSL 1000.5(l)(2)(v)	A description of how the applicant proposes to avoid adverse impacts to the environment and health;	Section 4	Section 4, and all associated subsections, identify the proposed avoidance or mitigation measures to the environment and health that are anticipated to be included in the Application.
PSL 1000.5(l)(2)(vi)	For those adverse environmental and health impacts that cannot be reasonably avoided, an identification of measures proposed to mitigate such impacts;	Section 4	Please see above.
PSL 1000.5(l)(2)(vii)	Where it is proposed to use petroleum or other back-up fuel for generating electricity, a discussion and/or study of the sufficiency of the proposed on-site fuel storage capacity and supply;	Not applicable	No petroleum or other back-up fuel is proposed.
PSL 1000.5(l)(2)(viii)	A description and evaluation of reasonable and available alternative locations for the proposed facility, including a description of the comparative advantages and disadvantages of the proposed and alternative locations, except that a private	Section 4.9	Section 4.9 presents a discussion of Alternatives to the proposed Facility and the selection process that has resulted in the selection of current Facility Area.

PSL 1000.5(l) Section	Requirement	Corresponding Section of this PSS	Notes
	facility applicant may limit its description and evaluation of alternative locations to parcels owned by, or under option to, such private facility applicant or its affiliates;		
PSL 1000.5 (l)(2)(ix)	If the proposed facility affects any land or water use or natural resource of the coastal area and federal authorization or funding is necessary, a preliminary analysis of the consistency of the proposed facility with the enforceable policies of the New York State coastal management program or, where the action is in an approved local waterfront revitalization program area, with the local program;	Not applicable	Facility Area is not located within a coastal zone.
PSL 1000.5 (l)(2)(x)	A statement of the reasons why the primary proposed location and source, taking into account the potentially significant and adverse environmental impacts, is best suited, among the alternatives, including a	Section 4.9	Section 4.9 presents a discussion of Reasonable and Available Alternatives to the proposed Facility, including a “no action” alternative, and a statement indicating why the proposed location is

PSL 1000.5(l) Section	Requirement	Corresponding Section of this PSS	Notes
	"no action" alternative, to promote public health and welfare, including the recreational and other concurrent uses that the site may serve, except that a private facility applicant may limit its description and evaluation of alternative locations to parcels owned by, or under option to, such private facility applicant or its affiliates and its description and evaluation of alternative sources to those that are reasonable alternatives to the proposed facility that are feasible considering the objectives and capabilities of the sponsor;		best suited, among alternatives, to promote public health and welfare, including the recreational and other concurrent uses that the Facility Area may serve.
PSL 1000.5 (l)(2)(xi)	A preliminary identification of the demographic, economic and physical attributes of the community in which the facility is proposed to be located and in which any alternative location identified is located, and a preliminary environmental justice evaluation of significant and adverse	Sections 3.11 and 4.28	Section 3.11 provides demographic information for the towns of Coeymans and Bethlehem and the Village of Ravena. Section 3 overall provides information on the economic and physical attributes of the community. Section 4.28 addresses Environmental Justice, including

PSL 1000.5(l) Section	Requirement	Corresponding Section of this PSS	Notes
	disproportionate environmental impacts of the proposed facility and any alternative facility identified that would result from construction and operation considering, among other things, the cumulative impact of existing sources of emissions of air pollutants and the projected emission of air pollutants from the proposed or alternative facility in a manner that is in accordance with any requirements for the contents of an Article 10 preliminary scoping statement contained in 6 NYCRR Part 487 promulgated by the NYSDEC for the analysis of environmental justice issues; and		identification of the nearest Potential Environmental Justice Areas.
PSL 1000.5 (l)(2)(xii)	An identification of any other material issues raised by the public and affected agencies during any consultation and the response of the applicant to those issues.	Section 4	Section 4, and all associated subsections, identify material issues raised by the public and affected agencies to date, where applicable. Specifically, section 4.2 provides a summary of the public involvement process. In addition,

PSL 1000.5(l) Section	Requirement	Corresponding Section of this PSS	Notes
			Appendix A of the PSS includes the most recently filed Meeting Log, which outlines all consultation activities conducted by the Co-Applicants since January 2017.
PSL 1000.5 (l)(3)	An identification of all other state and federal permits, certifications, or other authorizations needed for construction, operation or maintenance of the proposed facility;	Sections 4.32 and 4.33	Sections 4.32 and 4.33 address anticipated state and federal permits and approvals, respectively, that may be required for the proposed Facility.
PSL 1000.5 (l)(4)	A list and description of all state laws and regulations issued thereunder applicable to the construction, operation or maintenance of the proposed facility and a preliminary statement demonstrating an ability to comply;	Section 4.32	Section 4.32 addresses state laws and regulations.
PSL 1000.5(l)(5)	A list and description of all local laws, and regulations issued thereunder, applicable to the construction, operation, or maintenance of the proposed facility and a statement either providing a preliminary assessment of an ability to comply or indicating specific	Section 4.31	Section 4.31 addresses local laws and regulations.

PSL 1000.5(l) Section	Requirement	Corresponding Section of this PSS	Notes
	provisions that the applicant will be requesting the Board to elect not to apply, in whole or in part, and a preliminary explanation as to why the Board should elect not to apply the specific provisions as unreasonably burdensome in view of the existing technology or the needs of or costs to ratepayers whether located inside or outside of such municipality;		
PSL 1000.5 (l)(6)	A description of the applicant, its formation, status, structure, holdings, affiliate relationships, powers (including whether it has or will seek to obtain the power of eminent domain, either directly or indirectly), franchises and consents;	Section 2.1	Section 2.1 describes the applicant, including the type of business and its formation. The Co-Applicants do not plan to seek to obtain the power of eminent domain.
PSL 1000.5 (l)(7)	A description of the applicant's property rights and interests or those it proposes to acquire to all lands of the proposed facility and any private or public lands or private or public streets, highways or ROWs crossed	Section 2.2	Section 2.2 provides information regarding the Co-Applicant’s property rights and interests.

