APPLICATION FOR HEARING WITH MOUNT JOY TOWNSHIP BOARD OF SUPERVISORS

Dat	of Filing: 11-12-19				
Filir	Fee: \$ 500.00				
1)	Applicant's Name and Address: Matthew Handel, Vice President c/o Chanelle Mayer				
	Brookview Solar I, LLC, 700 Universe Blvd., Juno Beach, FL 33408				
	Phone: (561) 691-2716				
2)	owner's Name and Address: See attached Application in Support of Brookview Solar I Conditional				
	<u>Use Permit attached hereto as Exhibit A.</u>				
	hone:				
3)	ocation of Property/Lot and/or Structure, which is the subject of the application:				
	The location of the real estate to be affected by the proposed change is shown on the Site Plan attached				
	to Exhibit A (the "Plan").				
4)	Zoning Classification of effected property: Baltimore Pike Corridor				
5)	Proposed Use: Solar Energy System				
6)	A. X Conditional Use B. Zoning Amendment C. Curative Amendment				
	C Curative Amendment				
7)	ections of the Ordinance applicable to the relief requested:				
	Township's Zoning Ordinance \$301 permits solar energy system by Conditional Use in the				
	Baltimore Pike Corridor				
8)	escriptions of attachments: Application in Support of Brookview Solar I Conditional Use Permit				
	ning this application, I declare that I understand that false statements herein made are subject to the penalties of 18 Pa. 1904, relating to unsworn falsification to authorities.				
	histolika k				
Sign	ture:				
FOR OFFICE USE ONLY					
Date	eceived: Fee: \$ Date Paid:				

This Application is an important legal document. Township employees, including the Zoning and Code Enforcement Officer, will provide general assistance in preparation and submission of your application. However, Township employees cannot provide legal advice or legal representation to you. You should consult your own attorney instead.

Cash

Check

Date Approved:



Brookview Solar Energy Center

Overview

- » Located in Mt. Joy Township in Adams County, Pennsylvania
- » A potential 75-megawatt photovoltaic solar energy generating facility
- » Owned and operated by a subsidiary of NextEra Energy Resources, LLC
- » Expected to begin commercial operation as early as 2022

About NextEra Energy Resources

- » A leading clean energy provider operating wind, natural gas, solar and nuclear power plants
- » A portfolio of power generating facilities across the United States and in Canada
- » The world's largest generator of wind and solar energy
- » A subsidiary of NextEra Energy, Inc., with headquarters in Juno Beach, Florida
- » Approximately 99 percent of the electricity we generate comes from clean or renewable sources

NextEraEnergyResources.com

Benefits

- » Up to \$10 million in additional tax revenue over the life of the project to benefit the local school district, township and county
- » \$90 million capital investment
- » Approximately \$16 million in landowner payments over the life of the project
- » Creates up to 150 construction jobs and 2-3 permanent jobs
- » Supports economy through purchases of regional goods and services
- » Emissions reduction equivalent to removing more than 26,000 cars from the road each year
- » Creates no air or water pollution
- » Uses no water to generate electricity

How the Brookview Solar Energy Center Will Work

As sunlight hits the solar panels, the photovoltaic energy is converted into direct current electricity (DC). The direct current flows from the panels through inverters and is converted into alternating current (AC). From the inverter, some of the emissions free energy goes into a battery system to be stored for use at a later time while the rest of the energy travels through the power grid for delivery to homes and businesses.



APPLICATION IN SUPPORT OF BROOKVIEW SOLAR I CONDITIONAL USE PERMIT

Brookview Solar I, LLC (the "Applicant") is a wholly-owned, indirect affiliate of NextEra Energy Resources, LLC. The Applicant has prepared this application (the "Application") for a Conditional Use Permit for a Solar Energy System with a capacity to produce up to 75 megawatts (MW) of electricity ("Project"). This Application is submitted to the Mount Joy Township ("Township") Board of Supervisors and prepared according to the standards set forth in §110-1201 of the Township's Zoning Ordinance (the "Ordinance"). The Applicant submits information, exhibits, and materials made part of the Application below in order to comply with the Township's Conditional Use Permit Application criteria.

A (1)(a) Name and Address of Applicant

Matthew Handel - Vice President c/o Chanelle Mayer Brookview Solar I, LLC, 700 Universe Blvd. Juno beach, FL 33408

A (1)(b) Name and Address of the landowner of the real estate to be affected

There are eighteen (18) separate landowners benefiting directly from the development of the solar energy system. The name and address of each of the participating landowners of the real estate to be affected are set forth on <u>Exhibit A</u> attached hereto.

A (1)(c) Brief Description and Location of the Real Estate to be Affected by Such Proposed Change

The location of the real estate to be affected by the proposed change is shown on the Site Plan attached hereto as Exhibit B (the "Plan") and includes approximately 1,000 acres.

As described below, the site location has been carefully selected with specific evaluation criteria including metrological, topographic, cultural/historic, and environmental data; conformance with local, state, and federal regulations; and ability to interconnect into the local transmission grid operated by Met-Ed. The majority of the site is currently cultivated in annual row crops and minimal forest clearing will be necessary for the panel zone. Vegetative screening will be utilized in accordance with the Township's zoning requirements to minimize visibility of the Project from adjacent residential properties. Please see Exhibit G for details related to the landscaping plan.

A (1)(d) A statement of the present zoning classification of the real estate in question, the improvements thereon, and the present use thereof

The portion of the project requiring conditional use approval is located in the Baltimore Pike Corridor ("BPC"). All land in the BPC is currently used for agricultural purposes. There are no existing improvements on any of the land located in the BPC.

A (2) Names and Address of adjacent lot owners, including lots directly across a public right-of-way.

Please see Exhibit C for a list of the adjoining landowners.

A (2)(a) Copies of Scaled Drawings

Please see Exhibit B for the "Brookview Solar Preliminary Site Plan" (Plan).

A (2)(b) A written description of the proposed use in sufficient detail to demonstrate compliance with all applicable provisions of this chapter, including competent evidence demonstrating a substantial likelihood of compliance with the requirements of this chapter.

The Project consists of 26 parcels with 13 located in the BPC zone. The parcels included in the Project are set forth on Exhibit A.

The Project is located in a rural environment and in the Baltimore Pike corridor on land zoned Agricultural Conservation ("AC") and BPC. A Solar Energy System is a use permitted by right in the AC zone and is permitted by Conditional Use in the BPC. Although only the portion of the Project located in the BPC requires Conditional Use Approval, the Applicant has included details of the entire Project so that the Township has a complete understanding of the Project.

The Project will produce up to 75 MW of solar energy on approximately 530 acres, of the total of 1,000 acres under consideration, of land located in the Township. It will consist of the following components:

- 1. Up to twelve (12) ft. tall, ground-mounted solar photovoltaic modules (single axis tracking).
- 2. Electrical inverters to convert the power from Direct Current (DC) to Alternating Current (AC).
- 3. A collection substation and utility-owned switchyard required to step-up the voltage to accommodate an interconnection into the electrical grid.
- 4. Underground collection lines to connect the panels to the accessory structures.
- 5. An eight (8) ft. tall security fence surrounding the facility as required by Section 11 of the National Electrical Safety Code (NESC).
- 6. Safety lighting around the substation.

The Project has been designed to incorporate the required setback and landscaping features to provide compatibility with surrounding properties in accordance with all applicable zoning requirements. The landscaping requirements will reduce the views of the solar arrays, beautify sections of roadway and add ecological benefits with the creation of new wildlife habitat. Ground cover will be handled via mowing and weed removal around the piles holding the panels.

Drainage and preliminary stormwater features will exist to accommodate water flow on site in accordance with all applicable SALDO requirements and conditions. All National Pollution Discharge and Elimination System (NPDES) requirements will be met and copy of the NPDES permit will be provided to the Township prior to the start of construction.

There will be access and maintenance roads throughout the interior of the Project, site as shown on the Plan. The driveway to the site satisfies the requirements of the Township's Subdivision and Land Development Ordinance and the unimproved internal roads are designed to provide access by maintenance and emergency management vehicles. The Applicant expects that it will access the site weekly, not daily, for expected maintenance and inspection. Additional site access may be deemed appropriate from time-to-time for unplanned maintenance events.

The Applicant expects to invest approximately \$90,000,000 of total capital expenditures into the Project which will generate up to \$10,000,000 in property taxesto benefit the local school district, Mt. Joy Township, and Adams County. The Project will be a low-impact development requiring little-to-no increase in public services (police, fire/EMT, school, transportation, etc.).

The Project provides many benefits including: an opportunity for locally generated, clean energy in the Township, supplemental income generation for the landowners, new wildlife habitat in the extensive landscaping buffer and economic investment and increased tax revenue for the Township. The Project will also generate approximately 150 full-time-equivalent (FTE) construction and installation jobs, and 2-3 permanent operations and maintenance jobs. Additional benefits of the Project are set forth in the Solar Fact Sheet attached as Exhibit D.

A(2)(c) A written statement identifying the natural, scenic, historic and esthetic values of the environment within the scope of Article I, Section 27 of the Pennsylvania Constitution (Environmental Rights Amendment) reasonably likely to be impacted by the proposed use and identifying the source(s) of law that preempts regulation of the impacts by zoning.

The Brookview Solar Project is a proposed private action on private land with low risk to adversely affect the human or natural environment. A state NPDES permit is required from the Pennsylvania Department of Environmental Protection (DEP), therefore cultural resources review is anticipated pursuant to the Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and/or the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. If permitting triggers formal consultation with the Pennsylvania State Historic Preservation Office (SHPO), a Phase I archaeological survey and an aboveground historic property survey will be completed pursuant to Section 106 of the National Historic Preservation Act (NHPA) in consultation with SHPO.

To complete the required resource studies for agency reviews, the Applicant has contracted a local environmental consulting expert to perform siting due diligence including literature

reviews, database searches, field surveys, and agency coordination. These resulting reports will identify and assess existing environmental conditions of the Project and to the site vicinity as well as associated potential impacts. Information derived from this environmental due diligence will be used by the Applicant to avoid and minimize potential impacts to sensitive environmental resources during the design phase.

Preliminary review of mapping and files maintained by the SHPO did not identify any previously recorded archaeological sites, historic buildings or structures, or historic districts, eligible or listed on the National Register of Historic Places (NRHP) within or directly adjacent to the project site. Upon further review of the SHPO files several historic farmhouses and associated outbuildings were identified within the preliminary study area, of which their integrity will be evaluated in consultation with the SHPO. The Project site is not within or adjacent to any battlefield under the jurisdiction of the National Park Service (NPS); with the closest battlefield being the Gettysburg National Battlefield 3-miles to the northwest. Brookview Solar is committed to minimize impacts on sensitive environmental resources including historic resources, and as such, will ensure any direct or indirect secondary visual impacts are minimized as much as is practical and in compliance with Township ordinances. The Landscape Report attached as Exhibit E details the Project's compliance with the significant landscaping, screening and buffering design requirements set forth in Section 402(II) and Article VII of the Mt. Joy Township Ordinance. Thus, the Project is not expected to result in significant adverse impacts or to the natural, scenic, historic, or esthetic value of the surrounding area.

GENERAL CONDITIONAL USE CRITERIA

Section 110-1201(B) of the Ordinance sets forth the criteria applicable to all conditional uses.

This criteria is as follows:

(1) The proposed use shall be consistent with the purpose and intent of the chapter as expressed in the district descriptions and such use is specifically authorized as a use by conditional use within the district wherein the applicant seeks approval.

The purpose of the BPC Baltimore Pike Corridor is to take advantage of the corridor's historic function as a major thoroughfare and to continue the established mixed use and intensive development pattern along the corridor, subject to appropriate siting and design controls that foster the continued efficiency of State Road 97 as a major corridor, enhance the appearance of land use along State Road 97, protect and preserve the historic features along State Road 97, and minimize adverse impacts of nonresidential uses on residential uses.

The location of the Project in the BPC is necessary because of the current location of the Met-Ed substation within the BPC. The project will occupy large agricultural properties that allow the collection of the solar energy and delivery to the substation.

The project will not impact the efficiency of State Road 97 as a major corridor and will enhance the appearance of the land used along State Road 97 as all land fronting on State Road 97 shall

include a 15-25 feet landscaping buffer (as is detailed in the Landscaping Report found in Exhibit E) from the existing right of way. The buffer shall be designed in accordance with Township requirements to provide a natural-looking visual element.

One of the key benefits of a solar project like this is that solar energy facilities are a way to preserve agricultural land because the minimal impact of the Project allows for future agricultural use following the solar project decommissioning. The Applicant will prepare and submit a detailed estimate and decommissioning plan for removal of the equipment, and restoration of the land to pre-Project conditions at the time of applying for a building permit or 30 days prior to commencement of mobilization and construction, whichever occurs first.

(2) The proposed use shall not detract from the use and enjoyment of adjacent and nearby lots.

The proposed use shall have little to no impact whatsoever on the use and enjoyment of adjacent and nearby lots. There will be minimal traffic congestion, noise noticeable to adjacent lots, ongoing waste created or no noxious odors. There will be adequate screening detailed below for all residential neighbors as required by the Ordinance.

- (3) The proposed use will not substantially change the character of the subject lot's neighborhood; nor adversely affect:
 - a. the character of the general neighborhood,
 - b. the conservation of property values,
 - c. the health and safety of residents or workers on adjacent lots and in the neighborhood,
 - d. nor the reasonable use of neighboring lots.
 - e. The use of adjacent lots shall be adequately safeguarded.
- The Project will maintain the agricultural nature of the area as the Project allows for future agricultural use following the solar project decommissioning.
- The Ordinance requires specific buffering to reduce any visual effect of the use. There will be no odors, noise, traffic congestion or ongoing waste created by the use. Ultimately, the Project will not change the character of the area or neighborhood as the area will remain predominately agricultural and the required buffering will significantly reduce the visibility of the Project.
- The Property Value Impact Study attached as <u>Exhibit F</u> demonstrates that there will be no adverse effect on property values.
- The Project will have no adverse health or safety impacts on residents of adjacent lots.
- The Project will have no adverse effect on the use of neighboring lots and there will be adequate safeguards for the use of adjacent lots.
- The Solar Fact Sheet attached as Exhibit E sets forth the many benefits of solar projects.
- (4) Adequate public facilities are available to serve the proposed use and the proposed use shall not have an adverse effect upon the logical and economic extension of such public services and facilities (e.g., schools, parks and recreation, fire, police and ambulance protection, sewer, water and other utilities, vehicular access, etc.).

One of the uniquely positive features of solar projects relative to other kinds of development is that they consume little to no government provided infrastructure or services. The Project will not use any public water or generate any waste that requires an extension of sewer, nor will the Project create a burden for the local schools. The Project will operate independently of these services. The only services needed for the Project will be coordination with fire and rescue personnel to ensure the proper response in the unlikely event of an emergency situation.

(5) The applicant shall establish by credible evidence that the proposed use shall be in and of itself properly designed with regard to internal circulation, off-street parking, off-street loading, landscaping, screening, buffering and all other elements of proper design as specified in this chapter and any other governing law or regulation.

The Landscape Report attached as <u>Exhibit G</u> details the Project's compliance with the significant landscaping, screening and buffering design requirements set forth in Section 402(II) and Article VII of the Ordinance. These requirements consist of buffers that will screen and mitigate the visual impact of the facility along its existing perimeter by (1) retaining existing trees to the extent possible and (2) planting buffers. As detailed in the Landscape Report, the proposed landscaping will soften the fence line and views of the solar arrays and other infrastructure, as well as beautify some sections of roadway and add ecological benefits with the creation of new wildlife habitat. The specific landscaping requirements are set forth in Article VII unless the solar specific requirements of Section 402 are more specific in which case they apply.

Section 402(II)(8) of the Ordinance requires a buffer (A) of no less than 25 feet in depth shall be required along (i) any public road frontage and (ii) any lot line adjacent to a lot improved with a dwelling or an unimproved lot in a residential zoning district, provided that the buffer along a lot line shall not apply to lots hosting a single solar energy system. Buffer (B), meets the general requirements for a buffer 15 feet in depth set forth in Section 708(C) of the Ordinance. The detailed landscaping and buffering report including Buffer (A), Buffer (B), and existing vegetation can be found in Exhibit G.

The remainder of the landscape design requirements are set forth on Exhibit H. As shown on the Site Plan, the Project satisfies these requirements.

There is adequate space for off-street parking and loading as shown on the plans. The Project will only have minimal traffic during operations, with access drives meeting the Township's requirements and the interior of the system improved with traffic aisles sufficient to allow access by maintenance and emergency vehicles.

(6) The proposed use demonstrates a substantial likelihood of compliance with the requirements of this chapter.

The Project complies in all respects with the requirements of the Zoning Ordinance as detailed in this Application.

SPECIFIC CONDITIONAL USE CRITERIA FOR SOLAR ENERGY SYSTEMS

In addition to the criteria applicable to all conditional uses, a Solar Energy System must also comply with the requirements set forth in Section 402(II) of the Ordinance.

The Application satisfies all the requirements set forth in Section 402(II)(2) of the Ordinance.

1. Site Plan

The Project's site plan is attached as **Exhibit B**.

2. Glare Analysis

A glare analysis demonstrating that any glare produce by the Project will not have an adverse impact is attached as Exhibit I.

3. Manufacturer Specifications

The Applicant does not yet have the manufacturer specifications for the project. They will however be provided at the time of application for a building permit or 30 days prior to site development, whichever occurs first.

The solar panels are a crystalline or thin film product with an anti-reflective coating that are rectangular in shape, and black/dark grey in color. A long row of solar panels is commonly referred to as an "array" and a group of arrays within a fence is often referred to as a "solar field."

The panels are mounted onto structures (racks) that will "track" or follow the sun as it moves in the sky throughout the day to allow for the most efficient energy production that will align with the power purchase demand profile. The racks are supported by steel posts spaced approximately ten to twenty feet apart. The Project is expected to utilize pile-driven posts inserted into the ground to an approximate depth of six to ten feet below grade; however, depth may vary throughout the site based on soil conditions, local topography, and further geotechnical analysis.

Once mounted, at certain times of the day, the bottom of each solar module will be at between two and three feet above grade, while the top will be at approximately twelve feet above grade. The maximum height of all the equipment within a given solar field will be 12 feet, and because the panels rotate with the movement of the sun, most of the day the solar panels will be well under this height.