PSL 1000.5(l) Section	Requirement	Corresponding Section of this PSS	Notes
	by any interconnections necessary to serve the facility such as, but not limited to, electric lines, gas lines, water supply lines, waste water or other sewage treatment facilities, communications and relay facilities, access roads, rail facilities, or steam lines; and		
PSL 1000.5 (l)(8)	Any other information that the Applicant may deem to be relevant.	Not applicable	

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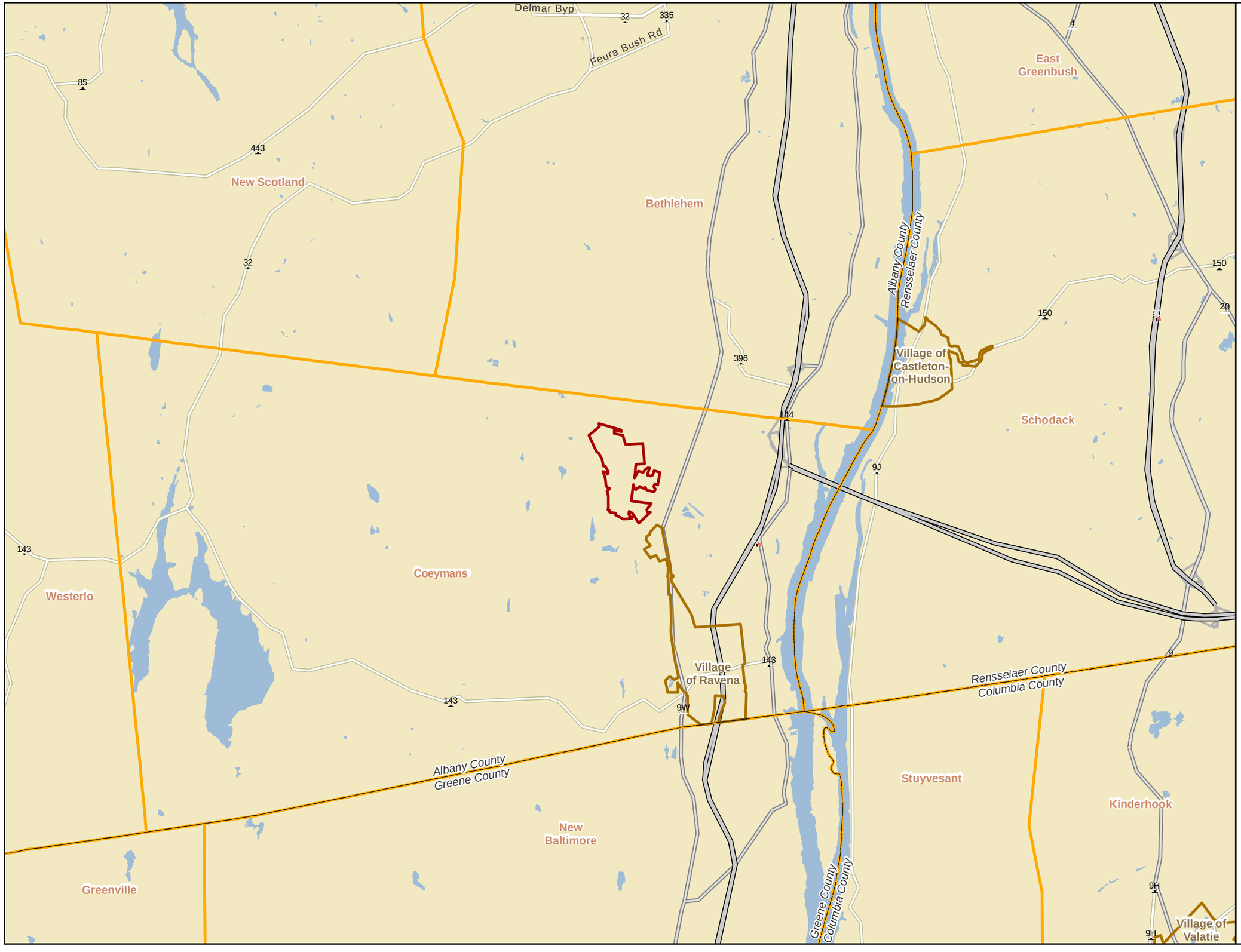
FIGURES

Figure 1
Facility Location

Coeymans Solar Farm
Albany County, New York



Facility Area
County Boundary
City/Town Boundary
Village Boundary

0 1 2
Miles

Source: ESRI, USGS

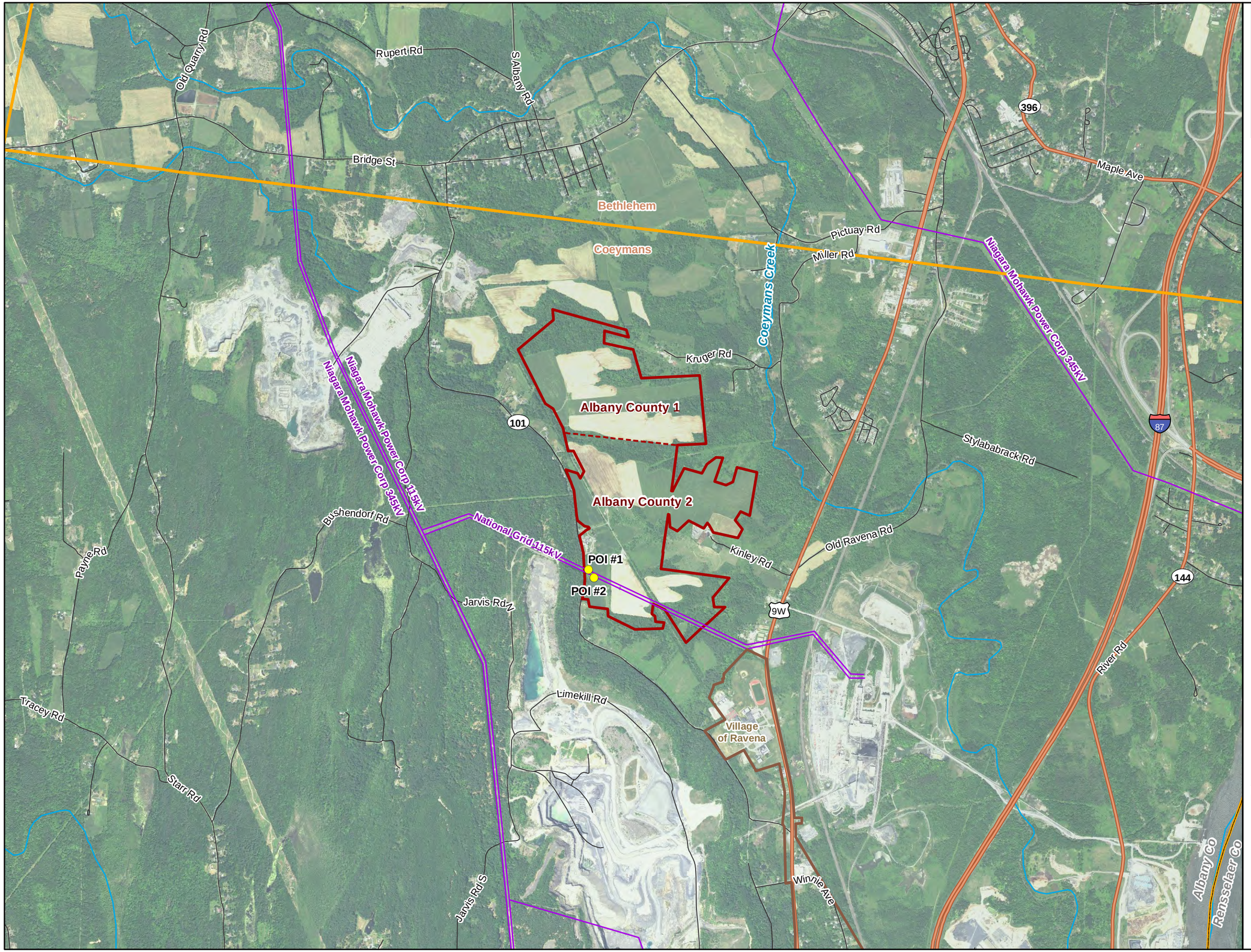


Figure 2
Facility Area

Coeymans Solar Farm
Albany County, New York

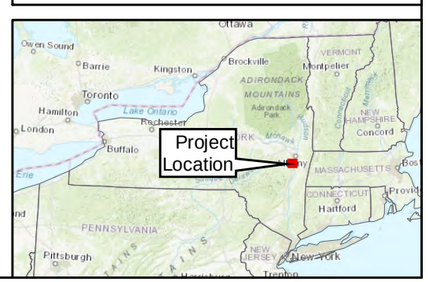
- Facility Area
- Point of Interconnection (POI)
- County Boundary
- City/Town Boundary
- Village Boundary
- Major Road
- Local Road
- Waterway
- Existing Transmission Line