4. Confirmation from public utility

The Applicant does not yet have written confirmation from the public utility to which the system will be interconnected to but such confirmation shall be provided at the time of application for a building permit or 30 days prior to site development, whichever occurs first. The anticipated timeline for agreement with the public utility is set forth on Exhibit J.

5. Certified Installer

The Applicant will use either an approved installer from the PaDEP's approved solar installer list or a demonstrated equivalent and will identify the installer at the time it applies for a building permit for the entire project.

6. Solar Easements

The Applicant has easements for collection lines with the property owners set forth on Exhibit A.

In addition, the Project meets the remaining criteria set forth in Section 402(II)

Lot Size Requirement

The Project is larger than the required two acres.

Setback Requirements

The Project shall be no closer than 50 feet to the lot line of an adjacent lot improved with a dwelling or an unimproved lot in a residential zoning district.

Fencing Requirements

The Project shall be enclosed with a minimum 8 foot high fence with a self-locking gate.

Access Drive

As shown on the Site Plan, the Project has an access drive meeting the requirements of Chapter 86 and the interior of the system is improved with travel aisles sufficient in location, dimension and construction to allow access by maintenance vehicles and emergency management vehicles.

Lighting

Outside of the substation area, there will be no lighting. The substation lighting will comply with applicable OSHA safety standards for worker safety.

Buffer Depth

As detailed above in Section 5 of the General Criteria, and shown on the Plan, the Project will have a 25 feet buffer along public road frontage and any lot line adjacent to a lot improved with a dwelling or an unimproved lot in a residential zoning district. The remainder of the Project will have a 15 feet buffer as required under Article VII of the Ordinance.

Fencing

The required fencing is located inside the buffer.

Buffer Planting Requirements

As detailed above in Section 5 of the General Criteria, the buffer shall comply with all requirements of Section 402(II)(10) and Article VII of the Ordinance.

Decommissioning Requirements

Pursuant to 402(II)(10)(k) of the Ordinance, the Applicant estimates the cost of decommissioning the Solar Energy Facility will be approximately \$1,665,466 based on the current available information at the time of application. The Applicant will provide the required performance security at the time of application for a building permit or 30 days prior to site development, whichever occurs first. These dates may vary and are dependent on several factors including the review of the transmission line interconnection study. The interconnection agreement will be provided to the Township when it is completed and available to the Applicant.

Exhibit A

Landowners

Exhibit A

Brookview	Solar	Participating	Land Owners
DIOCKAICAA	Julai	r at tivipatitig	Lanu Owners

Last Name	First Name	Address
Bosley	Bryan	210 Mud College Road Littlestown, PA 17340
Diehl	Robert & Ruth	70 Miller Road Littlestown, PA 17340
Gitt	Bob	3825 Baltimore Pike Littlestown PA 17340
Hilbert	Ken	4004 Baltimore Pike Littlestown PA 17430
Hofmann	Kitty & Joe	217 Mud College Road Littlestown, PA 17340
Kinsela	Dave & Mary	365 Bowers Road Littlestown PA 17340
Ottey	Pauline	310 Updyke Road Littlestown, PA 17340
Snyder	Glenn & Barbara	319 California Road Littlestown PA 17340
Uhler	Lester	156 Plunkert Road Littlestown, PA 17340
Updyke	David	165 Updyke Road Littlestown, PA 17340
Urban	Frank & Theresa	175 Mud College Road Littlestown, PA 17340
Wickline	Donald & Judy	27 Krug Road Littlestown, PA 17340
Wood	Clayton & Corbin	3303 Sutton Rd Geneva NY 14456
Wood	Steve & Christine	3825 Baltimore Pike Littlestown PA 17340
Keller	Michael & Nora	418 Granite Station Road Gettysburg, PA 17325
Basehoar	Millard & Deb	355 Basehoar Road Littlestown, PA 17340
Shelly	Dorcas Ann	460 California Road Littlestown, PA 17340
Hartlaub	Samuel T.	931 Beck Road Gettyburg, PA 17325
Cecil	Harrison Ray	281 California Road Littlestown, PA 17340

Clayton Wood and Corbin Wood 3303 Sutton Rd Geneva NY 14456

October 11, 2019

Mt. Joy Township – Board of Supervisors 902 Hoffman Home Road Gettysburg, PA 17325

Re:

Conditional Use Permit - Solar Energy System

Nextera Energy Resources, LLC

Brookview Solar Project, Mt. Joy Township, Adams County

To Whom it May Concern,

On behalf of the undersigned Township of Mt. Joy ("Township") and Adams County ("County") officials and residents, please accept this letter as evidence of my support of Nextera Energy Resources, LLC's ("NextEra") Brookview Solar Project. NextEra representatives have met with me to present their development plans and I believe that the Brookview Solar Project will benefit our community greatly. NextEra has demonstrated to us that it is committed to bringing new investment and low-cost, clean energy to our community and beyond.

NextEra is the world's largest generator of renewable energy from the wind and the sun. This gives us great confidence, knowing that we are working with a company that knows the industry and has proven it can develop, build and operate successful solar projects to benefit communities. Once completed, the Brookview Solar Project will deliver substantial tax revenue to our Township and County, deliver both short and long term jobs, and will not require any public infrastructure or additional services from our local communities. The project will also significantly contribute to Pennsylvania's clean energy future, which is something we can all value.

When considering approval of the Conditional Use permit, I ask that you consider my strong support for development of renewable energy projects in Mt. Joy Township, specifically NextEra's Brookview Solar Project.

Sincerely,

Clayton Wood & Corbin Wood

Mr. Ken Hilbert 4004 Baltimore Pike Littlestown PA 17430

October 11, 2019

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Sincerely, Kenneth a. fuller

Ken Hilbert

Mr. & Mrs. Steve Wood 3825 Baltimore Pike Littlestown PA 17340

October 11, 2019

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Sincerely.

Steve Wood & Christine Wood

Mr. Bryan Bosley 210 Mud College Road Littlestown, PA 17340

October 11, 2019

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Sincerely,

Bryan Bosley

Mr. Bob Gitt

3925 Baltimore Pike
Littlestown PA 17340
3854

October 11, 2019

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Sincerely,

Bob Gitt

Mr. & Mrs. Frank Urban 175 Mud College Road Littlestown, PA 17340

October 7, 2019

Mt. Joy Township – Board of Supervisors 902 Hoffman Home Road Gettysburg, PA 17325

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Sincerely,

Frank Urhan & Theresa Urhan

Mr. Sam Hartlaub 931 Beck Rd Gettyburg, PA 17325

October 7, 2019

Mt. Joy Township – Board of Supervisors 902 Hoffman Home Road Gettysburg, PA 17325

Re: Conditional Use Permit – Solar Energy System

Nextera Energy Resources, LLC

Brookview Solar Project, Mt. Joy Township, Adams County

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Sincerely,

Sam Hartĺaub

Mr. & Mrs. David Kinsella 365 Bowers Road Littlestown PA 17340

October 7, 2019

Mt. Joy Township — Board of Supervisors 902 Hoffman Home Road Gettysburg, PA 17325

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Sincerely, David Kinsella

& Máry Kinsella

Mr. & Mrs. Millard Basehoar 355 Basehoar Road Littlestown, PA 17340

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Millard Basehoar & Deb Basehoar

Mr. Lester Uhler 156 Plunkert Road Littlestown, PA 17340

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Lester Uhler Laster O MMen

Mr. & Mrs. Joe Hofmann 217 Mud College Road Littlestown, PA 17340

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Joe Hofmann & Kitty Hofmann

Joseph F. Hofman

Mr. & Mrs. Glenn Snyder 319 California Road Littlestown PA 17340

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Sincerely,

Glenn Snyder & Barbara Snyder

Ms. Dorcas Ann Shelly 460 California Road Littlestown, PA 17340

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Dorcas Ann Shelly

Mr. & Mrs. Robert Diehl 70 Miller Road Littlestown, PA 17340

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Donald & Judy Wickline

Ms. Pauline Ottey 310 Updyke Road Littlestown, PA 17340

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Pauline Ottey

Mr. Harrison Ray Cecil 281 California Rd. Littlestown, PA 17340

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Harrison Ray Cecil

Exhibit B

Site Plan













TECHNOLOGICAL SPECIFICATIONS

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OUTPUT IS BASED ON 415 WATT PANELS, WITH 10% OF THE SITE USING 370 WATT PANELS.

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19	UHLER	30116-0039000
20	DIEHL	30116-0040000
21	DIEHL	30116-0040000
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Legend

Project Boundary

----- Property Setbacks (50ft)

Solar Array

- - Fenceline





Solar Inverter

---- Transmission Lines ---- PA State Roads

---- Delineated Streams

Delineated Wetlands







MT JOY TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA

į	m -
i	10/11/2019
ļ	PROJECT MANIPER 42530
ı	RECONCIEW SOLAR

REVISIONS

PRELIMINARY SITE PLAN



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Access Point

Internal Roads

Substation Location

Solar Inverter

---- Transmission Lines

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---- Delineated Streams

Delineated Wetlands



BROOKVIEW SOLAR MT JOY TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA

10/11/2019 42530 BROOKMEW BOLAR E. FORNEY

REVISIONS



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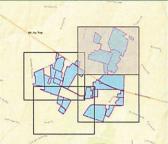
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TIMMONS GROUP

BROOKVIEW SOLAR MT JOY TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA

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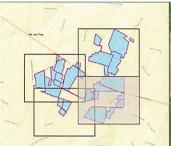
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---- PA State Roads

---- Delineated Streams

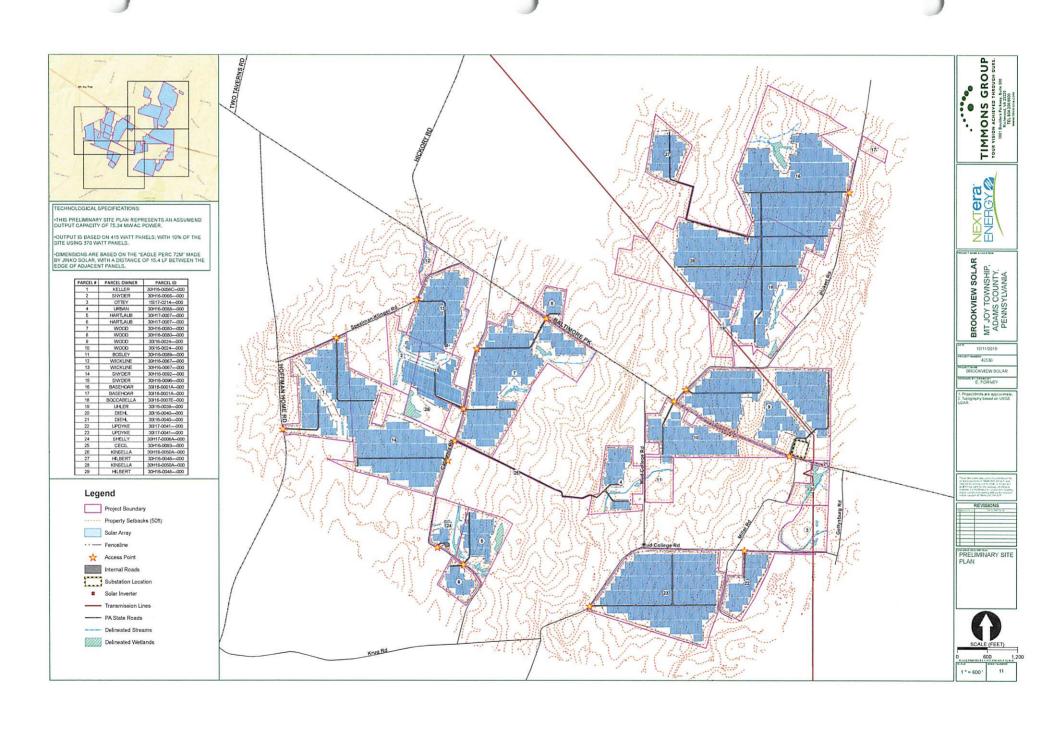
Delineated Wetlands

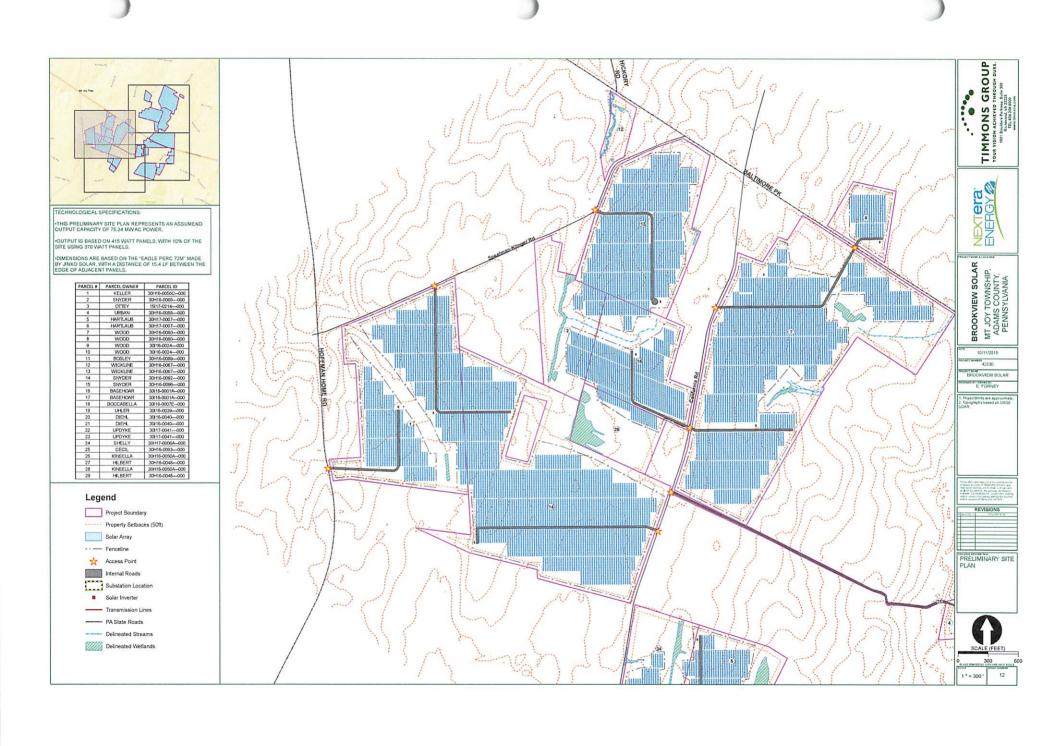


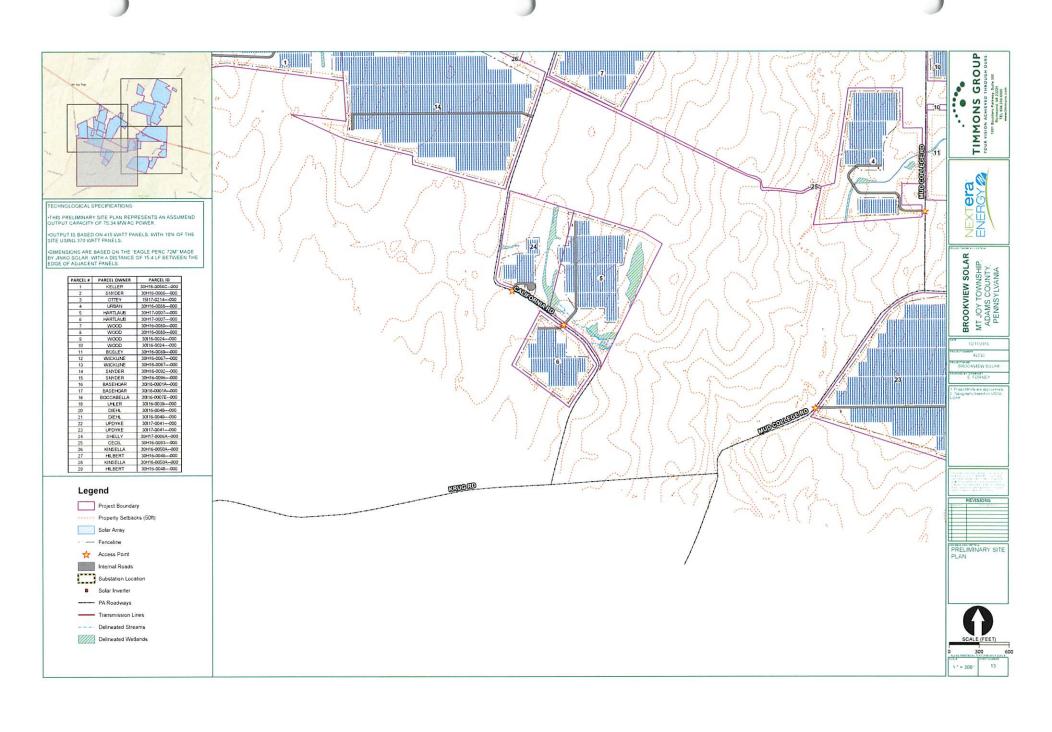
GROUP THROUGH OURS.

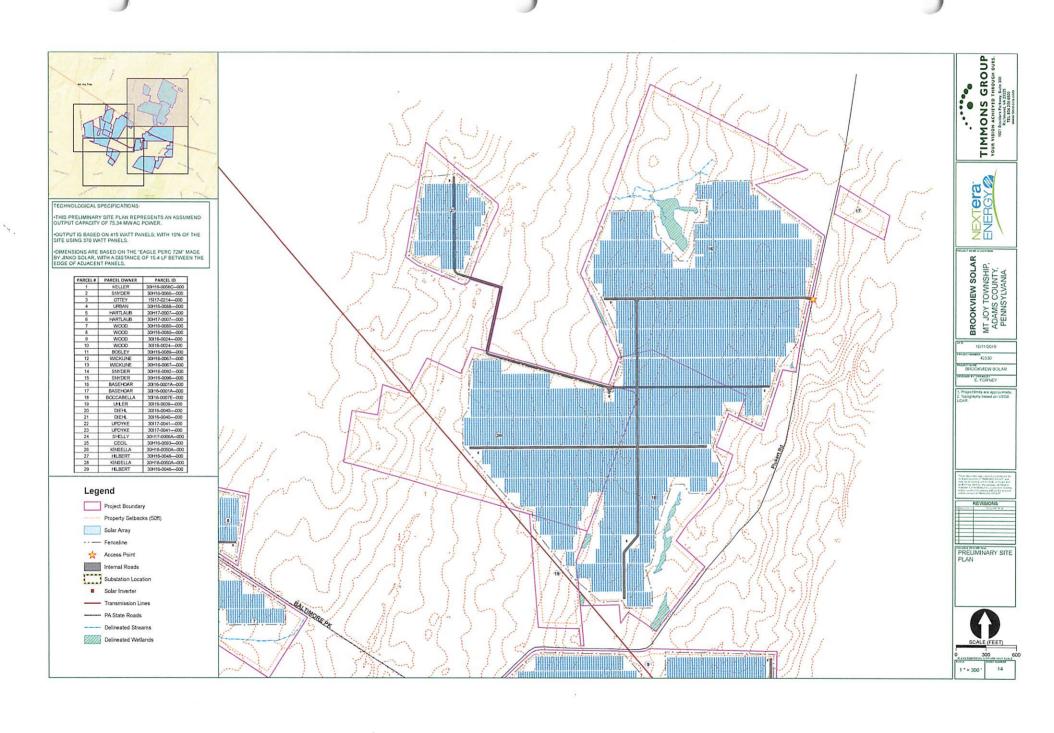
BROOKVIEW SOLAR MT JOY TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA

10/11/2019 42530 BROOKVIEW SOLAR E. FORNEY









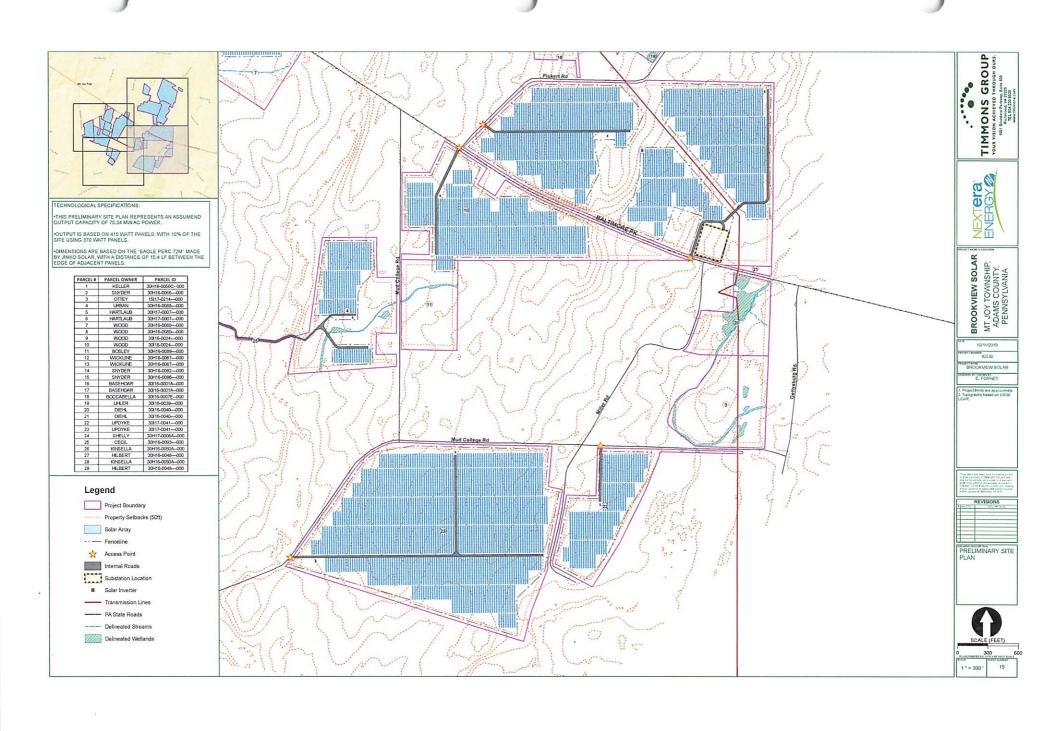


Exhibit C

Adjacent Landowners

Brookview Solar Adjacent Land Owners					
Name	Mailing Address	City	State	Zip	
CAROL L. NEWHART	720 PLUNKERT RD	LITTLE	STOWN	PA	17340- 9644
JAMES R. & TONIA R. REICHART	385 BULK PLANT RD	LITTLE	STOWN	PA	17340- 9668
JAMES R. & TONIA R. REICHART	325 BULK PLANT RD	LITTLE	STOWN	PA	17340- 9668
R. EDWARD & NANCY L. REICHART	892 HICKORY RD	LITTLE	STOWN	PA	17340- 9666
THOMAS D. & CAROL L. NEWHART	720 PLUNKERT RD	LITTLE	STOWN	PA	17340- 9644
JOHN C. & VIRGINIA R. BENTZEL	375 BOWERS RD	LITTLE	STOWN	PA	17340- 9467
WILLIAM D. & PAMELA A. HUFFMAN	555 BOWERS RD	LITTLE	STOWN	PA	17340- 9478
CODY R. HUFFMAN	555 BOWERS RD	LITTLE	STOWN	PA	17340- 9478
YVETTE F. PITTINGER	285 BOWERS RD	LITTLE	STOWN	PA	17340- 9670
G. STEVEN & VIRGINIA D. ZIEGLER	4002 BALTIMORE PIKE	LITTLE	STOWN	PA	17340- 9574
FRANCIS HARTLAUB	4110 BALTIMORE PIKE	LITTLE	STOWN	PA	17340- 9684
FRANCIS HARTLAUB	4110 BALTIMORE PIKE	LITTLE	STOWN	PA	17340- 9684
FRANCIS L. HARTLAUB	4110 BALTIMORE PIKE	LITTLE	STOWN	PA	17340- 9684
TOWNSHIP OF MOUNT JOY	902 HOFFMAN HOME RD	GETTY	'SBURG	PA	17325- 8609
LARRY HARTLAUB	980 WHITE HALL RD	LITTLE	STOWN	PA	17340- 9459
DENNIS L. & DIANE T. GEBHART	206 HICKORY RD	LITTLE	STOWN	PA	17340- 9561
ROBERT L. & MARY M. BUCKLEY	94 PLUNKERT RD	LITTLE	STOWN	PA	17340- 9454
MITCHELL J. & SANDRA A. REAVER	150 PLUNKERT RD	LITTLE	STOWN	PA	17340- 9453
AAR PLASTIC & GLASS LLC ATTN:G. STEVEN ZEIGLER	4130 BALTIMORE PIKE	LITTLE	STOWN	PA	17340- 9684
TOBY L. HARTLAUB	30 MUD COLLEGE RD	LITTLE	STOWN	PA	17340- 9300
JOHN E. & DEBORAH M. KEENAN	50 MUD COLLEGE RD	LITTLE	STOWN	PA	17340- 9300
TRAVIS J. & KRISTI M. BERWAGER	112 FUHRMAN MILL RD	HANO	VER	PA	17331- 9677

DWICHT C 9 TECCA T ANADEC	4210 DALTIMODE DIVE	LITTI ECTOVAM	D.A.	17240
DWIGHT C. & TESSA T. AMOSS	4219 BALTIMORE PIKE	LITTLESTOWN	PA	17340-
JOHN D. & MARY V. MC LATCHY	147 MUD COLLEGE RD	LITTLESTOWN	PA	9685 17340-
JOHN D. & WART V. WE LATERT	147 MOD COLLEGE RD	LITTLESTOWN	FA	9719
PATRICIA ANN TROXELL	500 BOYDS SCHOOL	GETTYSBURG	PA	17325-
	RD		` ` `	8074
EDWARD A. & SUSAN E. SANDERS	3999 BALTIMORE PIKE	LITTLESTOWN	PA	17340-
				9573
DAVID H. YANCOSKY	4003 BALTIMORE PIKE	LITTLESTOWN	PA	17340-
				9575
GLORIA BOWERS BURR	104 BOWERS RD	LITTLESTOWN	PA	17340-
	<u> </u>			9468
WILLIAM DELL & DENISE M. CONNELLY	3830 BALTIMORE PIKE	LITTLESTOWN	PA	17340-
VACHALIANA I O LOANINI DELI	2020 DALTIMORE DIVE	LITTIFCTOVAN	D4	9570
WILLIAM L. & JOANN BELL	3820 BALTIMORE PIKE	LITTLESTOWN	PA	17340- 9570
EUGENE E. & DIANE J. ROSS	3815 BALTIMORE PIKE	LITTLESTOWN	PA	17340-
EUGENE E. & DIAINE J. NO33	3013 BALTINORE PIRE	LITTLESTOWN		9571
WILLIAM FRANK WALLS	PO BOX 73	TANEYTOWN	MD	21787-
	10000		""	0073
CHRISTOPHER LORD	149 CALIFORNIA RD	LITTLESTOWN	PA	17340-
				9564
WILLIAM C. HUGHES	65 MOUNTAIN RD	MC VEYTOWN	PA	17051-
				7643
STEVEN A. & CHRISTINE A. BUCKLEY	3737 BALTIMORE PIKE	LITTLESTOWN	PA	17340-
				9530
STEVEN A. & CHRISTINE A. BUCKLEY	3737 BALTIMORE PIKE	LITTLESTOWN	PA	17340-
CTEVEN A G CURICTINE A RUCKIEV	2727 241704025 2005		D.4	9530
STEVEN A. & CHRISTINE A. BUCKLEY	3737 BALTIMORE PIKE	LITTLESTOWN	PA	17340- 9530
ROBERT LEE & SHIRLEY MAE SHAEFFER	35 CALIFORNIA RD	LITTLESTOWN	PA	17340-
ROBERT LEE & SHIRLET WAE SHAEFFER	33 CALIFORNIA RD	LITTLESTOWN		9563
JAMES F. ELLIOT & SAMANTHA DRYBREAD	47 CALIFORNIA RD	LITTLESTOWN	PA	17340-
37 WEST LEEDS & STATE WAS A STATE OF THE STA	TO CHEM CHILITIES	Liviesiowii	' ' '	9563
ROBERT A. HARTLAUB	3720 BALTIMORE PIKE	LITTLESTOWN	PA	17340-
				9799
JOHN H. MC ALISTER	1004 WASHINGTON	WESTMINSTE	MD	21157-
	RD	R	<u></u>	5829
EDWARD E. HARTLAUB	3649 BALTIMORE PIKE	LITTLESTOWN	PA	17340-
			<u> </u>	9679
MELISSA L. MYERS & JACKLYN M. MYERS	3635 BALTIMORE PIKE	LITTLESTOWN	PA	17340-
CTEDUENIC DENNICY///ANIA DOCUMENTICO	224 CDENCED W. I.E.	CDENICED: "" : T	N40	9679
STEPHENS PENNSYLVANIA PROPERTIES LLC	2214 SPENCERVILLE	SPENCERVILLE	MD	20868-
BADDY I CHISE	RD 5285 OXFORD RD	GARDNERS	PA	3014 17324-
BARRY L. GUISE	3203 UAFURU KU	GAUDINERS		9721
PAUL D. & PEGGY A. READ	175 SPEELMAN	LITTLESTOWN	PA	17340-
FAOL D. O. FLOOT A. INEAD	T/2 21 FFFIAIVIA	LATILLESICANIA	<u> </u>	1 1 2 70

Exhibit C

	KLINGER RD			9531
VIRGINIA L. TERRY	145 SPEELMAN	GETTYSBURG	PA	17325-
	KLINGER RD	GETTISEONG	' ' '	8683
WILLIAM T. & DEBORAH C. MARSHALL	205 SPEELMAN	LITTLESTOWN	PA	17340-
	KLINGER RD			9489
LUCRETIA LUCENTE & MICHAEL RUPP	180 SPEELMAN	LITTLESTOWN	PA	17340-
	KLINGER RD			9496
LAWRENCE R. & MARGUERITE R. WOLTZ	240 SPEELMAN	GETTYSBURG	PA	17325-
	KLINGER RD			8682
DAVID A. & CINDY M. BITTINGER	245 SPEELMAN	GETTYSBURG	PA	17325-
	KLINGER RD			8684
RONALD C. & JANE E. HARRISON	388 SPEELMAN	GETTYSBURG	PA	17325-
	KLINGER RD		ļ	8603
JAMES L. & MARILYN R. TRUSS	285 SPEELMAN	GETTYSBURG	PA	17325-
	KLINGER RD		<u> </u>	8684
LAWRENCE L. & BARBARA A. COMBS	90 MEADE DRIVE	GETTYSBURG	PA	17325-
	0011717777			8908
LAWRENCE L. & BARBARA A. COMBS	90 MEADE DRIVE	GETTYSBURG	PA	17325-
ALAN E. C. CUDICTINA A. DUCDEY	440 1105514441110145	CETT/CDUDG		8908
ALAN F. & CHRISTINA A. BUSBEY	448 HOFFMAN HOME	GETTYSBURG	PA	17325-
DDANTA MAYEDS & LEALIT SCHUST	RD 2562 CARRINGTON	FREDERICK	MD	8688
BRANT A. MYERS & LEAH F. SCHUST	2562 CARRINGTON WAY	FREDERICK	MD	21702- 5973
STEPHEN & ANGELIQUE MERKSON	520 HOFFMAN HOME	GETTYSBURG	PA	17325-
STEPTIEN & ANGELIQUE MILIKSON	RD	GETTISBONG	' ^	8687
JUSTIN R. & AMANDA C. MARTIN	540 HOFFMAN HOME	GETTYSBURG	PA	17325-
	RD	02777320770	' ' '	8687
DAVID A. DUTY	525 HOFFMAN HOME	GETTYSBURG	PA	17325-
	RD			8692
LUKE W STUFFLE	545 HOFFMAN HOME	GETTYSBURG	PA	17325-
	RD			8692
GALEN S. SHELLY	487 CALIFORNIA RD	LITTLESTOWN	PA	17340-
				9566
MARY C. FREDERICK	217 MUD COLLEGE RD	LITTLESTOWN	PA	17340-
				9303
EDWARD J. REAVER	521 MUD COLLEGE RD	LITTLESTOWN	PA	17340-
				9720
DONALD G. TITUS	579 HOFFMAN HOME	GETTYSBURG	PA	17325-
54010 4010 6 1/40511 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	RD COLLECT DD	LITTLECTOVA		8692
FARID ADIB & KAREN M. MOUSSA	245 MUD COLLEGE RD	LITTLESTOWN	PA	17340-
EDWARD E 9 MARCARETAL WALLEN	225 MUD COLLECT DD	LITTLECTOVAM	DA.	9303
EDWARD E. & MARGARET N. WALLEN	225 MUD COLLEGE RD	LITTLESTOWN	PA	17340- 9303
IEEEDEVS P. TINA NA NAASONI	236 MUD COLLEGE RD	LITTLESTOWN	PA	17340-
JEFFREY S. & TINA M. MASON	230 MIOD COLLEGE KD	LITTLESTOWN		9216
NICHOLAS R. & CHRISTINE A. DEMAS	71 MILLER RD	LITTLESTOWN	PA	17340-
HIGHOLAS II. & CHRISTINE A. DENIAS	, I WILLEN NO		' ^	9240
			ــــــــــــــــــــــــــــــــــــــ	

TONY A. & BERTHA A. WILLIAMS	339 MUD COLLEGE RD	LITTLESTOWN	PA	17340-
	JJJ WIJ COLLEGE ND		• • • •	9720
LINDSAY R. FROCK	305 MUD COLLEGE RD	LITTLESTOWN	PA	17340-
				9218
CELENA D. WELTY	30 UPDYKE RD	LITTLESTOWN	PA	17340-
LAWRENCE R. & JULIE L. MC LAREN	48 UPDYKE RD	LITTLESTOWN	DA	9211
LAWRENCE R. & JULIE L. MC LAKEN	48 UPDIKE KD	LITTLESTOWN	PA	17340- 9211
GEORGE M. & ROSALIE H. MASON	78 UPDYKE RD	LITTLESTOWN	PA	17340-
			' ' '	9211
DINO & STACEY MINOGLIO	86 UPDYKE RD	LITTLESTOWN	PA	17340-
				9211
BARRY A. & LORETTA J. CLUCK	110 UPDYKE RD	LITTLESTOWN	PA	17340-
JOHN T. & JANET M. ALLAN	116 UPDYKE RD	LITTLESTOWN	PA	9210 17340-
JOHN 1. & JAINET IVI. ALLAIN	TTO OPDIKE KD	LITTLESTOWN	PA	9210
FRED W. LANG	160 UPDYKE RD	LITTLESTOWN	PA	17340-
·				9210
ARTHUR L. & JESSICA M. RATHELL	241 MILLER RD	LITTLESTOWN	PA	17340-
				9213
STEVEN L. & JENNIFER D. RICKETTS	186 UPDYKE RD	LITTLESTOWN	PA	17340-
CURTIS L. & SHERRY L. HAWKINS	224 UPDYKE RD	LITTLESTOWN	PA	9208 17340-
CORTIS L. & SHERRY L. HAWKINS	224 OPDIKE KD	LITTLESTOWN	PA	9209
CURTIS L. & SHERRY L. HAWKINS	224 UPDYKE RD	LITTLESTOWN	PA	17340-
				9209
METROPOLITAN EDISON CO	PO BOX 1911	MORRISTOW	ИЛ	07962-
		N		1911
RONALD W. SMITH INVESTMENT CO, INC.	60 AILERON CT	WESTMINSTE	MD	21157-
ANN E. DE GEORGE & RENATE DE GEORGE	400 MILLER ROAD	LITTLESTOWN	PA	3043 17340-
ANN E. DE GEORGE & RENATE DE GEORGE	400 WILLEN NOAD	LITTLESTOWN	[7	9219
JANET DEWAR	575 GETTYSBURG RD	LITTLESTOWN	PA	17340-
				9771
TOD J. PAYNE	185 GETTYSBURG RD	LITTLESTOWN	PA	17340-
				9322
DONNA M. OHLER	161 GETTYSBURG RD	LITTLESTOWN	PA	17340-
JAMES S. & DORIS CARPENTER	143 GETTYSBURG RD	LITTLESTOWN	PA	9772 17340-
JAMES S. & DOMIS CARPENTER	142 GELLI2BOVG VD	LITTLESTOWN	' ^	9772
CHARLES S. & JACQUELINE A. MOOSE	129 GETTYSBURG RD	LITTLESTOWN	PA	17340-
				9772
MATTHEW E. & TINA CROMWELL	85 GETTYSBURG RD	LITTLESTOWN	PA	17340-
				9772
DANIEL P. & SHERRY L. BARR	4535 BALTIMORE PIKE	LITTLESTOWN	PA	17340-
ROBERT EDWIN BETZ	243 KINDIG RD	LITTLESTOWN	PA	9773 17340-
MODERT EDWIN DETZ	באס אוואטוט אט	LITTLESTOWN	<u> </u>	1/340-