Note: Preliminary and subject to refinement

N

0 2,000 4,000
Feet

Source: ESRI, USDA NAIP, Ventyx



PROJECT DATA:

CAPACITY (AC):	12 MW
PV MODULES	
VFR:	
MODEL:	JINKO SOLAR OR SIM LAR JKM345/350/355M OR SIMILAR
NAMEPLATE:	300-315Wp OR SIMILAR
INVERTERS:	
VFR:	TMEIC CORP. OR SIMILAR
MODEL:	PV-L2700GR OR SIMILAR
NAMEPLATE:	2.5MW/2.7MVA OR 2.9 MVA
QUANTITY:	4+
ARRAY:	
VFR:	TBD
TYPE:	SINGLE AXIS
TILT:	0°
ORIENTATION:	E-W +/-60°

LEGEND:

- PROPERTY BOUNDARY
- PV PLANT FENCE
- PUBLIC ROADS
- OVERHEAD ELECTRIC LINE
- RAILROAD
- EXISTING GAS LINE
- BIO SWALE/DITCHES
- SETBACKS
- WETLANDS
- POTENTIAL BAT HABITAT
- PROJECT ROADS

VICINITY MAP
SCALE: 1" = 6080'

N

Figure 3
Preliminary Layout

Coeymans Solar Farm
Albany County, New York

REV	DATE	DESCRIPTION	DWN	CHKD
A	15FEB18	PRELIMINARY FOR PRESENTATION	JPD	JAB

RINA

Hecate Energy

SCALE: 1" = 400'

SHEET P100

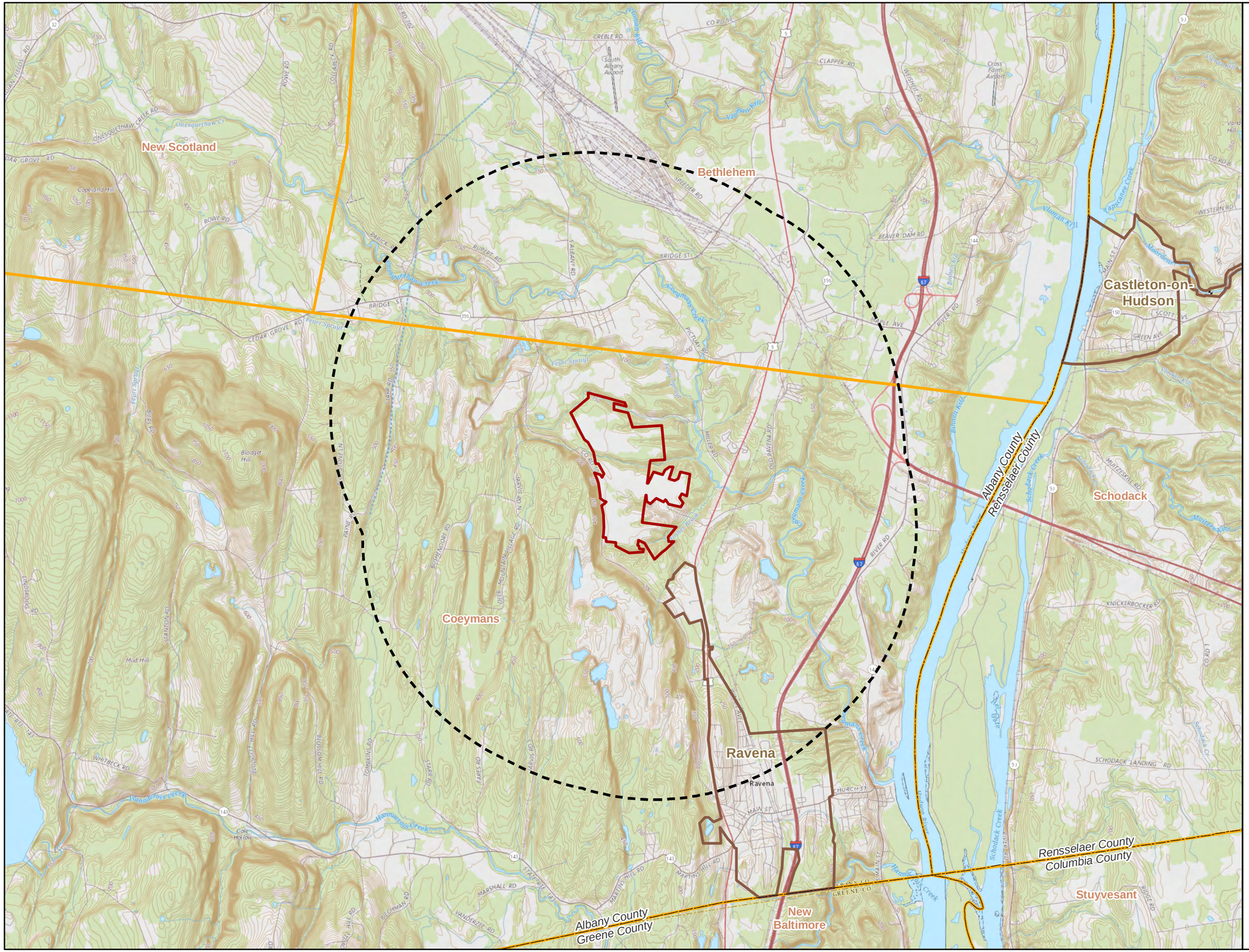


Figure 4
Study Area

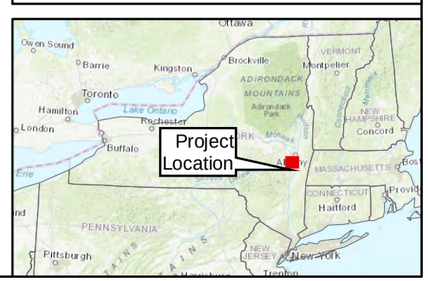
Coeymans Solar Farm
Albany County, New York

- Facility Area
- 2-mile Study Area
- County Boundary
- City/Town Boundary
- Village Boundary

N

0 0.5 1
Miles

Source: ESRI, USGS



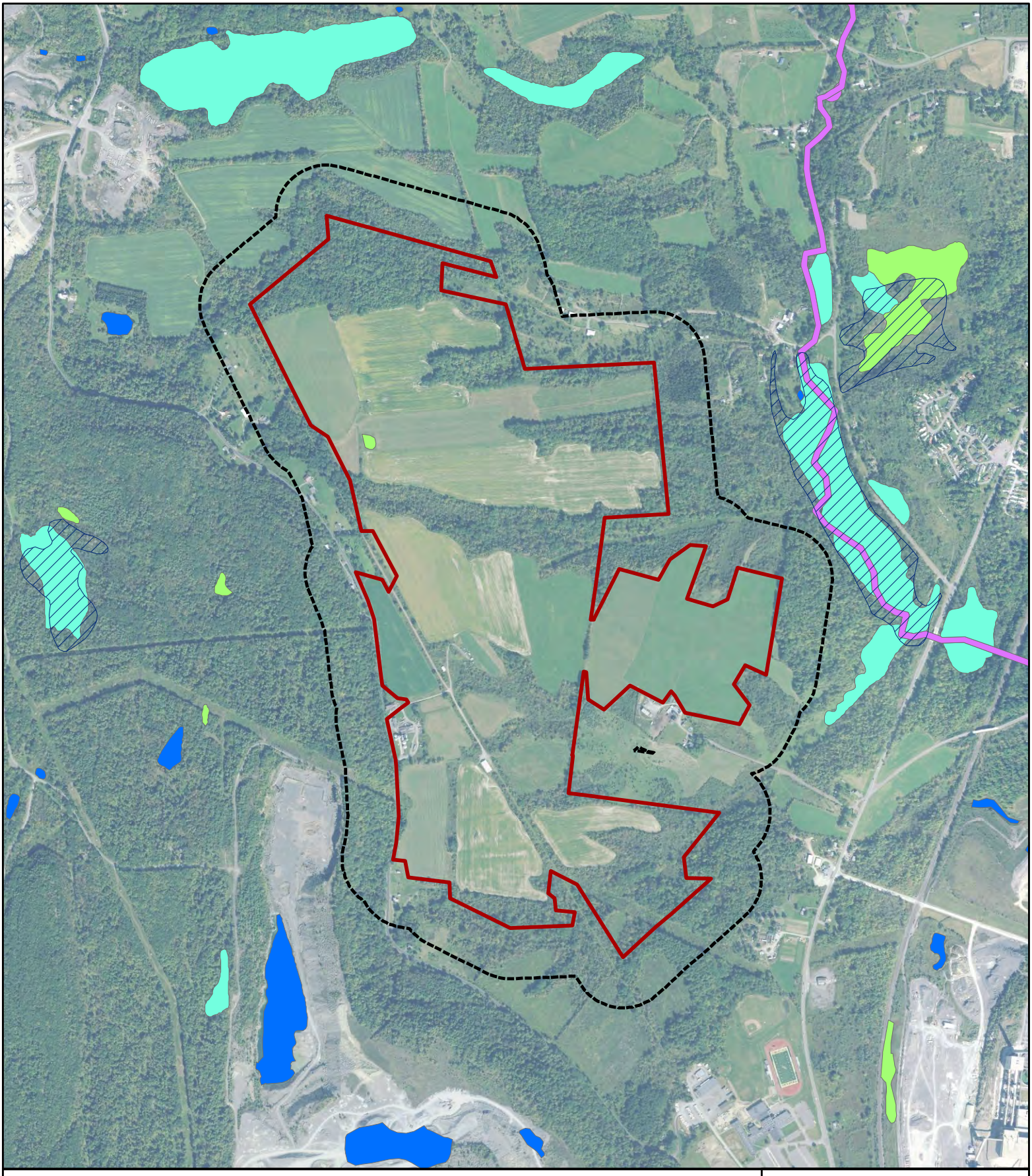
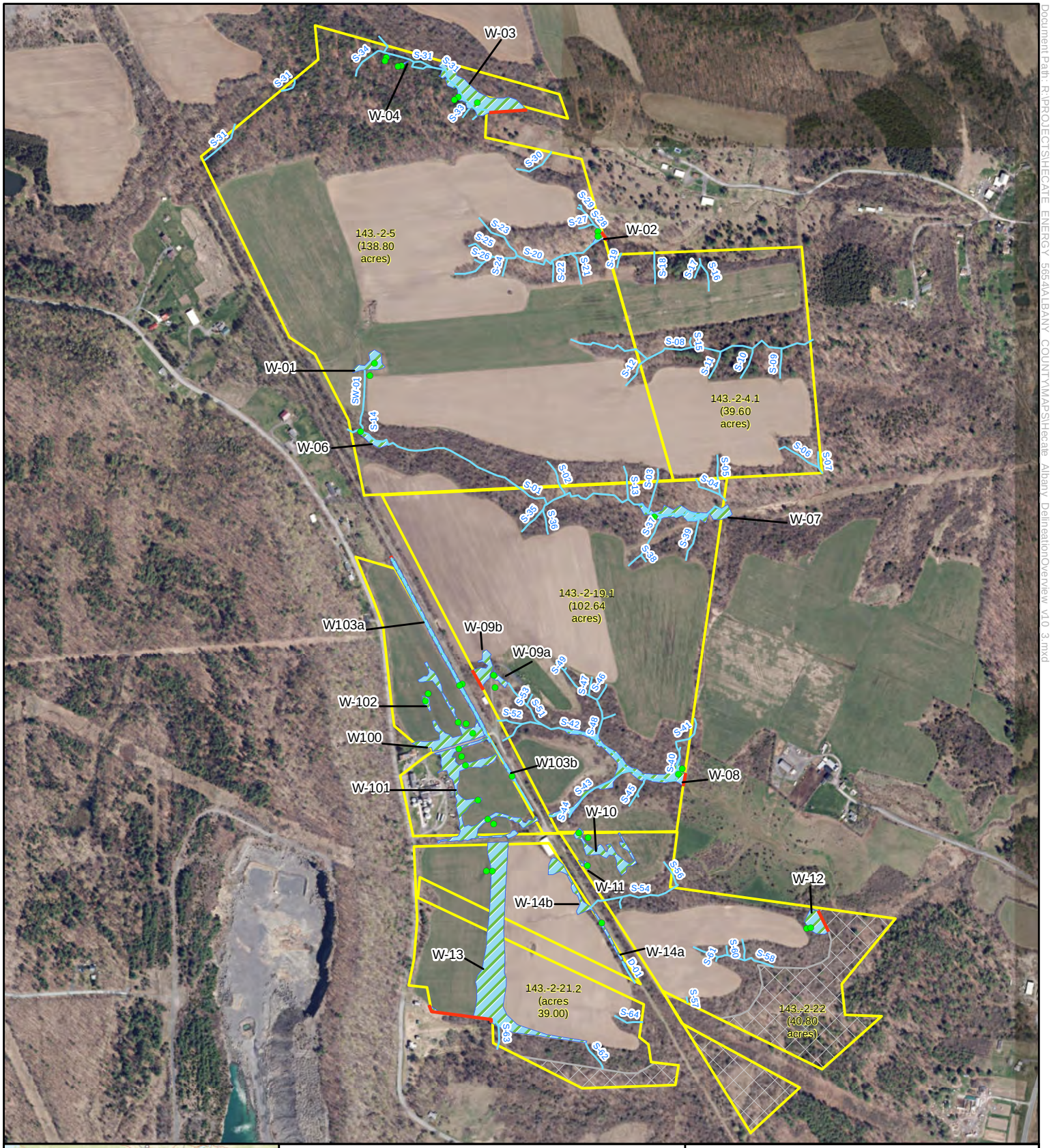