				9601
EMILY A. SHOEY	325 PLUNKERT RD	LITTLESTOWN	PA	17340- 9643
NEIL JAMES CROUSE	202 PLUNKERT RD	LITTLESTOWN	PA	17340- 9426
WADE A. & MARY ANN HARTLAUB	172 PLUNKERT RD	LITTLESTOWN	PA	17340- 9453
MICHAEL S. & LISA A. MC CREA	324 PLUNKERT RD	LITTLESTOWN	PA	17340- 9452
CHRISTINE L. MAXKA	340 PLUNKERT RD	LITTLESTOWN	PA	17340- 9452
MICHAEL F. BOCCABELLO	372 PLUNKERT RD	LITTLESTOWN	PA	17340- 9452
JAMES M. & LORI A. MORLEY	428 PLUNKERT RD	LITTLESTOWN	PA	17340- 9642
BRIAN M. & ERICA PARKER	420 PLUNKERT RD	LITTLESTOWN	PA	17340- 9642
WILLIAM P. & KAREN R. KRINER	430 PLUNKERT RD	LITTLESTOWN	PA	17340- 9642
CHARLES E. & ANNE L. NASON	450 PLUNKERT RD	LITTLESTOWN	PA	17340- 9642
BERTIL G. DANIELSON & DIANE S. DANIELSON	560 PLUNKERT RD	LITTLESTOWN	PA	17340- 9644
TODD R. MC CAUSLIN & ANGELA C. MC CAUSLIN	581 PLUNKERT RD	LITTLESTOWN	PA	17340- 9498
KENT A. GERRICK & GLENDA J. GERRICK	663 PLUNKERT RD	LITTLESTOWN	PA	17340- 9497
BERNARD T. LENHARDT & LINDA V. LENHARDT	875 PLUNKERT RD	LITTLESTOWN	PA	17340- 9482
THOMAS P. DUNCHACK	450 MUD COLLEGE RD	LITTLESTOWN	PA	17340- 9720
PHILLIP R. & CYNTHIA A. HUNT	452 MUD COLLEGE RD	LITTLESTOWN	PA	17340- 9720
JOSEPH M. MARIANO	454 MUD COLLEGE RD	LITTLESTOWN	PA	17340- 9720
IVAN F. & MARLENE K. LUFRIU	458 MUD COLLEGE RD	LITTLESTOWN	PA	17340- 9720
ROGER C. & BARBARA A. STEELE	456 MUD COLLEGE RD	LITTLESTOWN	PA	17340- 9720
RICHARD K. OGG & PATRICIA A. OGG	464 LOCUST LANE	LITTLESTOWN	PA	17340- 9049
WHITNEY J. COMBS OR NANCY LEE COMBS	86 ROBERTS ROAD	LITTLESTOWN	PA	17340

Exhibit D

Property Value Impact Study

PROPERTY VALUE IMPACT STUDY

There is no evidence to indicate a solar project will impact neighboring property values. A 2018 study by Cohn and Resnick, a Chicago-based firm that specializes in property valuation, looked at home sales in proximity to six solar farms in Illinois, Indiana and Minnesota. This report can be found on the following pages in Exhibit D. It found no measurable impact on property values adjacent to solar farms. It is our understanding that specific data on the effect of utility scale solar energy projects on property values has not been collected in the state of Pennsylvania. This is due, in part, to the minimal amount of solar energy installations in the State. Although the data presented was not collected in the state of Pennsylvania, it is reasonable to extrapolate the findings of the report to the project area.







ADJACENT PROPERTY VALUES SOLAR IMPACT STUDY A STUDY OF SIX EXISTING SOLAR FARMS

Located in LaSalle County, Illinois; Frankton, Porter, and Marion Counties, Indiana; and Chisago County, Minnesota

PREPARED FOR:

Ms. Janet Ward Associate Project Manager NextEra Energy Resources

Janet.Ward@nexteraenergy.com

SUBMITTED BY:

CohnReznick, LLP Valuation Advisory Services 200 S Wacker Drive, Suite 2600 Chicago, IL 60606 (312) 508-5900

Andrew R. Lines, MAI Patricia L. McGarr, MAI, CRE, FRICS

September 26, 2018



EXECUTIVE SUMMARY

The purpose of this real estate impact study is to determine whether the existing solar farm use has had any measurable impact on the value of adjacent properties.

According to the Solar Energy Industries Association (SEIA) 2017 statistics, Illinois had 83.8 Megawatts (MW) of solar panels installed as of year-end 2017, compared to Indiana which had 275.6 MW of solar panels installed.

As we are studying the impact of this use on adjacent property values in Illinois, we have only studied established solar farms in the Midwest; this is primarily due to the way soil conditions, climate, and topography differ from region to region and how they contribute to property values.

We have included several of these established solar farms in Illinois, Indiana, and Minnesota, focusing on similar rural and suburban areas with neighboring residential homes, that we believe are comparable to those locations proposed in Illinois. Solar farms with a variety of output capacities have been studied because of the existence of residential homes within close proximity. With sales of these adjacent properties, we are able to analyze the property value trends in similar locations as the proposed solar farms.

Study Features

Our study includes research and analyses of six existing solar panel farms and the property value trends of the adjacent land uses, including agricultural, single family and residential properties; review of published studies, and discussions with market participants, summarized as follows:

- Solar Farm A (North Star Solar Farm) is located near the City of North Branch, in unincorporated Chisago County, Minnesota. The solar farm is a 100 MW solar farm that is situated on approximately 1,000 acres of land and is surrounded by agricultural land uses and some residential uses.
- Solar Farm 1 (Grand Ridge Solar Farm) is located near the City of Streator in LaSalle County, Illinois, in a primarily rural area, on two contiguous parcels totaling 160 acres. Surrounding uses consist of agricultural land, some with homesteads, and single family homes to the northwest. We found one adjoining property that qualified for a paired sales analysis.
- Solar Farm 2 (Portage Solar Farm) is located near the City of Portage, in Porter County, Indiana. This solar farm is situated in a residential area on a 56-acre parcel of land. The surrounding uses consist of agricultural land to the north and east, and residential uses such as single family homes to the west and northwest, and multifamily apartments to the south. We found two adjoining properties that qualified for a paired sales analysis.
- Solar Farm 3 (*IMPA Frankton Solar Farm*) is located in the Town of Frankton, in Madison County, Indiana. This solar farm is situated in a fairly rural area and is located on a 13-acre parcel. The surrounding uses consist of single family homes to the east, agricultural land to the south, west, and north, and some baseball fields as well. We found two adjoining properties that qualified for a paired sales analysis.

CohnReznick 1

- Solar Farm 4 (Dominion Indy Solar Farm III) is located in a suburban, yet rural area outside of Indianapolis, in Marion County, Indiana, on a parcel totaling 134 acres. The surrounding uses consist of agricultural land to the east, west and south, and a single-family subdivision to the north. We found eight adjoining properties that qualified for a paired sales analysis.
- Solar Farm 5 (Valparaiso Solar Farm) is located near the City of Valparaiso, in Porter County, Indiana. This solar farm is situated in a fairly rural area on two contiguous parcels totaling 27.9 acres. The surrounding uses consist of vacant land to the north, and single family homes to the east, south and west. We considered two adjoining properties that qualified for a paired sales analysis.
- We performed a paired sales analysis for each adjoining property that fit the criteria for analysis that were adjacent to the solar farms we studied. The sales adjacent to solar farms, or Test Areas, were compared to agricultural land sales or single family home sales not adjacent to solar farms within the same county or geographical area as the subject solar farms, or Control Areas.
- We analyzed 15 adjoining property sales in Test Areas and 63 comparable sales in Control Areas, collectively, for the Grand Ridge Solar Farm, the Portage Solar Farm, the IMPA Frankton Solar Farm, the Dominion Indy III Solar Farm, and the Valparaiso LLC Solar Farm, over the past five years. We conducted only a qualitative analysis for the North Star solar farm.

Methodology

The basic premise of this comparative analysis is that if there is any impact on the property values, by virtue of their proximity to a solar farm, it would be reflected by such factors as the range of sale prices, differences in unit sale prices, conditions of sale, and overall marketability. When comparing these factors for properties near the solar farm to properties locationally removed from the solar farm, we would expect to see some emerging and consistent pattern of substantial difference in these comparative elements – if, in fact, there was an effect.

Results

Illinois is an emerging Solar Farm market, so there are few existing solar farms to study here. We do note that our studies of facilities of various sizes demonstrate the same conclusions: that there is no measurable and consistent difference in property values for properties adjacent to solar farms when compared to similar properties locationally removed from their influence. This is supported by our interviews with local real estate brokers who have stated that there is no difference in price, marketing periods or demand for the homes directly adjacent to the solar farm facilities in Illinois and Indiana.

We have also reviewed published methodology for measuring impact on property values as well as published studies that specifically analyzed the impact of solar farms on nearby property values. We have also interviewed market participants, including County and Township Assessors, to give us additional insight as to how the market evaluates farm land and single family homes with views of the solar farm. These studies found little to no measurable and consistent difference in value between the Test Area Sales and the Control Area Sales attributed

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to the proximity to solar farms and are generally considered a compatible use. Considering all of this information, we can conclude that since the Adjoining Property Sales (Test Area Sales) for the existing solar farms analyzed were not adversely affected by their proximity to solar farms, that properties surrounding other solar farms operating in compliance with all regulatory standards will similarly not be adversely affected, in either the short or long term periods.



September 26, 2018

Ms. Janet Ward Associate Project Manager NextEra Energy Resources

Janet.Ward@nexteraenergy.com

SUBJECT:

Property Value Impact Study

Six Solar Farms

Located in LaSalle County, Illinois; Frankton, Porter, and Marion Counties, Indiana; and Chisago

County, Minnesota

Dear Ms. Ward:

CohnReznick is pleased to submit the accompanying adjacent property values impact study of the above referenced subject properties. Per the client's request, we have researched one solar farm in Illinois: Grand Ridge in LaSalle County (Solar Farm 1). We have also researched four solar farms in Indiana: Portage Solar Farm in Porter County (Solar Farm 2), IMPA Frankton Solar Farm in Madison County (Solar Farm 3), Dominion Indy Solar III Farm in Marion County (Solar Farm 4), and Valparaiso Solar LLC Farm in Porter County (Solar Farm 5). One additional solar farm in Minnesota, the North Star Solar Farm in Chisago County (Solar Farm A), was also researched.

In forming this report, we have researched and visited the existing solar farms in Illinois and Indiana, researched articles and other published studies, and interviewed real estate professionals and Township Assessors, active in the market where solar farms are located, to gain an understanding of market perceptions.

The purpose of the assignment is to determine whether the proximity of the subject facilities (solar farms) resulted in any significant measurable and consistent impact on adjacent property values, given the existing uses and zoning of nearby property at the time of development. The intended use of our findings and conclusions is to address local concerns regarding a solar farm's potential impact on surrounding property values. We have not been asked to value any specific property, and we have not done so.

The client and intended user for the assignment is NextEra Energy Resources. The report may be used only for the aforementioned purpose and may not be distributed without the written consent of CohnReznick LLP ("CohnReznick").

The assignment is intended to conform to the Uniform Standards of Professional Appraisal Practice (USPAP), the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute as well as applicable state appraisal regulations.

Based on the analysis in the accompanying report, and subject to the definitions, assumptions, and limiting conditions expressed in the report, our findings follow below.



CONCLUSIONS

We analyzed 15 adjoining property sales and 63 comparable sales, collectively, for the Grand Ridge Solar Farm, the Portage Solar Farm, the IMPA Frankton Solar Farm, the Dominion Indy III Solar Farm, and the Valparaiso LLC Solar Farm, over the past five years. We note that proximity to the solar farms has not deterred sales of nearby agricultural land and residential single family homes nor has it deterred the development of new single family homes on adjacent land.

No empirical evidence evolved that indicated a more favorable real estate impact on the Control Area Sales as compared to the adjoining, Test Area Sales with regard to such market elements as:

- 1. Range of sale prices
- 2. Differences in unit sale prices
- 3. Conditions of sale
- 4. Overall marketability
- 5. New Development
- Rate of Appreciation

We have also reviewed published methodology for measuring impact on property values as well as published studies that specifically analyzed the impact of solar farms on nearby property values. We have also interviewed market participants, including Township Assessors, to give us additional insight as to how the market evaluates farm land and single family homes with views of the solar farm.

These studies found little to no measurable and consistent difference in value between the Test Area Sales and the Control Area Sales attributed to the proximity to solar farms and are generally considered a compatible use. Considering all of this information, we can conclude that since the Adjoining Property Sales (Test Area Sales) for the existing solar farms analyzed were not adversely affected by their proximity to solar farms, that properties surrounding other solar farms operating in compliance with all regulatory standards will similarly not be adversely affected, in either the short or long term periods.



If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Very truly yours,

CohnReznick, LLP

Andrew R. Lines, MAI

Principal

Certified General Real Estate Appraiser

Illinois License No. #553.001841

Expires 9/30/2019

Expires 4/16/2021

Patricia L. McGarr, MAI, CRE, FRICS

Patricio & Mcyars

National Director - Valuation Advisory Services

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Expires 9/30/2019

Indiana License No. #CG49600131

Expires 6/30/2020

Sonia K. Singh Senior Manager Certified General Real Estate Appraiser VA License No. #4001017615 Expires 3/31/2020 DC License No. #GA2002063 Expires 2/28/2020 MD License No. #33217



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SCOPE OF WORK

CLIENT

NextEra Energy Resources

INTENDED USERS

NextEra Energy Resources; other intended users may include the client's legal and accounting site development professionals.

INTENDED USE

The intended use of our findings and conclusions is to address local concerns regarding a solar farm's potential impact on surrounding property values. The report may be used only for the aforementioned purpose and may not be distributed without the written consent of CohnReznick LLP ("CohnReznick").

PURPOSE

The purpose of this report is to address local concerns regarding a solar farm use having a perceived impact on surrounding property values, and provide a consulting report that can be submitted to municipal planning departments for the purposes of addressing the required criteria for obtaining approvals for proposed solar energy sites.

EFFECTIVE DATE

September 26, 2018

DATE OF REPORT

September 26, 2018

PRIOR SERVICES

USPAP requires appraisers to disclose to the client any services they have provided in connection with the subject property in the prior three years, including valuation, consulting, property management, brokerage, or any other services.

This report is a compilation of the Solar Farms which we have studied over the past year, and is not evaluating a specific subject site. In this instance, there is no "subject property" to disclose.



INSPECTION

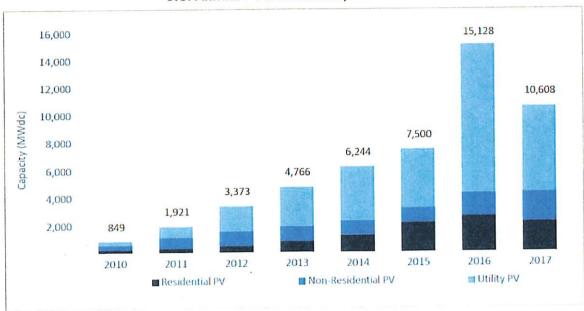
Patricia L. McGarr has performed an inspection of the exterior of the properties that are the subject of this impact study on various dates in October 2017 and in early 2018. The inspections were conducted via public rights of way.

Patricia L. McGarr, MAI, Andrew R. Lines, MAI, and Sonia K. Singh have viewed the exterior of all comparable data referenced in this report in person, via photographs, or aerial imagery.



OVERVIEW OF SOLAR DEVELOPMENT

Photovoltaic (PV) cell installations, commonly known as solar cells, increased almost exponentially over the past ten years in the United States as technology and the economic incentives (Solar Investment Tax Credits or ITC) made the installation of solar farms economically reasonable. A majority of these solar farm installations come from larger-scale solar farm developments for utility purposes. The charts below portray the increases of the solar installations in the US as a whole, on an annual basis, historically, courtesy of Solar Energy Industries Association (SEIA) and GTM Research.



U.S. Annual PV Installations, 2010 - 2017

The year 2017 was a transitional year for the solar market. Residential and utility PV both saw installations fall on an annual basis for the first time since 2010, marking a "reset" year for both segments. Meanwhile, the non-residential PV segment was the only market to experience growth in 2017. For residential PV, the downturn in 2017 stems from segment-wide customer acquisition challenges that are constraining growth across most major state markets. Amidst other variables such as loss of state incentives, and competitive landscape trends, there are concerns about the relationship between increasing customer penetration and low installation growth as the pool of attractive early-adopter customers grows increasingly thin in certain markets. While the relationship between market penetration and growth does not fully explain the market downturn, industry experts believe it is increasingly becoming a factor in constraining growth amongst major state markets.

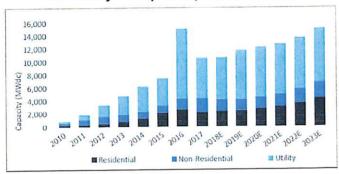
Meanwhile, the year-over-year downturn for utility PV in 2017 was largely expected, due to the massive influx of projects trying to leverage the 30% federal Investment Tax Credit (ITC) in 2016. However, uncertainty surrounding the Section 201 tariffs caused many projects to be shelved in 2017, while other cancellations and interconnection delays resulted in many projects spilling over into 2018.



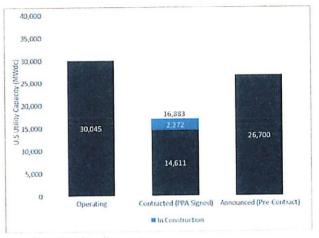
Both closing regulatory windows, and the realization of a robust community-solar pipeline, drove substantial growth in non-residential solar in 2017. This is the second consecutive year for such growth after the space essentially remained flat from 2012-2015.

The pipeline for Utility PV, as of year-end 2017 includes capacity of 43,583 combined from contracted and under construction as well as announced but pre-contract sources, as seen below. This new capacity represents a 45% increase over current operational capacity.

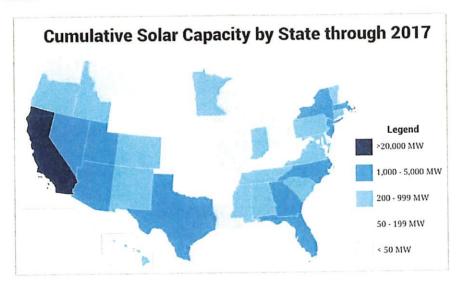
U.S. Utility PV Pipeline (Year End 2017)



U.S. PV Installation Forecast, 2010 - 2023E



Nearly 250,000 Americans work in the solar industry. The cost to install solar panels has dropped nationally by 70% since 2010, which has been one cause that led to the increase in installations. The map below portrays solar capacity by state.



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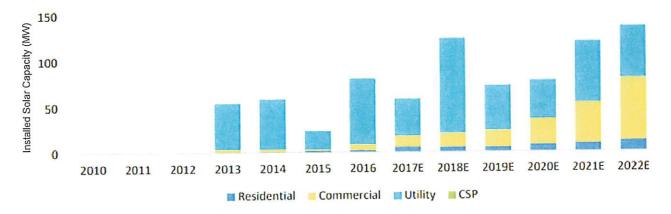
Illinois has recently picked up investment in solar installations. According to the SEIA, there was \$230.62 million invested in solar as of year-end 2017 and \$27.52 million invested in 2017 alone, reflecting nearly a 50% increase in annual investment in comparison to 2016. Illinois was ranked 41st in the nation by the SEIA in 2017. Although, Illinois is near the bottom of states with solar production, it ranked 20th in solar jobs in 2017.

Illinois Annual Solar Installations



The state of Indiana has clearly seen a significant uptick in solar investments. According to the Solar Energy Industries Association (SEIA), \$438.09 million invested in solar as of year-end 2017 and \$79.75 million invested in 2017 alone. The increase in solar investments is due to the falling costs of installations. According to the SEIA, solar prices have declined by 52% over the past five years in the state. Currently, solar energy powers 32,000 Indiana homes with 275.6 MW of solar installed. Indiana ranks in the middle of the pack comparatively to other states, at 27th.

Indiana Annual Solar Installations



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MARKET ANALYSIS OF THE IMPACT ON VALUE FROM SOLAR FARMS

METHODOLOGY

According to Randall Bell, PhD, MAI, author of text *Real Estate Damages*, published by the Appraisal Institute in 2016, the paired sales analysis is an effective method of determining if there is a detrimental impact on surrounding properties.

"This type of analysis may compare the subject property or similarly impacted properties called **Test Areas** (at Points B, C, D, E, or F) with unimpaired properties called **Control Areas** (Point A). A comparison may also be made between the unimpaired value of the subject property before and after the discovery of a detrimental condition. If a legitimate detrimental condition exists, there will likely be a **measurable and consistent difference** between the two sets of market data; if not, there will likely be no significant difference between the two sets of data. This process involves the study of a group of sales with a detrimental condition, which are then compared to a group of otherwise similar sales without the detrimental condition."

As an approved method, this technique can be utilized to extract the effect of a single characteristic on value. By definition, paired data analysis is "a quantitative technique used to identify and measure adjustments to the sale prices or rents of comparable properties; to apply this technique, sales or rental data on nearly identical properties is analyzed to isolate a single characteristic's effect on value or rent." The text further describes that this method is theoretically sound when an abundance of market data is available for analysis. It may be impractical for those property types that do not frequently sell, such as commercial properties. The Appraisal of Real Estate states that the lack of data can reduce the strength of the analysis, and that "an adjustment derived from a single pair of sales is not necessarily indicative" of the value of the single difference.

We also utilized a Trend Analysis to adjust our comparable Control Sales to a constant valuation date, the date of the Test Area sale. According to the *Dictionary of Real Estate Appraisal, 6th edition*, a Trend Analysis is defined as:

"A quantitative technique used to identify and measure trends in the sale prices of comparable properties; useful when sales data on highly comparable properties is lacking but a broad database on properties with less similar characteristics is available. Market sensitivity is investigated by testing various factors that influence sale prices."

We utilized a Trend Analysis to adjust the Control Sales for market conditions (the time between sales), as this is a variable that affects all properties similarly and can be adjusted for. Given the reduced amount of sale data and sales with highly similar characteristics to the Test Area sales, we concluded that adjusting only for market conditions is reasonable as this is explainable by a linear regression analysis, a form of Trend Analysis. This involved plotting our Control Sales unit sale prices against their sale dates and plotting a "Line of Best Fit" to



¹ Bell, Randall, PhD, MAI. Real Estate Damages. Third ed. Chicago, IL: Appraisal Institute, 2016.

² The Appraisal of Real Estate 14th Edition. Chicago, IL: Appraisal Institute, 2013.

explain market condition trends. We extracted a monthly appreciation rate for each set of Control Sales and applied that to each respective grouping to normalize the sales to a common valuation date.

PUBLISHED STUDIES

We have also considered various studies that consider the impact of solar farms on surrounding property values. The studies range from survey-based formal research to less formal analyses.

The studies show that over the past decade, the solar industry has experienced unprecedented growth. Among the factors contributing to its growth were government incentives, significant capacity additions from existing and new entrants and continual innovation. The incentives made the solar photovoltaic (PV) industry economically attractive for many consumers and as a result, set the conditions for the boom. A significant amount of farmland trades have been to solar developers, transaction prices for these deals were reported to be between 30 to 50 percent above normal agricultural land prices in 2016. Clean Energy Trends, a publication developed by Clean Edge, reported in 2013 that investments in new capacity of solar farms increased from approximately \$3 billion USD in 2000 to approximately \$91 billion USD in 2013, just short of the record of \$92 billion USD in 2011. Solar PV installations increased from 31 Gigawatts (GW) in 2012 to a record of approximately 37 GW in 2013. As a result, annual solar PV installations exceed annual wind installations for the first time. Before 2011, annual wind installations were double annual solar PV installations.

Solar farms offer a wide array of economic and environmental benefits to surrounding properties. Unlike other energy sources, solar energy does not produce emissions that may cause negative health effects or environmental damage. Solar farms produce a lower electromagnetic field exposure than most household appliances, such as TV and refrigerators, and studies have confirmed there are no health issues related to solar farms. The Solar Foundation measured that the solar industry employed 22 percent more workers in the period from 2013 to 2015. Solar farm construction in rural areas has also dramatically increased the tax value of the land on which they are built, which has provided a financial boost to some counties. According to Duke University's Center on Globalization, Governance, and Competitiveness ("DUCGCC"), a study of solar projects in North Carolina indicated despite the 80% tax abatement, the taxable value of a parcel with a solar farm is significantly larger than the taxable value of that same land under agricultural zoning.

Beyond creating jobs, solar farms are also benefiting the overall long-term agricultural health of the community. As explained by ReThink Energy, a conservation foundation, a typical solar farm has more than two-thirds of the field left open and uncovered by solar panels. This unused land, and also all the land beneath the solar panels, will be left to repair naturally. In the long run this is a better use of land since the soil is allowed to recuperate instead of being ploughed and fertilized year in and year out.



^{3 &}quot;Electromagnetic Field and Public Health." Media Centre (2013): 1-4. World Health Organization.

A solar farm can greatly increase the value of land, offering some financial security for the property owner over 20 to 25 years. Once solar panel racking systems are removed, the land can revert to its original use.⁴

Studies have also noted that the installation of utility-scale solar on a property has no negative impact on adjoining property's value. According to a report titled "Mapleton Solar Impact Study" from Kirkland Appraisals, LLC, conducted in Murfreesboro, North Carolina in September 2017, the study found that the proposed solar farm had no impact to adjacent vacant residential, agricultural land, or residential homes. The adjoining land for the paired data sales analysis in the report was primarily low density residential and agricultural uses, although there was one case where the solar farm adjoined to two dense subdivisions of homes.

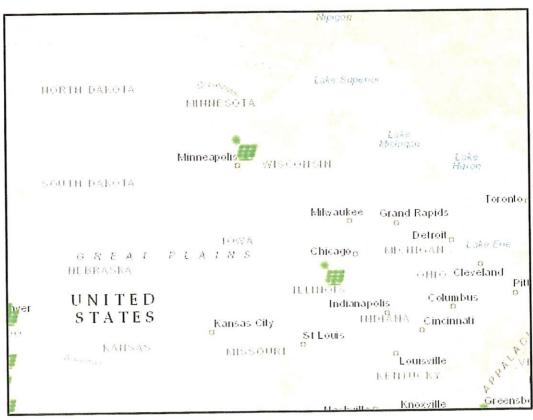
⁴ NC State Extension. (May 2016). Landowner Solar Leasing: Contract Terms Explained. Retrieved from: https://content.ces.ncsu.edu/landowner-solar-leasing-contract-terms-explained



ADJACENT PROPERTY VALUES IMPACT STUDY

We have studied established solar farms in the Midwest specifically, because of the way that regional soil conditions, climate, and topography contribute to property values and their potential for impact on property values. Large installation of solar panels is limited in the Midwestern United States.

Through December 2016, there have been only two major installations in the Midwest: North Star Solar in Chisago County, Minnesota and Grand Ridge Solar in LaSalle County, Illinois. A map illustrating existing solar farms greater than 15 MW is presented below, courtesy of open source data retrieved from the Energy Information Administration (EIA).



In our analysis of existing solar farms, we have included both of these on the following pages. We have chosen to study the North Star solar farm in Minnesota because of its large size, which is less common, and because it is also situated in the Midwest. We also analyzed one other solar farm in Illinois and four in Indiana.

In total, we identified six solar farms to study with comparable sales where generally the only difference was the attribute under study: proximity to a solar farm.

Ownership and sales history for each adjoining property to an existing solar farm through the effective date of this report is maintained within our workfile. Adjoining properties with no sales data or that sold prior to the development of the solar farm were excluded from further analysis. Adjoining properties that sold during

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construction were not considered for a paired sales analysis because the impact of being proximate to the solar farm could not be differentiated from the impact of the construction. Adjoining properties that sold in a non-arm's length transaction (such as a transaction between related parties, bank-owned transaction, or between adjacent owners) were excluded from analysis as these are not considered to be reflective of market price levels. The adjoining properties that remained after exclusions were considered for a paired sale analysis.

The difference in price is considered to be the impact of the proximity to the solar farm. Two types of paired sales analyses were considered based on the availability of data:

- Comparing sales of adjoining properties prior to the announcement of the solar farm to sales of adjoining properties after the completion of the solar farm.
- Comparing sales of adjoining properties after the completion of the solar farm to sales of comparable properties that are proximate to solar farms, but not adjoining to them.

We have considered only one type of paired sales analysis, which was comparing sales of properties proximate to the solar farm (Control Area) to the sales of adjoining properties after the completion of the solar farm project (Test Area). We were unable to compare any sales of adjoining properties that occurred prior to the announcement of the solar farm with the sales of the adjoining properties after the completion of the solar farm project as there were no adjoining properties that sold prior to the announcement of the solar farm, within a reasonable period of time.

We have found Control Area sales data through the Northern Illinois Multiple Listing Service (MLS), Zillow, the Indiana Gateway Sales Disclosure Form website, and the Land Sales Bulletin for Illinois and Indiana, and verified these sales through county records, conversations with brokers, and the County Assessor's office. It is important to note that these Control Area Sales are not adjoining to any solar farm, nor do they have a view of a solar farm from the property. Therefore, the announcement nor the completion of the solar farm use could not have impacted the sales price of these properties.

To make direct comparisons, the sale price of the Control Area sales will need to be adjusted for market conditions to a common date. In this analysis, the common date is the date of the Adjoining Property Sale after the completion of the solar farm. After adjustment, any measurable difference between the sale prices would be indicative of a possible price impact of the solar farm, if any.

We conducted a qualitative analysis of the North Star Solar Farm in Minnesota given differences in geographical location. For the remaining five existing solar farms in Illinois and Indiana, a summary of the analyses completed for each of solar farms studied is presented on the following pages is. Detail of these analyses is retained within our workfile.



SOLAR FARM A: NORTH STAR SOLAR FARM, CHISAGO COUNTY, MN

Location: North Star Solar Farm in Chisago County, MN

Coordinates: Latitude 45.47, Longitude -92.91

PIN: Multiple

Owner of Record: Renewable Energy Asset Co, L.L.C.

Total Land Size: ±1,000 Acres

Date Project Announced: 2014

Date Project Completed: October, 2016

Output: 100 MW AC

This solar farm is located approximately four miles southeast of the City of North Branch in unincorporated Chisago County, near the intersection of Route 69 and Route 72. The solar farm was developed by North Star and is the largest solar farm in the Midwest. The solar facility consists of 440,000 solar panels and the project has a power output capacity of 100 MW, enough to power 20,000 homes. The solar farm has agricultural land to the north and west. To the south and east of the project there are a number of residential properties, some nestled within the actual solar farm, surrounded on every side.



Due to limited transaction data, we conducted a qualitative study of the potential impact of the solar farm on neighboring properties. After speaking with six local real estate brokers familiar with the area, we conclude that there has been no discernable impact, positive or negative, on properties surrounding the solar farm. Candace Rindahl of ReMax Results, a real estate broker with 16 years of experience in the area, said that she has been in most of the homes surrounding the solar farm and personally sold two of them. She reported that the neighboring homes sold at market rates comparable to other homes in the area not influenced by the solar farm, and they sold within 45 days of offering, at the end of 2017, which was in line with the market.

The developer of the solar farm acquired four homes along 367th Street, which are surrounded by the solar arrays. According to conversations with the developer, they purchased the homes prior to development for above-market prices, and subsequently sold all four homes after development to new buyers at market levels, with the exception of one home that was actually purchased by the original owner. This indicates that the development of the North Star Solar Farm <u>did not deter transactions nor affect sale prices</u> in the surrounding area.



SOLAR FARM 1: GRAND RIDGE SOLAR FARM, STREATOR, IL

Location: Grand Ridge Solar Farm in LaSalle County, IL

Coordinates: Latitude 41.143421, Longitude -88.758340

PINs: 34-22-100-000, 34-22-101-000

Total Land Size: 160 acres

Date Project Announced: December 31, 2010

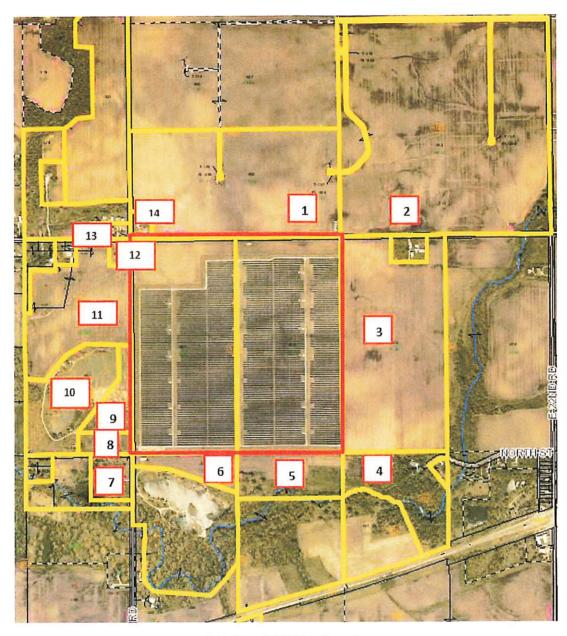
Date Project Completed: July 2012

Output: 23 MW DC (20 MW AC)

This solar farm is located at the southeast corner at the intersection of 21st and 15th Roads. The solar farm was developed by Invenergy and is considered to be one of the largest renewable energy centers in the world. It includes a 210 MW wind farm, 20 MW AC project solar and 1.5 MW advanced-energy storage project all in one location. The solar facility consists of twenty individual 1 MW solar inverters and over 155,000 photovoltaic modules supplied by General Electric. The solar farm has vacant agricultural land to the north and east, and natural vegetation to the east and south. The solar plant is located adjacent to Invenergy's wind farm.

Real Estate Tax Info: Prior to development of the solar farm, during the period between 2009 and 2011, this 160-acre farm paid real estate taxes of about \$1,500 per 80-acre parcel (\$3,000 per year in total). In the 5 years since the solar farm has been operating, the real estate taxes have increased to about \$1,600 per acre (\$255,000 per year in total). The map on the following page displays the parcels within the solar farm is located (outlined in red). Properties adjoining this parcel are numbered for subsequent analysis.





Solar Farm 1 Adjoining Properties

Adjoining Property 12 (Test Area) was considered for a paired sales analysis, and we analyzed this property as a single-family home use. We analyzed five Control Area single family home sales on similar lot sizes that sold within a reasonable time frame from the sale date of Adjoining Property 12, and adjusted the Control Area sales for market conditions using a regression analysis to identify the appropriate monthly market conditions adjustment. The result of our analysis for Solar Farm 1 is presented below.

CohnReznick Paired Sale Analysis - Solar Farm 1					
	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF			
Control Area Sales (5)	No: Not adjoining solar farm	\$74.35			
Adjoining Property 12 (Test Area)	Yes: Solar Farm was completed by the sale date	\$79.90			
Difference		7.46%			

The unit sale price of Adjoining Property 12 was slightly higher than the median adjusted unit sale price of the Control Sales.

We contacted the selling broker, Tina Sergenti with Coldwell Banker, and were told that the proximity of the solar farm had no impact on the marketing time or selling price of the property.

<u>Noting no negative price differential</u>, it does not appear that Solar Farm 1 impacted the sales price of Adjoining Property 12. This was confirmed by the real estate agent who marketed and sold this home.



SOLAR FARM 2: PORTAGE SOLAR FARM, PORTAGE TOWNSHIP, IN

Location: Portage Solar Farm in Porter County, IN

Coordinates: Latitude 41.333263, Longitude -87.093015

PIN: 64-06-19-176-001.000-015

Recorded Owner: PLH Inc

Total Project Size: 56 AC

Date Project Announced: February 2012

Date Project Completed: September 2012

Output: 1.5 MW DC (1.96 MW AC)

This solar farm is located on the south side of Robbins Road, located just outside the City of Portage. The solar farm was developed by Ecos Energy, who is a subsidiary of Allco Renewable Energy Limited. This solar farm is ground mounted has the capacity for 1.5 Megawatts (MW) of power, which is enough to power 300 homes. This solar farm consists of 7,128 solar modules which are of a fixed tilt installation, and contains three inverters. The solar farm is fenced from adjacent properties by a fence that surrounds all of the solar panels. Natural vegetation borders the western and northern sides of the solar farm.