Figure 5
NWI Wetlands

Coeymans Solar Farm
Albany County, New York



Legend

- Sample Station Locations
- Delineated Streams
- Wetland Continuation
- Facility Site
- Delineated Wetlands
- Area Not Surveyed

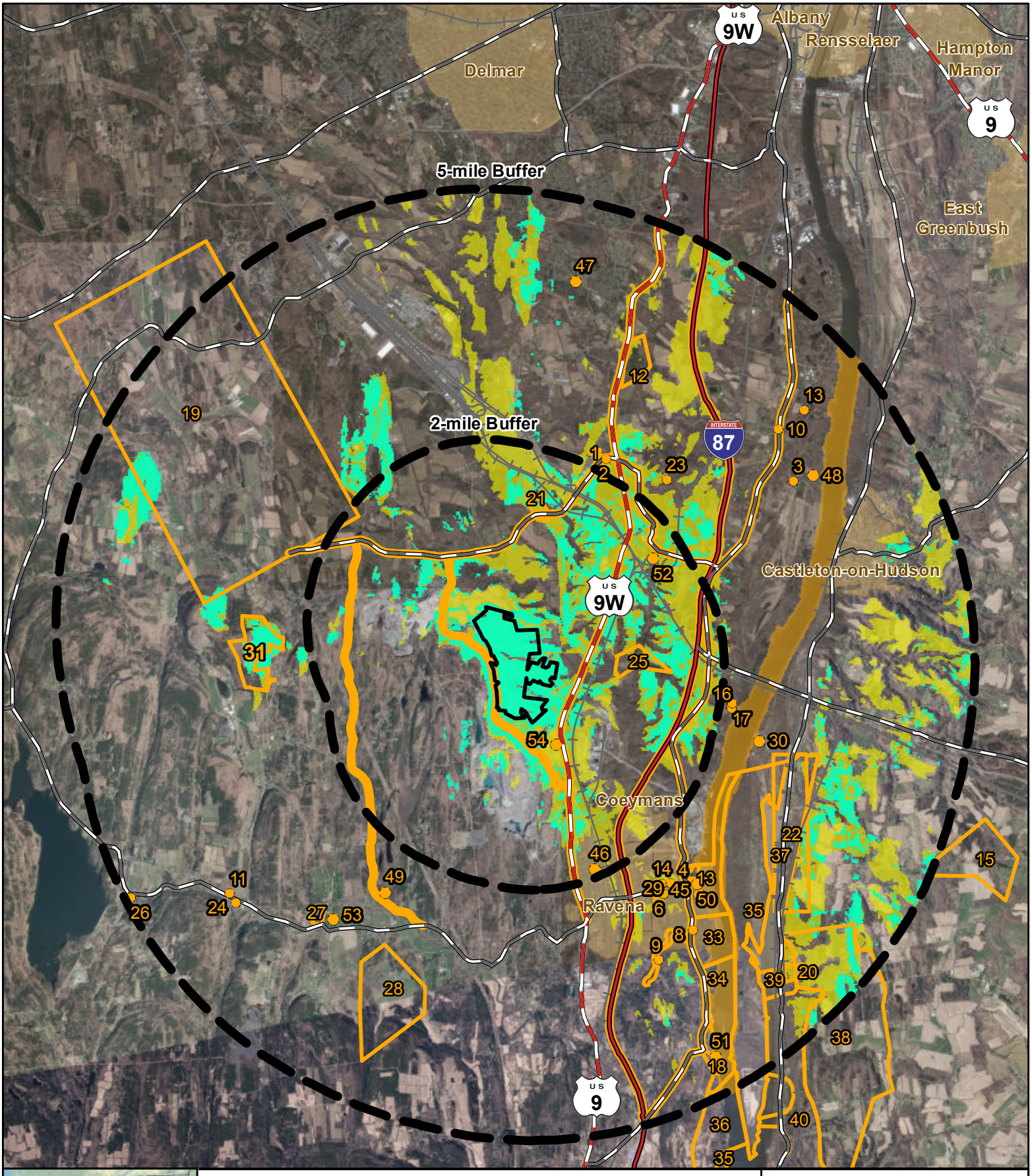
0 250 500 1,000 1,500 Feet

Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

TETRA TECH

Figure 6
Delineated Wetlands and Streams

Coeymans Solar Farm
Albany County, New York



Legend

Facility Area

Area with Potential Visibility

Analysis based on topography only

Analysis based on topography and forested land cover

-Decidious forest tree heights estimated to be 61.5'
-Coniferous forest tree heights estimated to be 52.5'

Visual Resource Inventory

Visual Resource Site

Visual Resource Area

N

0 0.5 1 mile

Figure 7
Viewshed Map

Coeymans Solar Farm
Albany County, New York

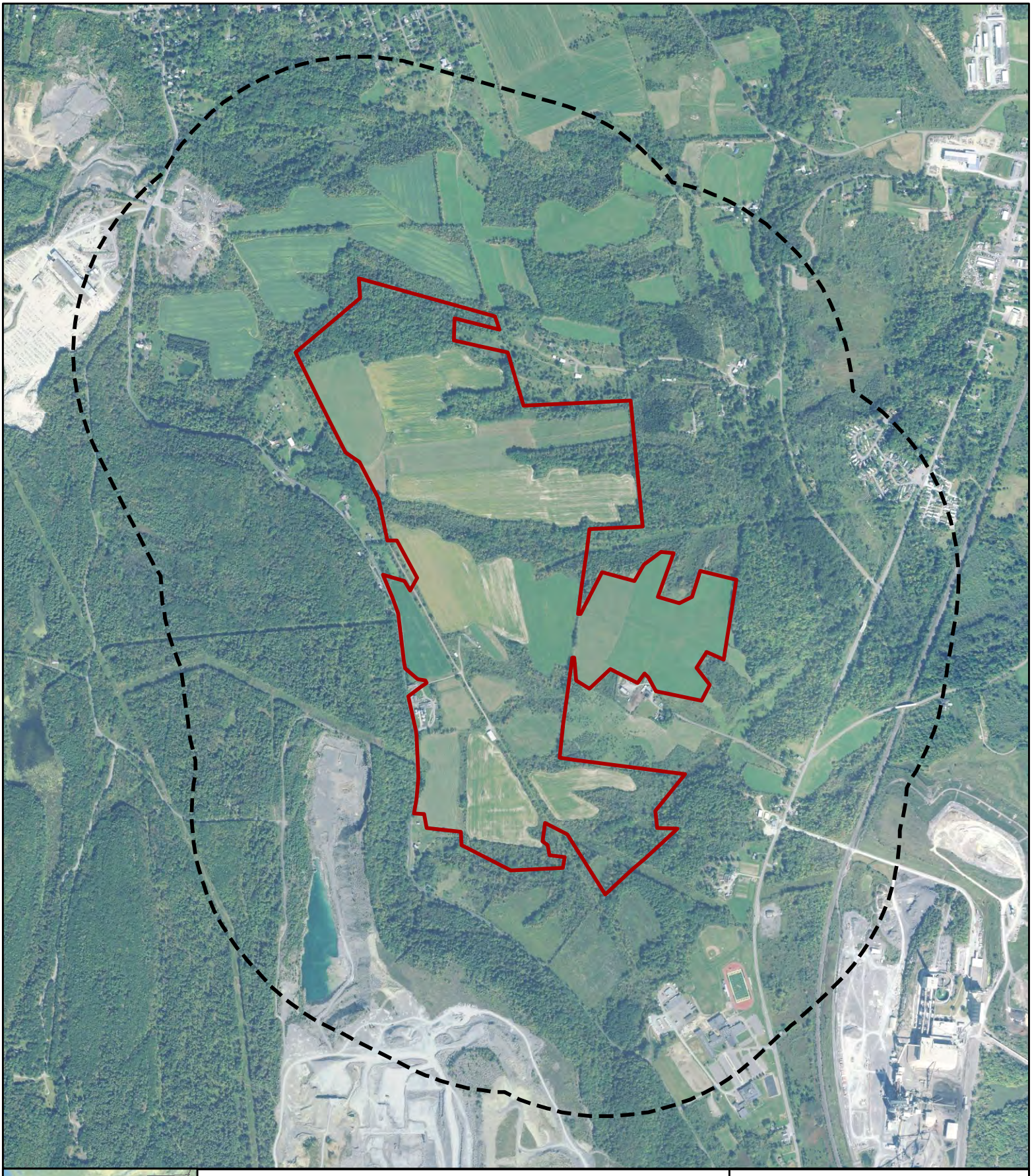


Figure 8
Environmental Justice Impact Study Area

Coeymans Solar Farm
Albany County, New York

APPENDIX A – MEETING LOG

Meeting Log (as of April 10, 2018)

Coeymans Solar Farm

Stakeholder	Date	Location	Attendees	Purpose	Follow-Up Action Items	Comments
Town of Coeymans	01/18/17	Town of Coeymans Office, 18 Russell Avenue, Ravena, NY 12143	Philip Crandall, Coeymans Supervisor Thomas Dolan, Coeymans Councilman John Cashin, Coeymans Building Inspector/Code Enforcement Officer Gabriel Wapner, Hecate Energy	Hecate met with town officials to introduce the project and discuss the permitting and PILOT processes.	Schedule follow-up meeting at appropriate time.	
New York State Division for Historic Preservation	08/30/17	New York State Division for Historic Preservation Peebles Island State Park Waterford, NY 12188-0189	Nancy Herter, New York State Division for Historic Preservation Philip Perazio, New York State Division for Historic Preservation Bonney Hartley, Stockbridge-Munsee Band of Mohicans Philip Mooney, Hecate Energy Gabriel Wapner, Hecate Energy Rob Peltier, TetraTech Fred Sellars, TetraTech	Hecate introduced the project scope to the representatives of New York State Division for Historic Preservation and the Stockbridge-Munsee Band of Mohicans	Conduct archaeology surveys on the project site	
Town of Bethlehem	01/23/18	Call	Robin Nagengast, Administrative Assistant Gabriel Wapner, Hecate Energy	Requested a meeting with the Supervisor	In process	
Town of Bethlehem	01/25/18	Call	Robin Nagengast, Administrative Assistant Gabriel Wapner, Hecate Energy	Robin called to inform Gabriel that the Supervisor was not available to meet this day. It was agreed Gabriel would call back to arrange a meeting in the future.	Hecate to arrange a meeting	
Town of Coeymans	01/26/18	Town of Coeymans Office, 18 Russell Avenue, Ravena, NY 12143	Philip Crandall, Coeymans Supervisor Thomas Dolan, Coeymans Councilman John Cashin, Coeymans Building Inspector/Code Enforcement Officer John Kerr, Chief Sewer Plant Operator Gabriel Wapner, Hecate Energy Philip Mooney, Hecate Energy	Discuss with the town leadership the Article 10 Process and their ability to participate in it.	Hecate to: - Hold public meeting in February -Consider feasibility to provide local access to the energy generated -Assess visual impact on nearby residents -Research about solar potential effects on property values	-Town inquired if energy can be made available for sale to local residents -Town noted potential visual impact and agriculture displacement concerns -Integrating sheep grazing and bee keeping into the project was discussed to offset agriculture displacement

Stakeholder	Date	Location	Attendees	Purpose	Follow-Up Action Items	Comments
Albany County Executive Office	02/15/18	Call	Matt Cannon, Albany County Executive's Office Gabe Wapner, Hecate Energy	Arrange meeting for 2/21/2018	Meet 2/21/2018	
Albany County Executive Office	02/15/18	Call	Matt Cannon, Albany County Executive's Office Gabe Wapner, Hecate Energy	Matt Cannon requested the project's name be changed from Albany County Solar. His office's sentiment is the name will lead the public to believe that Albany County is sponsoring the project.	Interim Solution: Remove "County" from website text and 2/20/2018 Open House posters.	
Albany County Executive Office	02/16/18	Voicemail	Gabe Wapner, Hecate Energy	Gabe left a voicemail for Matt informing him of the removal of "County" and requesting dialogue on further steps.		
Lynn Gubnitksy	02/18/18	Email	Lynn Gubnitksy, Local Resident Jared Wren, Hecate Energy	Concerns regarding map functionality on the project website	Improve and update mapping feature on project site	Hecate responded accordingly.
Local Residents	02/21/18	18 Russell Ave Ravena, NY 12143	Philip Mooney, Hecate Energy Gabe Wapner, Hecate Energy Jared Wren, Hecate Energy Fred Sellars, Tetra Tech Joseph Fischl, Tetra Tech Jenny Potrikus, Tetra Tech Sam Laniado, Read and Laniado Tyler Wolcott, Read and Laniado 16 Local Residents, Sign-in Sheet Attached	Open house meeting to introduce the project to local residents, answer their questions and receive their feedback	Specific resource concerns noted by the public will be addressed in the PSS and the Article 10 Application. Hecate will investigate the website access. Hecate encouraged the public to provide input throughout the entire Application process. Visit homes of local residents who can see the project and superimpose panels to provide a sense of how the project will look	Support: -Excitement to host one of the largest solar project in NY Questions: -Benefits to the town? -Where does the energy go? Concerns raised: -Wildlife -Viewshed impacts -Local benefits -Property values -Traffic -Access to property for recreational use -Project website issues
Albany County Executive Office	02/22/18	112 State St Albany, NY 12207	Matthew Cannon, Albany County Lucas Rogers, Albany County Philip Mooney, Hecate Energy Gabe Wapner, Hecate Energy Jared Wren, Hecate Energy	Discuss with the Albany County leadership the Article 10 Process and their ability to participate in it. Introduce Hecate and the project		
NYSERDA	02/27/18	Call	Brad Tito, Program Manager, Communities & Local Governments Gabe Wapner, Hecate Energy	Discuss the possibility of community choice aggregation for the project		