Real Estate Tax Info: The 56 acres of farm land was paying \$1,400 per year in taxes. After the solar farm was developed, only 13 acres (23% of the site) was reassessed and the remaining 43 acres continued to be farmed. The total real estate tax bill increased to \$16,350 per year after the solar farm was built, including both uses on the site. This indicates that the real estate taxes for the solar farm increased from \$25 per acre to \$1,175 per acre after the solar farm was developed. The map on the following page displays the parcels within the solar farm is located (outlined in red). Properties adjoining this parcel are numbered for subsequent analysis.





Solar Farm 2 Adjoining Properties



Solar Farm 2 Adjoining Properties

Adjoining Properties 1 and 7 (Test Areas) were each considered for a paired sales analysis. Adjoining Property 1 was analyzed as homestead/small farm land tract since at the time of purchase the site was used as agricultural land. The buyer bought it as vacant land and subsequently built a home on site. Adjoining Property 7 was analyzed as a single-family home use.

For Adjoining Property 1, we analyzed nine Control Area homestead/small farm land tract sales that sold within a reasonable time frame from Adjoining Property 1's sale date. For Adjoining Property 7, we analyzed seven Control Area single family home sales that sold within a reasonable time frame from Adjoining Property 7's sale date. All Control area sales were adjusted for market conditions using regression analysis to identify the appropriate monthly market conditions adjustment.

The result of our analyses for Solar Farm 2 is presented below.

CohnReznick Paired Sale Analysis - Solar Farm 2				
	Potentially Impacted by Solar Farm	Adjusted Median Price Per Acre		
Control Area Sales (9)	No: Not adjoining solar farm	\$7,674		
Adjoining Property 1 (Test Area)	Yes: Solar Farm was completed by the sale date	\$8,000		
Difference		4.25%		

CohnReznick Paired Sale Analysis - Solar Farm 2			
	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF	
Control Area Sales (7)	No: Not adjoining solar farm	\$84.27	
Adjoining Property 7 (Test Area)	Yes: Solar Farm was completed by the sale date	\$84.35	
Difference		0.10%	

Noting the relatively small price differential, with both adjacent sales (Adjoining Property 1 or 7) having higher unit sale prices than the Control Area sales, it does not appear that Solar Farm 2 had any negative impact on adjacent property values.

SOLAR FARM 3: IMPA FRANKTON SOLAR FARM, FRANKTON, IN

Location: IMPA Frankton Solar Farm in Madison County, IN

Coordinates: Latitude 40.125701; Longitude -85.4626.88

PIN: 48-08-06-500-012.001-020

Recorded Owner: IMPA

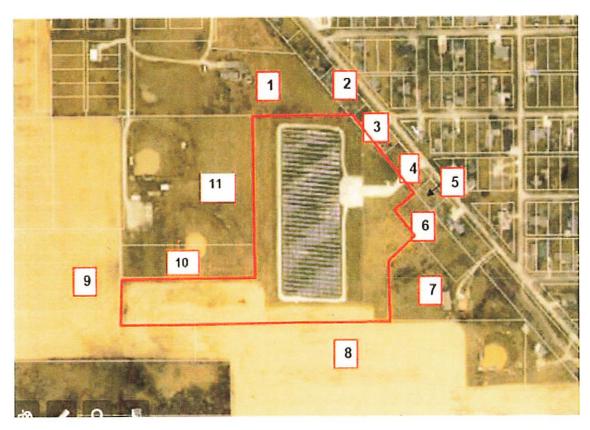
Total Land Size: 13 acres

Date Project Announced: November 2013

Date Project Completed: June 2014

Output: 1.426 MW

This solar farm is located on the west side of South Lafayette Street, located in the Town of Frankton. IMPA Frankton Solar Farm was built in 2014 in joint effort by Inovateus Solar and Indian Municipal Power Agency (IMPA). This solar farm has the capacity for 1 MW and its expected annual output is 1,426 MWh (megawatt hours). The solar farm is separated off from their adjacent properties by a 6' fence that surrounds the entirety of the solar panels. From our inspection of the site we note that the driveway to access the panels slopes downward and allows some views of the site. The map on the following page displays the parcels within the solar farm is located (outlined in red). Properties adjoining this parcel are numbered for subsequent analysis.



Solar Farm 3 Adjoining Properties

Adjoining Properties 2 and 7 (Test Areas) were each considered for a paired sales analysis. Adjoining Property 2 was manufactured single family home use. Adjoining Property 7 was analyzed as a single-family home use.

For Adjoining Property 2, we analyzed six Control Area sales that sold within a reasonable time frame from Adjoining Property 2's sale date. For Adjoining Property 7, we analyzed five Control Area sales that sold within a reasonable time frame from Adjoining Property 7's sale date. All Control area sales were adjusted for market conditions using regression analysis to identify the appropriate monthly market conditions adjustment.

The result of our analyses for Solar Farm 3 is presented below.

CohnReznick Paired Sale Analysis - Solar Farm 3				
	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF		
Control Area Sales (6)	No: Not adjoining solar farm	\$28.42		
Adjoining Property 2 (Test Area)	Yes: Solar Farm was completed by the sale date	\$28.58		
Difference		0.56%		

CohnReznick Paired Sale Analysis - Solar Farm 3			
	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF	
Control Area Sales (5)	No: Not adjoining solar farm	\$51.47	
Adjoining Property 7 (Test Area)	Yes: Solar Farm was completed by the sale date	\$52.40	
Difference		1.81%	

Noting the relatively small price differential, in which both Adjoining Property Sales 2 and 7 sold at a slightly higher unit sale price that the Control Area Sales, it does not appear that Solar Farm 3 had any negative impact on adjoining property sales.

SOLAR FARM 4: DOMINION INDY SOLAR III, INDIANAPOLIS, IN

Location: Dominion Indy Solar III, in Indianapolis, Marion County, IN

Coordinates: Latitude 39.3914.16, Longitude -86.153485

PIN: 49-13-13-113-001.000-200

Recorded Owner: PLH Inc

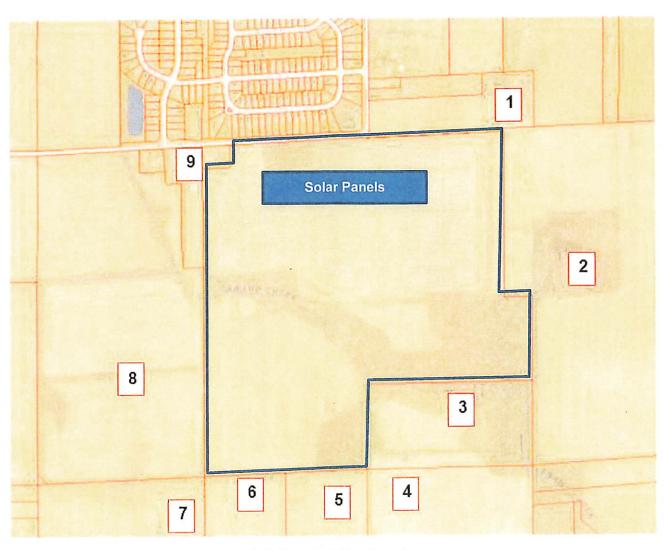
Total Land Size: 134 acres

Date Project Announced: August 2012

Date Project Completed: December 2013

Output: 11.9 MW DC (8.6 MW AC)

This solar farm is located on the southern side of West Southport Road, located approximately eight and a half miles from the heart of Indianapolis. The solar farm was developed by Dominion Renewable Energy. This solar farm is ground mounted has the capacity for 11.9 Megawatts (MW) of power. The panels are mounted in a fixed tilt fashion and there are 12 inverters in this solar farm. The solar farm is lined by a chain link fence that surrounds all of the solar panels. Additionally, there are some natural bushes and trees on all sides of the property; this vegetation has been in place since before development of the solar farm. The maps on the following pages display the parcels within the solar farm is located (outlined in blue). Properties adjoining this parcel are numbered for subsequent analysis.



Solar Farm 4 Adjoining Properties

We identified a total of eight adjoining properties that were considered for a paired sale analysis. Adjoining Property 2 (Test Area) was analyzed agricultural land. Adjoining Properties 11, 13, 14, 18, 20, 22, and 24 were analyzed as single-family home uses.

Adjoining Property 2 was a vacant agricultural parcel and we identified and analyzed four Control Area Sales that were comparable in location and use. The Control Area Sales for Adjoining Property 2 are land tracts that were larger than 20 acres and utilized specifically as farmland. We excluded sales between related parties, split transactions, and those with significant improvements.

Control Area sales for Adjoining Property 2 were adjusted for market conditions using a regression and trend analysis to identify the appropriate monthly market condition adjustment. Using the sale data published in the

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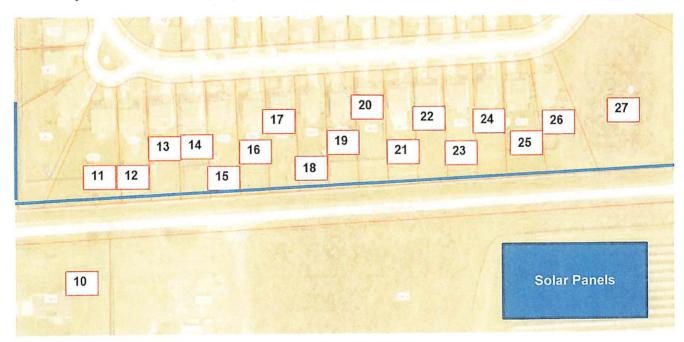


Land Sales Bulletin, from January 2016 through December 2017, which includes reliable and credible data for analysis, we extracted a monthly rate of change of 0.50%. The results of our analysis for Adjoining Property 2 for Solar Farm 4 is presented below.

Act	Land	Matci	hed Pa	ir Anal	VSIS

CohnReznick Paired Sale Analysis - Solar Farm 4					
	Potentially Impacted by Solar Farm	Adjusted Median Price Per Acre			
Control Area Sales (4)	No: Not adjoining solar farm	\$8,091			
Adjoining Property 2 (Test Area)	Yes: Solar Farm was completed by the sale date	\$8,210			
Difference		1.47%			

<u>Crossfield Subdivision</u>: The remaining seven of the Adjoining Properties (Test Areas) were considered for a paired sales analysis consisted of single-family home. The adjoining properties that were included in our paired sales analysis were divided into two groupings, based on the sale dates of the Control Sales, as detailed below.



Solar Farm 4 Adjoining Properties



Group	Adj. Property #	Address	Sa	le Price	Site Size (AC)	Beds	Baths	Year Built	Square Feet	Sale date	ſ	PSF
1	11	5933 SABLE DR	\$	140,000	0.31	3	1.5	2006	2412	12/9/2015	\$	58.04
2	13	5921 SABLE DR	\$	160,000	0.24	4	1.5	2006	2412	9/6/2017	\$	66.33
2	14	5915 SABLE DR	\$	147,000	0.23	3	2.5	2009	2028	5/10/2017	\$	72.49
2	18	5841 SABLE DR	\$	149,000	0.23	3	2.5	2009	1962	10/3/2017	\$	75.94
1	20	5829 SABLE DR	\$	131,750	0.23	4	2.5	2011	2190	12/9/2015	\$	60.16
1	22	5813 SABLE DR	\$	127,000	0.23	4	1.5	2005	2080	3/4/2015	\$	61.06
1	24	5737 SABLE DR	\$	120,000	0.23	3	2.5	2010	2136	2/3/2014	\$	56.18

For Group 1 (Sales in 2014 - 2015), we analyzed eight Control Area sales that sold within a reasonable time frame from the average sale date of the Group 1 Test Area sales. For Group 2 (Sales in 2017), we analyzed a separate grouping of nine Control Area sales that sold within a reasonable time frame from the average sale date of the Group 2 Test Area sales.

Control Area sales in Groups 1 and 2 were adjusted for market conditions using a regression analysis to identify the appropriate monthly market condition adjustment. The results of our study are presented below:

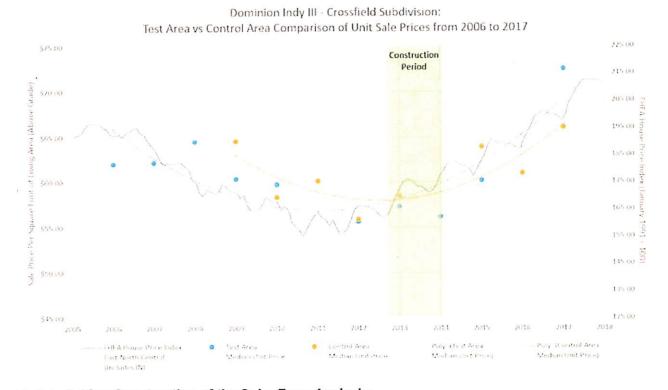
CohnReznick Pair	ed Sale Analysis Potentially Impacted by Solar Farm	- Solar Farm 4 Adjusted Median Price Per SF
Control Area Sales (8)	No: Not adjoining solar farm	\$57.84
Group 1 (Test Area)	Yes: Solar Farm was completed by the sale date	\$59.10
Difference		2.18%

CohnReznick Paired Sale Analysis - Solar Farm 4				
	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF		
Control Area Sales (9)	No: Not adjoining solar farm	\$71.52		
Group 2 (Test Area)	Yes: Solar Farm was completed by the sale date	\$72.49		
Difference		1.36%		

Noting the relatively small price differential, in which the Test Area Sales were slightly higher than the median for the Control Areas Sales, it does not appear that Solar Farm 4 had any negative impact on adjoining property values. In addition, the homes in both groups were appreciating at consistent rates.

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Before & After Construction of the Solar Farm Analysis:

- 21 Test area sales were identified from 2006 to 2017 and 38 Control area sales were identified from 2008 to 2017.
 - The Test area sales are located adjoining to the Dominion Indy III Solar Farm in the Crossfield subdivision.
 - > The Control area sales are located in the remainder of the Crossfield subdivision.
- In both the Test (BLUE) and Control (ORANGE) areas, new construction homes sold through 2011, prior to announcement of the solar farm.
- The dotted lines are polynomial trend lines plotted by Microsoft Excel in order to illustrate and approximate the "average" trend of each set of data. After construction of the solar farm, in parallel with the improving economic climate, it appears that unit prices for both the test and control areas appreciated at a similar rate over the period from 2013 to 2017. A difference in appreciation rates does not appear to exist between homes in the Test area versus homes in the Control area.
- Overall, our findings indicate that there is not a consistent and measurable difference that exists in association with proximity to a solar farm.



SOLAR FARM 5: VALPARAISO SOLAR LLC, VAPARAISO, IN

Location: Valparaiso Solar LLC, in Porter County, IN

Coordinates: Latitude 41.301180, Longitude -87.094055

PIN: 64-09-07-152-001.000-019, 64-09-07-152-002.000-019

Recorded Owner: PLH Inc

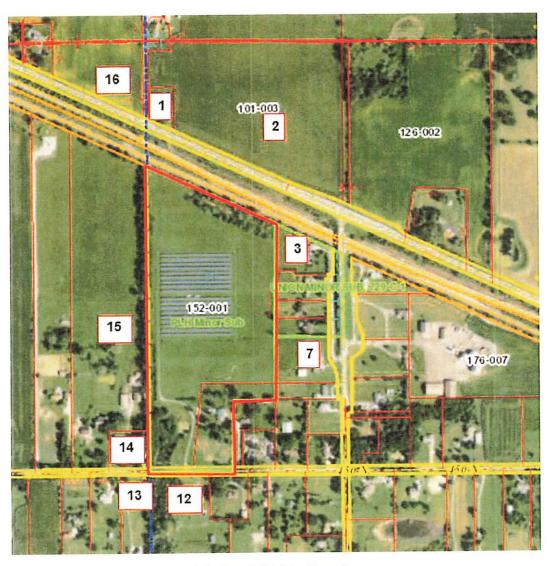
Total Land Size: 27.9 acres

Date Project Announced: March 2012

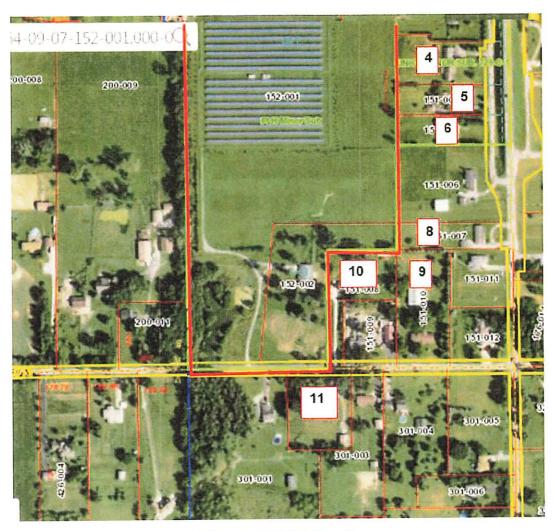
Date Project Completed: December 20, 2012

Output: 1.3 MW DC (1 MW AC)

This solar farm is located on the southern side of Indiana Route 130 (Railroad Ave), located approximately 35 miles southwest of the Chicago Loop. The solar farm was developed by Sustainable Power Group LLC and has ground mounted capacity for 1.3 Megawatts (MW) of power. The panels are mounted in a fixed tilt fashion and there are 2 inverters in this solar farm. The solar farm is lined by a chain link fence that surrounds all of the solar panels. Additionally, there are some natural bushes and trees to the north and west of the solar panels; this vegetation has been in place since before development of the solar farm. Other small trees were planted spaced out around the perimeter of the solar farm after development. From our inspection, the solar panels cannot be seen from Indiana State Route 130 from the north, nor on N 475 W Road to the east as this is a raised roadway. The adjacent properties to the east of the solar panels have full view of the panels from their backyards. The maps on the following pages display the parcels within the solar farm is located (outlined in red). Properties adjoining this parcel are numbered for subsequent analysis.



Solar Farm 5 Adjoining Properties



Solar Farm 5 Adjoining Properties

Adjoining Properties 10 and 14 (Test Areas) were each considered for a paired sales analysis. Both were analyzed as single-family home uses.

For Adjoining Property 10, we analyzed five Control Area sales that sold within a reasonable time frame from Adjoining Property 10's sale date. For Adjoining Property 14, we analyzed five Control Area sales that sold within a reasonable time frame from Adjoining Property 14's sale date. All Control area sales were adjusted for market conditions using regression analysis to identify the appropriate monthly market conditions adjustment.

The result of our analyses for Solar Farm 5 is presented below.