Stakeholder	Date	Location	Attendees	Purpose	Follow-Up Action Items	Comments
Glenmont Job Corps Center	02/28/18	Call	Ann-Marie Morin, Business and Community Liaison Gabe Wapner, Hecate Energy	Call to introduce Hecate's projects understand how they may support the Job Corps Center's solar training initiative	Hecate to attend a Job Corps Center open house	
Flying Knights	03/09/18	Email	Cedar Shade Farm	Inform Flying Knights that their use of the site will need to cease after September 9, 2019		
Center for Economic Growth (CEG)	03/12/18	Email	Peter Lion, Program Manager, Energy & Sustainability – Business Growth Solutions Manufacturing Extension Partnership – Capital Region Gabe Wapner, Hecate Energy	Email to offer collaboration and support on CEG's initiatives		
NYSDEC and Ag and Markets	03/14/18	625 Broadway, Albany, NY 12233-1750	Kristy Primeau, New York State Department of Environmental Conservation (NYSDEC) Michael Clark, NYSDEC Paul Novak, NYSDEC Brianna Denoncour, NYSDEC Georgette Walters, NYSDEC Jenny Murtaugh, NYSDEC Chris Hogan, NYSDEC Steve Allinger, NYSDEC Tara Wells, New York State Department of Agriculture and Markets Jeremy Rosenthal, New York State Department of Public Service (NYSDPS) Andrew Davis, NYSDPS Fred Sellars, Tetra Tech Joseph Fischl, Tetra Tech Gabe Wapner, Hecate Energy Phil Mooney, Hecate Energy	Hecate met with NYSDEC and Ag & Markets representatives to introduce the project and discuss any concerns they may have regarding natural resources, wildlife, and agriculture.	Hecate indicated their willingness to complete longer-term monitoring of birds Hecate to: -Complete wetland delineation during the 2018 growing season complete breeding bird and raptor surveys, beginning during winter 2018 -Provide a farmlands assessment for the Facility Area -Inquire with the landowner on farm production -Explore mitigation to offset impacts to agricultural production NYSDEC to provide: -Meeting attendance sheet -GIS data for the Freshwater Wetlands located within/adjacent to the Facility Area. -Breeding Bird survey protocols and a sample data sheet for breeding grassland bird surveys). -Winter Raptor Survey Protocol	Concerns (NYSDEC): -Impacts to grassland birds -Fragmenting contiguous non-developed areas Requests/Recommendations (NYSDEC): -Wetland delineated report and formal Jurisdictional Determination will be required -U.S. Army Corps of Engineers (USACE) permit coverage will be required (likely Nationwide Permit) -Complete breeding bird surveys during late spring/early summer, and winter raptor surveys -Conduct longer-term (post-development) monitoring of birds Concerns (Ag & Markets): -Impact associated with taking active agriculture out of production Requests/Recommendations (Ag & Markets): -Assessment to differentiate important farmlands within the Facility Area -Statistics on actual farm production of the Facility Area -Explore mitigation based on value of agricultural land taken out of production Concerns (NYSDPS): -Nearby active mining operations' remaining life and plans
NYSDPS	03/16/18	Empire State Plaza Agency Building 3 Albany, NY 12223-1350	Andrew Davis, NYSDPS Jeremy Rosenthal, NYSDPS	Hecate met with the NYSDPS to discuss potential concerns and required content of the PSS.	No immediate follow-up actions other than addressing staff comments in PSS and Application	Concerns: -Account for the existing gas (propane) main within the Facility Area in the project design; provide owner

Stakeholder	Date	Location	Attendees	Purpose	Follow-Up Action Items	Comments
			Heather Behnke, NYSDPS Counsel Other Members of NYSDPS Staff (sign-in list to be obtained) Sam Laniado, Read and Laniado, LLP Joseph Fischl, Tetra Tech Bill Boer, Tetra Tech Gabe Wapner, Hecate Energy Phil Mooney, Hecate Energy			name -Review easements, restrictions for crossings and setbacks associated with existing gas main -Laydown areas and worker parking will need to be provided and addressed in Application; if offsite, need to identify locations and assess impacts Recommendations: -Different distances may be proposed for different study areas, clearly indicate in each PSS exhibit -Propose certificate conditions in the Application -Cumulative impacts should at a minimum address, habitat, visual, wetlands, and traffic
Westchester Power	03/19/18	Call	Dan Welsh, Program Director Gabe Wapner, Hecate Energy	Hecate is exploring how it may be able to provide energy from its projects to host communities. Hecate desired to learn more about the CCA program Dan runs and whether Westchester Power or an affiliate may be interested in running CCAs for the project host communities.		If the host communities were interested and willing in establishing CCA programs they possibly could choose to procure energy from Hecate's projects serving NYSERDA REC contracts
Village of Ravena	03/20/18	Call	Gabe Wapner, Hecate Energy	Arrange meeting with Mayor William Misuraca		Left message with Annette
Town of Bethlehem	03/21/18	Call	Robin Nagengast, Administrative Assistant Gabriel Wapner, Hecate Energy	Offered to meet with the Supervisor or someone in his office	Robin will check if anyone is interested and call Gabe back if there is interest.	
Hudsonia Ltd.	03/21/18	Call	Lea Stickle Gabe Wapner, Hecate Energy	Offered to meet with the organization to discuss our project.	Lea will have Erik Kiviat call Gabe back.	
Village of Ravena	03/22/18	Call	William Misuraca, Mayor Gabe Wapner, Hecate Energy	Introduce the project, Hecate, and the Article 10 process		-Mayor was aware of the project. -Mayor was thankful for being contacted. -Mayor was told that Hecate is available to answer any questions that may come up in the future.
Town of Coeymans	03/29/18	Supervisor's Office, 18 Russell Ave, Ravena, NY 12143	Philip Crandall, Supervisor Tom Dolan, Councilman Gabe Wapner, Hecate Energy Phil Mooney, Hecate Energy	Hecate to provide a development status update and gain an understanding of how the town would like to run the PILOT	Hecate to meet with the town's PILOT consultant	

Stakeholder	Date	Location	Attendees	Purpose	Follow-Up Action Items	Comments
Town of Bethlehem	03/29/18	Supervisor's Office, 445 Delaware Ave, Delmar, NY 12054, USA	David VanLuven, Supervisor George Kansas, Commissioner of Public Works Robert Leslie, Director of Planning Ken Kovalchik, Senior Planner Gabe Wapner, Hecate Energy Phil Mooney, Hecate Energy	Discuss with the town leadership the Article 10 Process and their ability to participate in it.		
Scenic Hudson	03/30/18	Email	Gabe Wapner, Hecate Energy Phil Mooney, Hecate Energy Ned Sullivan, President Audrey Friedrichsen, Land Use and Environmental Advocacy Attorney Seth McKee, Land Conservation Director	Hecate requested Scenic Hudson provide times in April when they could be available to meet.		