CohnReznick Paired Sale Analysis - Solar Farm 5				
	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF		
Control Area Sales (5)	No: Not adjoining solar farm	\$79.95		
Adjoining Property 10 (Test Area)	Yes: Solar Farm was completed by the sale date	\$82.42		
Difference		3.09%		

CohnReznick Paire	d Sale Analysis - Potentially Impacted by Solar Farm	Solar Farm 5 Adjusted Median Price Per SF
Control Area Sales (5)	No: Not adjoining solar farm	\$64.07
Adjoining Property 14 (Test Area)	Yes: Solar Farm was completed by the sale date	\$62.11
Difference		-3.06%

Noting the relatively small price differential, with one matched pair reflecting a unit sale price of 3% higher for the Adjoining Property sale and the other Adjoining Property sale reflecting a 3% lower unit sale price, it does not appear that Solar Farm 5 negatively impacted the sales price of Adjoining Property 10 or 14 in any consistent way.



SUMMARY OF ADJOINING USES

The table below summarizes each subject solar farm's adjoining uses.

Solar Farm	Parcel ID	Owner	Acreage % of Surrounding Agricultural Uses	Acreage % of Surrounding Residential Uses	Acreage % of Surrounding Industrial Uses	Acreage % of Surrounding Office Uses	Acreage % of Surrounding Other Uses	Average Distance from Panels to Improvements
Grand Ridge	34-22-100-000; 32- 22-101-000	Missel, Eugene / Dorothy Ttee	97.60%	1.40%	0.00%	0.00%	1.00%	553
Portage	64-06-19-176- 001.000-015	PLH LLC	65.50%	34.50%	0.00%	0.00%	0.00%	991
IMPA Frankton	48-08-06-500- 012.001-020	IMPA	76.30%	5.70%	0.00%	0.00%	18.00%	236
Indy Solar III	49-13-13-113- 001.000-200	Indy Solar Development LLC	97.70%	2.30%	0.00%	0.00%	0.00%	474
Valparaiso Solar LLC	64-09-07-152- 001.000-019, 64- 09-07-152-002.000- 019	PLH Inc	81.60%	18.40%	0.00%	0.00%	0.00%	659

Overall, the vast majority of the surrounding acreage for each comparable solar farm is made up of agricultural land, some of which have homesteads. There are also smaller single family home sites that adjoin to the solar farms we have studied. We have found that these comparable solar farms are sound comparables in terms of adjoining uses, location, and size.

Nine of the ten paired sales analyses reflected sales of property adjoining an existing solar farm in which the unit sale prices were effectively the same or higher (+0.10% to +7.46%) than the comparable Control Area sales that were not near any solar farms.

Considering this analysis, we conclude that there was no demonstrated measurable and consistent impact on adjacent property values that was associated with proximity to solar farms.



MARKET COMMENTARY

We have additionally contacted market participants such as appraisers, brokers, and developers familiar with property values around solar farms in Illinois and Indiana. Our conversations with these market participants are noted below.

In Otter Creek Township, in LaSalle County, Illinois, we spoke with Viki Crouch, the Township Assessor, and she said that <u>there has been no impact on property values due to their proximity to the **Grand Ridge Solar Farm**.</u>

We also contacted the selling broker of the Adjoining Property 12 of the **Grand Ridge Solar Farm**, Tina Sergenti with Coldwell Banker, and were told that the proximity of the solar farm had no impact on the marketing time or selling price of the property.

We spoke with Ken Crowley, Rockford Township Assessor in Winnebago County, Illinois, who stated that he has seen no impact on property values in his township as an effect of proximity to the Rockford Solar Farm.

We spoke with James Weisiger, the Champaign Township Assessor in Champaign County, where the **University of Illinois Solar Farm** is located and he noted that no one has petitioned to have their property assessments lowered and <u>there appears to have been no impact on property values as a result of proximity to the solar farm.</u>

We interviewed Missy Tetrick, a Commercial Valuation Analyst for the Marion County Indiana Assessor. She mentioned the **Indy Solar III sites** and stated that she saw <u>no impact on land or property prices from proximity</u> to this solar farm.

We spoke with Ken Surface, a Senior Vice President of Nexus Group. Nexus Group is a large valuation group in Indiana and has been hired by 20 counties in Indiana regarding property assessments. Mr. Surface is familiar with the solar farm sites in Harrison County (Lanesville Solar Farm) and Monroe County (Ellettsville Solar Farm) and stated he has noticed <u>no impact on property values from proximity to these sites</u>.

We spoke to Mendy Lassaline, the County Assessor for Perry County, Indiana. She stated that she has seen <u>no</u> impact on land or residences from proximity to the solar farm in her county (IMPA Tell City Solar Park).

We interviewed Patti St. Clair, the Chief Deputy to the St. Josephs County Assessor in Indiana. She stated that she has seen <u>no impact from proximity to the solar farm on land or properties</u> in her county (**Olive PV Solar Farm**). Additionally, she stated that <u>no appeals have come in to her office stating that this solar farm has had any negative effect.</u>

According to Betty Smith-Hanson, the Wayne County Assessor in Indiana, there has been <u>no impact on land or property values from proximity to the solar farm</u> in her county (IMPA Richmond Solar Park).



SOLAR FARM FACTORS ON HARMONY OF USE

The data from the solar farms included in this Property Value Impact Study, clearly indicates that solar farms are generally a compatible use with agricultural and residential uses.

The following section analyzes specific physical characteristics of solar farms and is based on research and our solar farm site visits.

Appearance: Most solar panels have a similar appearance to a greenhouse or single story residence and are usually not more than 10 feet high. As previously mentioned, developers generally surround a solar farm with a fence and often leave existing perimeter foliage, which minimizes the visibility of the farm. The physical characteristics of solar farms are compatible with adjoining agricultural and residential uses.

Noise: Solar panels in general are effectively silent and noise levels are minimal, like ambient noise. The only two sources of noise include the tracking motors and inverters housed in a sound-proofed container, which produce a quiet hum. However, neither source is typically heard outside the facility fence.

Odor: Solar panels do not produce any byproduct or odor.

Traffic: The solar farm does not require regular maintenance from on-site employees and thus does not attract traffic during daily operation aside from the initial construction and installation of the farm.

Hazardous Material: Modern solar panel arrays are constructed to U.S. government standards. Testing shows that modern solar modules are both safe to dispose of in landfills, and are also safe in worst case conditions of abandonment or damage in a disaster.



COMPATIBILITY WITH EXISTING USES

We have examined multiple instances where adjoining property owners have developed homes next to an operational solar farm, which shows that the presence of solar farms has not deterred new development. Supporting images are presented below and on the following page.



Portage Solar Farm (Solar Farm 2) October 2015



Portage Solar Farm (Solar Farm 2)
October 2016

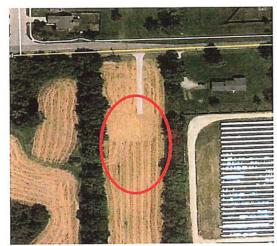


4,255 square foot estate home under construction, adjacent to Portage Solar Farm (Solar Farm 2)

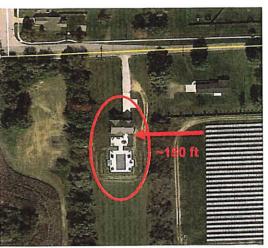
On-site pond and attached garage (cost estimated at \$465,000) April 2018



For Solar Farm 4, Dominion Indy III, the adjacent land to the west was acquired and subsequently developed with a large estate home – after the solar panels had been in operation for years.



Dominion Indy III Solar Farm (Solar Farm 4) September 2014



Dominion Indy III Solar Farm (Solar Farm 4) October 2016



Estate home adjacent to Dominion Indy III Solar Farm (Solar Farm 4)

On-site pool and attached garage (home cost estimated at \$450,000 - October 2015)

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SUMMARY AND FINAL CONCLUSIONS

We have reviewed published methodology for measuring impact on property values as well as published studies that analyzed the impact of solar farms on property values. We have also interviewed market participants to give us additional insight as to how the market evaluates farm land and single family homes with views of the solar farm. These studies found little to no measurable and consistent difference between the Test Area Sales and the Control Area Sales attributed to the solar farms, and are generally considered a compatible use. We then can conclude that since the Adjoining Property Sales (Test Area Sales) were not adversely affected by their proximity to the solar farm, that properties surrounding other proposed solar farms operating in compliance with all regulatory standards will similarly not be adversely affected, in either the short or long term periods.

The purpose of this property value impact study is to determine whether the presence of a solar farm has caused a measurable and consistent difference in values between the Test Area Sales and the Control Area Sales. A summary of our findings for the paired sales analyses is presented below.

Solar Farm		Adj. Property Number	Adjoining Property Sale (Test Area) Price Per Unit	Control Area Sales Median Price Per Unit	% Difference	Feet from Panel to Lot	Feet From Panel to House	Impact Found
1	Grand Ridge Solar	12	\$79.90	\$74.35	+7.46%	366	479	No Impact
2	Portage Solar	1	\$8,000	\$7,674	+4.25%	874	1,227	No Impact
_	Portage Solar	7	\$84.35	\$84.27	+0.10%	1,196	1,320	No Impact
3	IMPA Frankton	2	\$25.58	\$28.42	+0.56%	83	145	No Impact
Ĭ	IMPA Frankton	7	\$52.40	\$51.47	+1.81%	208	414	No Impact
4	Indy Solar III	Group 1 (4)	\$59.10	\$57.84	+2.18%	157 to	230 to	No Impact
	Indy Solar III	Group 2 (3)	\$72.49	\$71.52	+1.36%	329	404	No Impact
	Indy Solar III	2	\$8,210	\$8,091	+1.47%	166	n/a	No Impact
5	Valparaiso Solar LLC	10	\$82.42	\$79.95	+3.09%	400	521	No Impact
	Valparaiso Solar LLC	14	\$62.11	\$64.07	-3.06%	595	678	No Impact
verage Variance in Sale Prices for Test to Control Areas					+1.92%			•

15 Adjoining Test Sales Studied and compared to 63 Control Sales.

Marketing Time Averages: Adjoining Test Sales 162 days; Control Area Sales 171 days

Based upon our examination, research, and analyses of the existing solar farm uses, the surrounding areas, and an extensive market database, we have concluded that <u>no consistent negative impact has occurred to adjacent property that could be attributed to proximity to the adjacent solar farm</u>, with regard to unit sale prices or other influential market indicators. This conclusion has been confirmed by numerous County Assessors who have also investigated this use's potential impact.



If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Respectfully submitted,

CohnReznick, LLP

Andrew R. Lines, MAI

Principal

Certified General Real Estate Appraiser

Illinois License No. #553.001841

Expires 9/30/2019

Patricia L. McGarr, MAI, CRE, FRICS

Patricia & Mcyars

National Director - Valuation Advisory Services

Certified General Real Estate Appraiser

Illinois License No. #553.000621

Expires 9/30/2019

Indiana License No. #CG49600131

Expires 6/30/2020

Sonia K. Singh Senior Manager Certified General Real Estate Appraiser VA License No. #4001017615 Expires 3/31/2020 DC License No. #GA2002063 Expires 2/28/2020 MD License No. #33217 Expires 4/16/2021

CERTIFICATION

We certify that, to the best of our knowledge and belief:

- 1. The statements of fact and data reported are true and correct.
- The reported analyses, findings, and conclusions in this consulting report are limited only by the reported assumptions and limiting conditions, and are our personal, impartial, and unbiased professional analyses, findings, and conclusions.
- 3. We have no present or prospective interest in the property that is the subject of this report and no personal interest with respect to the parties involved.
- 4. We have performed no services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.
- 5. We have no bias with respect to the property that is the subject of this report or the parties involved with this assignment.
- Our engagement in this assignment was not contingent upon developing or reporting predetermined results.
- 7. Our compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value finding, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this report.
- 8. Our analyses, findings, and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute, which includes the Uniform Standards of Professional Appraisal Practice (USPAP).
- 9. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
- 10. Patricia L. McGarr, MAI, CRE, FRICS, Andrew R. Lines, MAI and Sonia K. Singh have viewed the exterior of all comparable data referenced in this report in person, via photographs, or aerial imagery.
- 11. We have not relied on unsupported conclusions relating to characteristics such as race, color, religion, national origin, gender, marital status, familial status, age, and receipt of public assistance income, handicap, or an unsupported conclusion that homogeneity of such characteristics is necessary to maximize value.
- 12. Michael F. Antypas, Amanda G. Edwards, and Lydia D. Terry provided significant appraisal consulting assistance to the persons signing this certification.
- 13. We have experience in reviewing properties similar to the subject and are in compliance with the Competency Rule of USPAP.
- 14. As of the date of this report, Patricia L. McGarr, MAI, CRE, FRICS and Andrew R. Lines, MAI have completed the continuing education program of the Appraisal Institute.
- 15. As of the date of this report, Sonia K. Singh has completed the Standards and Ethics Education Requirements for Candidates of the Appraisal Institute.

If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Respectfully submitted,

CohnReznick, LLP

Andrew R. Lines, MAI

Principal

Certified General Real Estate Appraiser

Illinois License No. #553.001841

Expires 9/30/2019

Patricia L. McGarr, MAI, CRE, FRICS

Patricia & Mcyars

National Director - Valuation Advisory Services

Certified General Real Estate Appraiser

Illinois License No. #553.000621

Expires 9/30/2019

Indiana License No. #CG49600131

Expires 6/30/2020

Sonia K. Singh Senior Manager

Certified General Real Estate Appraiser

VA License No. #4001017615

Expires 3/31/2020

DC License No. #GA2002063

Expires 2/28/2020

MD License No. #33217

Expires 4/16/2021

ASSUMPTIONS AND LIMITING CONDITIONS

The fact witness services will be subject to the following assumptions and limiting conditions:

- No responsibility is assumed for the legal description provided or for matter pertaining to legal or title considerations. Title to the property is assumed to be good and marketable unless otherwise stated. The legal description used in this report is assumed to be correct.
- 2. The property is evaluated free and clear of any or all liens or encumbrances unless otherwise stated.
- 3. Responsible ownership and competent management are assumed.
- 4. Information furnished by others is believed to be true, correct and reliable, but no warranty is given for its accuracy.
- 5. All engineering studies are assumed to be correct. The plot plans and illustrative material in this report are included only to help the reader visualize the property.
- 6. It is assumed that there are no hidden or unapparent conditions of the property, subsoil, or structures that render it more or less valuable. No responsibility is assumed for such conditions or for obtaining the engineering studies that may be required to discover them.
- 7. It is assumed that the property is in full compliance with all applicable federal, state, and local and environmental regulations and laws unless the lack of compliance is stated, described, and considered in the evaluation report.
- 8. It is assumed that the property conforms to all applicable zoning and use regulations and restrictions unless nonconformity has been identified, described and considered in the evaluation report.
- 9. It is assumed that all required licenses, certificates of occupancy, consents, and other legislative or administrative authority from any local, state, or national government or private entity or organization have been or can be obtained or renewed for any use on which the value estimate contained in this report is based.
- 10. It is assumed that the use of the land and improvements is confined within the boundaries or property lines of the property described and that there is no encroachment or trespass unless noted in this report.
- 11. The date of value to which the findings are expressed in this report apply is set forth in the letter of transmittal. The appraisers assume no responsibility for economic or physical factors occurring at some later date which may affect the opinions herein stated.
- 12. Unless otherwise stated in this report, the existence of hazardous materials, which may or may not be present on the property, was not observed by the appraisers. The appraisers have no knowledge of the existence of such substances on or in the property. The appraisers, however, are not qualified to detect such substances. The presence of substances such as asbestos, urea-formaldehyde foam insulation, radon gas, lead or lead-based products, toxic waste contaminants, and other potentially hazardous materials may affect the value of the property. The value estimate is predicated on the assumption that there is no such material on or in the property that would cause a loss in value. No

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- responsibility is assumed for such conditions or for any expertise or engineering knowledge required to discover them. The client is urged to retain an expert in this field, if desired.
- 13. The forecasts, projections, or operating estimates included in this report were utilized to assist in the evaluation process and are based on reasonable estimates of market conditions, anticipated supply and demand, and the state of the economy. Therefore, the projections are subject to changes in future conditions that cannot be accurately predicated by the appraisers and which could affect the future income or value projections.
- 14. Fundamental to the appraisal analysis is the assumption that no change in zoning is either proposed or imminent, unless otherwise stipulated. Should a change in zoning status occur from the property's present classification, the appraisers reserve the right to alter or amend the value accordingly.
- 15. It is assumed that the property does not contain within its confined any unmarked burial grounds which would prevent or hamper the development process.
- 16. The Americans with Disabilities Act (ADA) became effective on January 26, 1992. We have not made a specific compliance survey and analysis of the property to determine if it is in conformance with the various detailed requirements of the ADA. It is possible that a compliance survey of the property, together with a detailed analysis of the requirements of the ADA, could reveal that the property is not in compliance with one or more of the requirements of the Act. If so, this fact could have a negative effect on the value of the property. Unless otherwise noted in this report, we have not been provided with a compliance survey of the property. Any information regarding compliance surveys or estimates of costs to conform to the requirements of the ADA are provided for information purposes. No responsibility is assumed for the accuracy or completeness of the compliance survey cited in this report, or for the eventual cost to comply with the requirements of the ADA.
- 17. Any value estimates provided in this report apply to the entire property, and any proration or division of the total into fractional interests will invalidate the value estimate, unless such proration or division of interests has been set forth in this report.
- 18. Any proposed improvements are assumed to have been completed unless otherwise stipulated; any construction is assumed to conform with the building plans referenced in this report.
- 19. Unless otherwise noted in the body of this report, this evaluation assumes that the subject does not fall within the areas where mandatory flood insurance is effective.
- 20. Unless otherwise noted in the body of this report, we have not completed nor are we contracted to have completed an investigation to identify and/or quantify the presence of non-tidal wetland conditions on the subject property.
- 21. This report should not be used as a basis to determine the structural adequacy/inadequacy of the property described herein, but for evaluation purposes only.
- 22. It is assumed that the subject structure meets the applicable building codes for its respective jurisdiction. We assume no responsibility/liability for the inclusion/exclusion of any structural component item which may have an impact on value. It is further assumed that the subject property will meet code requirements as they relate to proper soil compaction, grading, and drainage.

23. The appraisers are not engineers, and any references to physical property characteristics in terms of quality, condition, cost, suitability, soil conditions, flood risk, obsolescence, etc., are strictly related to their economic impact on the property. No liability is assumed for any engineering-related issues.