APPENDIX B – UPDATED STAKEHOLDERS LIST

Master List of Stakeholders

STATE AND FEDERAL AGENCIES

New York State Department of Agriculture and Markets
Richard Ball, Commissioner
10B Airline Drive, Albany, NY 12235
(585) 457-8876
info@agriculture.ny.gov

New York State Department of Agriculture and Markets
Matthew Brower, Environmental Analyst
10B Airline Drive, Albany, NY 12235
(585) 457-2851
matthew.brower@agriculture.ny.gov

NYSDEC
Basil Seggos, Commissioner
625 Broadway, Albany, NY 12233-1011
basil.seggos@dec.ny.gov

NYSDEC, Central Office
Daniel Whitehead, Director
Division of Environmental Permits, Major Project Management
625 Broadway, Albany, NY 12233-1750
(518) 402-9167
deppermitting@dec.ny.gov

NYSDEC, Region 4
Keith Goertz, Regional Director
1130 North Westott Road, Schenectady, NY 12306-2014
(518) 357-2068
R4Info@dec.ny.gov

NYS Energy Research and Development Authority
Alicia Barton, President
17 Columbia Circle, Albany, NY 12203
(518) 862-1090
info@nyserda.ny.gov

NYS Energy Research and Development Authority
Richard Kaufmann, Chair
17 Columbia Circle, Albany, NY 12203
(518) 862-1090
info@nyserda.ny.gov

NYS Office of General Services
RoAnn Destito, Commissioner
41st Floor, Corning Tower, Empire State Plaza, Albany, NY 13342
(518) 474-3899
RoAnn.Destito@ogs.ny.gov

New York State Department of Economic Development
Howard Zemsky, Commissioner
633 Third Avenue, Floor 37, New York, NY 10017 nys-nyc@esd.ny.gov

NYS Division of Homeland Security and Emergency Services
Jerome Hauer, Commissioner
1220 Washington Ave., State Office Campus, Building 7A, Suite 710, Albany, NY 12242
(518) 242-5000
website@dhses.ny.gov

New York State Office of Parks, Recreation, and Historic Preservation
Regional Director
19 Roosevelt Drive, Saratoga Springs, NY 12866
(518) 584-2535
Email not available

NYS Department of Public Service
James Denn, Public Information Officer
Empire State Plaza, Agency Building 3, Albany, NY 12223
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James.denn@dps.ny.gov

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Lorna Gillings, Outreach Contact
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NYS Department of Public Service
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cassandra.partyka@dps.ny.gov

NYS Department of Public Service – Office of Electric, Gas and Water
Andrew Davis
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Andrew.davis@dps.ny.us

NYS Department of Transportation, Region 1
Sam Zhou, P.E., Regional Director
Executive Office
50 Wolf Road, Suite 1s50, Albany, NY 12232
(518) 457-3522
Email not available

NYS Thruway Authority
Bill Finch, Executive Director
Administrative Headquarters
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P.O. Box 189
Albany, NY 12201-0189
(518) 436-2700
Email not available

New York Independent System Operator
Michael Bemis, Board Chair
10 Krey Boulevard, Rensselaer, NY 12144
(518) 356-6060
stakeholderservices@nyiso.com

New York State Hudson River Valley Greenway Greenway Conservancy for the Hudson River Valley
Kevin M. Burke, Acting Chair
625 Broadway, 4th Floor, Albany, NY 12207
(518) 473-3835
hrvg@hudsongreenway.ny.gov

Empire State Development Corporation
Kenneth Tompkins, Mohawk Valley
Regional Director
207 Genesee Street Utica, NY 13501
(315) 793-2366
nys-mohawkval@esd.ny.gov

Stockbridge-Munsee Community Band of Mohican Nation
Shannon Holsey, Tribal President
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Shannon.holsey@mohican-nsn.gov

Saint Regis Mohawk Tribe
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Akwesasne, NY 13655
communications@srmt-nsn.gov

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invite@gillibrand.senate.gov

US Senate
Charles E. Schumer, US Senator
Leo O'Brien Building, Room 420, Albany, NY 12207
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Email not available

US House of Representatives
Paul Tonko, Representative, 20th Congressional District
19 Dove Street, Suite 302, Albany, NY 12210
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Email not available

NYS Department of State
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New York State Assembly
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RELEVANT LOCAL AGENCIES, HOST MUNICIPALITIES AND SCHOOL DISTRICTS, ADDITIONAL STAKEHOLDERS, AND PUBLIC INTEREST GROUPS

Albany County Industrial Development Agency
Hon. Gary W. Domalewicz, Chairman
Harold L. Joyce Albany County Office Building
112 State Street, Room 740, Albany, NY
12207 (518) 466-7952
Email not available

Albany County Executive
Harold L. Joyce Albany County Office Building
112 State Street, Room 1200, Albany, NY 12207
(518) 447-7000
Email not available

Albany County
Bruce A. Hidley, County Clerk
County Court House, Room 128, 16 Eagle Street, Albany, NY 12207-1077
(518) 487-5100
countyclerk@albanycounty.com

Albany County Economic Development, Conservation & Planning
Harold L. Joyce Albany County Office Building
112 State Street, Room 1200, Albany, NY 12207
(518) 447-5670

Albany County Soil and Water Conservation District
P.O. Box 497, 24 Martin Road, Voorheesville, NY 12186
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Town of Coeymans Planning Board
Ernest Quinto, Chair
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planningboard@coeymans.org

Town of Coeymans Fire Company
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Town of Coeymans Conservation Advisory Council
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Village of Ravena
Hon. William Misuraca, Mayor
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Village of Ravena
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nmoquin@townofbethlehem.org

Town of Bethlehem
David VanLuven, Supervisor
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Ravena-Coeymans-Selkirk Central School District
Dr. Brian Bailey, Superintendent of Schools
District Office – 15 Mountain Road, Ravena, NY 12143
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South Albany Air Navigation Facility
Ted Zabinski, Airport Manager
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(518) 281-5430
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Cross' Farm Air Navigation Facility
John N. Cross, Airport Owner
Route 144, Selkirk, NY 12158
(518) 767-3056
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Albany International Airport
Albany County Airport Authority
Rev. Kenneth J. Doyle, Chairman
Administration Building – Second Floor, Albany, NY 12211
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Email not available

Columbia County Airport
Dean Knox, Airport Manager
P.O. Box 324, 178 Route 23B, Hudson, NY 12534
(518) 828-7011
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Alliance for Positive Health
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