The evaluation services will be subject to the following limiting conditions:

- 1. The findings reported herein are only applicable to the properties studied in conjunction with the Purpose of the Evaluation and the Function of the Evaluation as herein set forth; the evaluation is not to be used for any other purposes or functions.
- Any allocation of the total value estimated in this report between the land and the improvements
 applies only to the stated program of utilization. The separate values allocated to the land and
 buildings must not be used in conjunction with any other appraisal and are not valid if so used.
- 3. No opinion is expressed as to the value of subsurface oil, gas or mineral rights, if any, and we have assumed that the property is not subject to surface entry for the exploration or removal of such materials, unless otherwise noted in the evaluation.
- 4. This report has been prepared by CohnReznick under the terms and conditions outlined by the enclosed engagement letter. Therefore, the contents of this report and the use of this report are governed by the client confidentiality rules of the Appraisal Institute. Specifically, this report is not for use by a third party and CohnReznick is not responsible or liable, legally or otherwise, to other parties using this report unless agreed to in writing, in advance, by both CohnReznick and/or the client or third party.
- 5. Disclosure of the contents of this evaluation report is governed by the by-laws and Regulations of the Appraisal Institute has been prepared to conform with the reporting standards of any concerned government agencies.
- 6. The forecasts, projections, and/or operating estimates contained herein are based on current market conditions, anticipated short-term supply and demand factors, and a continued stable economy. These forecasts are, therefore, subject to changes with future conditions. This evaluation is based on the condition of local and national economies, purchasing power of money, and financing rates prevailing at the effective date of value.
- 7. This evaluation shall be considered only in its entirety, and no part of this evaluation shall be utilized separately or out of context. Any separation of the signature pages from the balance of the evaluation report invalidates the conclusions established herein.
- 8. Possession of this report, or a copy thereof, does not carry with it the right of publication, nor may it be used for any purposes by anyone other than the client without the prior written consent of the appraisers, and in any event, only with property qualification.
- 9. The appraisers, by reason of this study, are not required to give further consultation or testimony or to be in attendance in court with reference to the property in question unless arrangements have been previously made.

- Neither all nor any part of the contents of this report shall be conveyed to any person or entity, other than the appraiser's client, through advertising, solicitation materials, public relations, news, sales or other media, without the written consent and approval of the authors, particularly as to evaluation conclusions, the identity of the appraisers or CohnReznick, LLC, or any reference to the Appraisal Institute, or the MAI designation. Further, the appraisers and CohnReznick, LLC assume no obligation, liability, or accountability to any third party. If this report is placed in the hands of anyone but the client, client shall make such party aware of all the assumptions and limiting conditions of the assignment.
- 11. This evaluation is not intended to be used, and may not be used, on behalf of or in connection with a real estate syndicate or syndicates. A real estate syndicate means a general or limited partnership, joint venture, unincorporated association or similar organization formed for the purpose of, and engaged in, an investment or gain from an interest in real property, including, but not limited to a sale or exchange, trade or development of such real property, on behalf of others, or which is required to be registered with the United States Securities and Exchange commissions or any state regulatory agency which regulates investments made as a public offering. It is agreed that any user of this evaluation who uses it contrary to the prohibitions in this section indemnifies the appraisers and the appraisers' firm and holds them harmless from all claims, including attorney fees, arising from said use.

ADDENDUM A: APPRAISER QUALIFICATIONS



Patricia L. McGarr, MAI, CRE, FRICS, CRA Principal, National Director, Valuation Advisory Services

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Patricia L. McGarr, MAI, CRE, FRICS, CRA, is a principal and National Director of CohnReznick Advisory Group's Valuation Advisory Services practice who is based in Chicago. Pat's experience includes market value appraisals of varied property types for acquisition, condemnation, mortgage, estate, ad valorem tax, litigation, zoning, and other purposes. Pat has been involved in the real estate business since 1980. From June 1980 to January 1984, she was involved with the sales and brokerage of residential and commercial properties. Her responsibilities during this time included the formation, management, and training of sales staff in addition to her sales, marketing, and analytical functions. Of special note was her development of a commercial division for a major Chicago-area brokerage firm.

Since January 1984, Pat has been exclusively involved in the valuation of real estate. Her experience includes the valuation of a wide variety of property types including residential, commercial, industrial, and special purpose properties including such diverse subjects as quarries, marinas, riverboat gaming sites, shopping centers, manufacturing plants, and office buildings. She is also experienced in the valuation of leasehold and leased fee interests. Pat has performed appraisal assignments throughout Illinois and the Chicago Metropolitan area as well as Wisconsin, Indiana, Michigan, New York, New Jersey, California, Nevada, Florida, Utah, Texas, and Ohio. Pat has gained substantial experience in the study and analysis of the establishment and expansion of sanitary landfills in various metropolitan areas including the preparation of real estate impact studies to address criteria required by Senate Bill 172. She has also developed an accepted format for allocating value of a landfill operation between real property, landfill improvements, and franchise (permits) value.

Over the past several years, Pat has developed a valuation group that specializes in serving utility companies establish new utility corridors for electric power transmission and pipelines. This includes determining acquisition budgets, easement acquisitions, and litigation support. Pat has considerable experience in performing valuation impact studies on potential detrimental conditions and has studied properties adjoining landfills, waste transfer stations, stone quarries, cellular towers, schools, electrical power transmission lines, "Big Box" retail facilities, levies, properties with restrictive covenants, landmark districts, environmental contamination, airports, material defects in construction, stigma, and loss of view amenity for residential high rises.

Pat has qualified as an expert valuation witness in numerous local, state and federal courts.

Pat has participated in specialized real estate appraisal education and has completed more than 50 courses and seminars offered by the Appraisal Institute totaling more than 600 classroom hours, including real estate transaction courses as a prerequisite to obtaining a State of Illinois Real Estate Salesman License.

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Pat has earned the professional designations of Counselors of Real Estate (CRE), Member of the Appraisal Institute (MAI), Fellow of Royal Institution of Chartered Surveyors (FRICS) and Certified Review Appraiser (CRA). She is also a certified general real estate appraiser with active licenses in numerous states.

Education

North Park University: Bachelor of Science, General Studies

Professional Affiliations

- National Association of Realtors
- CREW Commercial Real Estate Executive Women
- IRWA International Right Of Way Association

Appointments

Appointed by the Governor in 2017 to the State of Illinois' Department of Financial & Professional Regulation's Real Estate Appraisal Board; Vice-Chairman - 2018

Licenses and Accreditations

- Member of the Appraisal Institute (MAI)
- Counselors of Real Estate, designated CRE
- Fellow of Royal Institution of Chartered Surveyors (FRICS)
- Certified Review Appraiser (CRA)
- Alabama State Certified General Real Estate Appraiser
- California State Certified General Real Estate Appraiser
- Connecticut State Certified General Real Estate Appraiser
- District of Columbia State Certified General Real Estate Appraiser
- Illinois State Certified General Real Estate Appraiser
- Indiana State Certified General Real Estate Appraiser
- Louisiana State Certified General Real Estate Appraiser
- Maryland State Certified General Real Estate Appraiser
- Massachusetts State Certified General Real Estate Appraiser
- Michigan State Certified General Real Estate Appraiser
- Nevada State Certified General Real Estate Appraiser
- New Jersey State Certified General Real Estate Appraiser
- New York State Certified General Real Estate Appraiser
- North Carolina State Certified General Real Estate Appraiser
- Pennsylvania State Certified General Real Estate Appraiser
- South Carolina State Certified General Real Estate Appraiser
- Tennessee State Certified General Real Estate Appraiser
- Texas State Certified General Real Estate Appraiser
- Virginia State Certified General Real Estate Appraiser
- Wisconsin State Certified General Real Estate Appraiser





Andrew R. Lines, MAI Principal – Real Estate Valuation, Valuation Advisory Services

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Andrew R. Lines, MAI, is a partner for CohnReznick Advisory Group's Valuation Advisory practice who is based in the Chicago office and has been a CohnReznick employee for over six years. Andrew has been involved in the real estate business for more than 15 years and has performed valuations on a wide variety of real property types including single- and multi-unit residential (including LIHTC), student housing, office, retail, industrial, mixed-use and special purpose properties including landfills, waste transfer stations, marinas, hospitals, universities, telecommunications facilities, data centers, self- storage facilities, racetracks, CCRCs, and railroad corridors. He is also experienced in the valuation of leasehold, leased fee, and partial interests, as well as purchase price allocations (GAAP, IFRS and IRC 1060) for financial reporting.

Valuations have been completed nationwide for a variety of assignments including mortgage financing, litigation, tax appeal, estate gifts, asset management, workouts, and restructuring, as well as valuation for financial reporting including purchase price allocations (ASC 805), impairment studies, and appraisals for investment company guidelines and REIS standards. Andrew has qualified as an expert witness, providing testimony for eminent domain cases in the states of IL and MD. Andrew has also performed appraisal review assignments for accounting purposes (audit support), asset management, litigation and as an evaluator for a large Midwest regional bank.

Andrew has earned the professional designation of Member of the Appraisal Institute (MAI). He has also qualified for certified general commercial real estate appraiser licenses in Arizona, California, Maryland, Florida, Wisconsin, Georgia, Illinois, Indiana, New Jersey and New York. Temporary licenses have been granted in Connecticut, Colorado, Ohio, Pennsylvania, Idaho, Kansas, Minnesota and South Carolina.

Education

Syracuse University: Bachelor of Fine Arts

Professional Affiliations

- Chicago Chapter of the Appraisal Institute Alternate Regional Representative (2016 Present)
- International Real Estate Management (IREM)
- National Council of Real Estate Investment Fiduciaries (NCREIF)

Community Involvement

- Fellows Alumni Network World Business Chicago, Founding member
- Syracuse University Regional Council Active Member
- Syracuse University Alumni Association of Chicago, Past Board member
- Chicago Friends School Board Member

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CohnReznick





Sonia K. Singh

Senior Manager - Real Estate Valuation

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Sonia K. Singh is a senior manager in CohnReznick Advisory Group's Valuation Advisory practice who is based in the Bethesda office. She has been engaged in real estate valuation and other real estate consulting services for the past six years and has valued over \$3.5 billion in real property.

She is adept at valuing a variety of real estate property types across the United States, including the following: right-of-way acquisitions for utility corridors; single- and multi-tenant industrial buildings; historic redevelopment projects; freestanding and retail shopping centers; trophy, class A office buildings; continuing care retirement communities; marinas; car dealerships; athletic clubs; boutique and luxury flag hotels with for-sale residential villas; and medical office buildings with a surgical center. Real estate appraisals have been prepared for pending litigation matters, estate planning, estate & gift tax purposes, and asset management.

In addition to real estate appraisal services, she has completed over 2,500 hours related to generating purchase price allocations for the acquisition of tangible and intangible assets for financial reporting purposes under the guidance of ASC 805 and early adoption of ASU 2017-01. Other experienced real estate consulting services include appraisal review and statistical analysis. Several impact studies were prepared by her and her peers measuring the impact, if any, of economic and environmental influences on property values.

Other services she provided significant assistance with include useful life analysis of real estate assets and valuation of minority interests for gift and estate tax purposes. In addition, she has developed several financial forecasts for proposed real estate development to illustrate profit measures as well as return on capital for potential investors.

Sonia is a certified general real estate appraiser with active licenses in the District of Columbia, Maryland, and Virginia. She has also completed the following actuarial exams: Probability, Financial Mathematics, and Models for Financial Economics.

Education

University of Illinois: Bachelor of Science, Actuarial Science

Professional Affiliations and Licenses

- Appraisal Institute, Candidate for Designation
- Urban Land Institute, Associate Member
- Certified General Real Estate Appraiser Licenses in the States of DC, MD, and VA

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Michael F. Antypas

Consultant, Valuation Advisory Services

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Michael Antypas is a consultant in CohnReznick Advisory Group's Valuation Advisory Services practice and is based in the Bethesda office. He has assisted other associates and appraisers in the valuation of a variety of retail shopping centers, hotels, market rate and restricted rental apartment properties, Class A office complexes with GSA tenants, mixed-use properties, developable land, and single family rental home portfolios owned by REITs. He has also completed solar farm impact studies, appraisals for eminent domain disputes, as well as purchase price allocations on various senior living facilities, medical office buildings, and retail centers. In addition, Michael is certified in working with Argus Enterprise valuation software. He is a practicing affiliate in the Appraisal Institute and is working towards becoming a Certified General Real Estate Appraiser.

He graduated from the Villanova School of Business in May of 2016. Some of his other experience working in Real Estate originated through interning with commercial brokers. Throughout his senior year in college, Michael interned with Newmark Grubb Knight Frank as a Capital Markets intern. There he helped create and revise many marketing packages for the firm's senior managing directors. He also assisted in developing underwriting models and projections for offering memorandums. He also worked with a boutique restaurant broker in Washington D.C, Papadopoulos Properties where he compiled market research for his client's use and surveyed prospective restaurants to gauge their interest in expanding to the Washington D.C. market.

Education

 Villanova University: Bachelor of Business Administration, Finance and Real Estate, Minor in Business Analytics

Certifications

Argus Enterprise Certified

Professional Affiliations

Appraisal Institute, Practicing Affiliate



Amanda G. Edwards

Consultant, Valuation Advisory Services

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Amanda Edwards is a consultant in CohnReznick's Valuation Advisory Services practice group and is based in Chicago. Amanda has assisted other appraisers in the valuation of a variety of industrial properties, medical offices, hotels, multifamily properties, condominium developments, retail and mixed-use properties, developable and open space land, and single family subdivisions. She has also assisted with appraisals and continuing consulting for eminent domain litigation. Additionally, Amanda has provided audit support for Assurance clients of the firm. Amanda is a licensed Associate Real Estate Trainee Appraiser in Illinois, working toward becoming a Certified General Real Estate Appraiser.

Before joining CohnReznick, Amanda worked at the Inland Group of companies valuing properties and underwriting, as well as assisting in the closing of, commercial mortgage loans, nationwide. Property types included industrial, office, multi-family, retail, and hotel, with an emphasis on value-add properties and new construction projects. Amanda has also worked as a commercial lender for builder-developer housing at Fifth Third Bank, specializing in the Chicago metro area. She has also worked valuing senior housing properties and associated business models for acquisition purposes at a senior housing developer/operator.

Amanda has spent considerable time in the consulting environment, developing and conducting in-depth interviews for primary research in a variety of industries such as technology, financial institutions, and industrial manufacturing for private equity clients.

Education

Bryn Mawr College, Bachelor of Arts

Professional Licenses

Associate Real Estate Trainee Appraiser in Illinois

Other Affiliations

- Practicing Affiliate Appraisal Institute
- Chicago Real Estate Council Member
- Bryn Mawr College Alumnae Club of Chicago President

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Lydia D. Terry

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Lydia Terry is a consultant in CohnReznick Advisory Group's Valuation Advisory Services practice and is based in the Chicago office th She has worked in real estate valuation, acquisition, and sales for the past 14 years, primarily working in residential mortgage collateral and eminent domain.

Prior to, and during the great recession (2004-2010), Lydia appraised residential properties in the California central valley (Bakersfield and Fresno) which saw some of the highest appreciation and declines in the country. As such, Lydia helped develop the industry standard market conditions report, which is now required for all FannieMae backed residential mortgages. Additionally, she has appraised farmland, gas stations, broadcast towers, commercial signs and other sites typically found along interstate and state highways.

Beyond appraisal, she has experience in mortgage debt negotiation, bank REOs, foreclosures and short sales.

Lydia is currently working towards obtaining her Certified General Real Estate Appraiser License.



Exhibit E

Landscape Report & Design Requirements

BROOKVIEW SOLAR PROJECT PRELIMINARY LANDSCAPE REPORT



NOVEMBER 2019

PREPARED FOR:

NextEra Energy Resources 700 Universe Blvd Juno Beach, FL 32408 Contact: Chanelle Mayer Tel: (561) 691-2716

PREPARED BY:

Trevor R. Buckley, Landscape Planner and Scott Wiley, Landscape Architect, ISA Certified Arborist Timmons Group 1001 Boulders Parkway, Suite 300 Richmond, Virginia 23225 Tel: (804) 200-6477 trevor.buckley@timmons.com www.timmons.com



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1.0 Project Overview

The landscaping requirements for this project consist of buffers that will screen and mitigate the visual impact of the facility along its perimeter by (1) retaining existing trees to the extent possible and (2) planting buffers. The landscaping proposed in this plan will soften the fence line and views of the solar arrays and other infrastructure, as well as beautify some sections of roadway and add ecological benefits with the creation of new wildlife habitat.

This report has been completed based on a review of the Mount Joy Township Zoning Ordinance; memorandums by NextEra Energy Resources, Open Road Renewables, and Barley Snyder Attorneys at Law from Fall 2018; a "Brookview Landscaping Synthesis" dated 12/4/18 (provided by Next Era); and correspondence with Township staff from February 2019. The interpretation and cost estimation included in this report considers both the specific landscaping requirements for Solar Energy Systems in Article IV of the Zoning Ordinance and general requirements for landscaping in Article VII of the Zoning Ordinance. Per Township staff, the "general landscaping sections [Article VII] apply unless the solar section has specific (conflicting) criteria—in which case those specific solar standards apply." The location of each type of buffer determined in this report (existing or proposed) is based on the requirements reviewed alongside the following:

- Project area as shown in the latest KMZ file provided by NextEra Energy titled
 "PA Brookview Final75MW ProjectBndExtent LSGIS 20190625"
- Mount Joy Township Zoning Map dated June 5, 2017 (https://mtjoytwp.us/wp-content/uploads/docs/2017-03-Zoning-Map.pdf)
- Aerial imagery as shown:
 - o In Google Earth and dated April 15, 2016
 - In the Adams County Tax Parcel Viewer dated 2018 (https://mapping.adamscounty.us/apps/Public Parcel Viewer/)
- Location of public road frontage and dwellings as illustrated in the Solar Receptor Analysis exhibit

2.0 Buffer Requirements

2.1 Overview

Project Area

The Project Area is located in Mount Joy Township, Adams County, Pennsylvania and totals 927.6 acres. The Project Site is situated on the north and south side of the Baltimore Pike (State Route 39), approximately 2.5 miles west of Littlestown. The rural landscape has a mixed land cover of mostly agricultural fields interspersed with some small and large patches of woodlands.

Buffer Treatments

The proposed landscaping consists of buffers totaling 108,944 linear feet (20.63 miles) along the perimeter of the Project Area, including along public road frontage/street right of way and property lot lines. The linear segments of the project area shown in the Preliminary Build Area connecting larger polygonal areas have been excluded from this analysis and assessment.



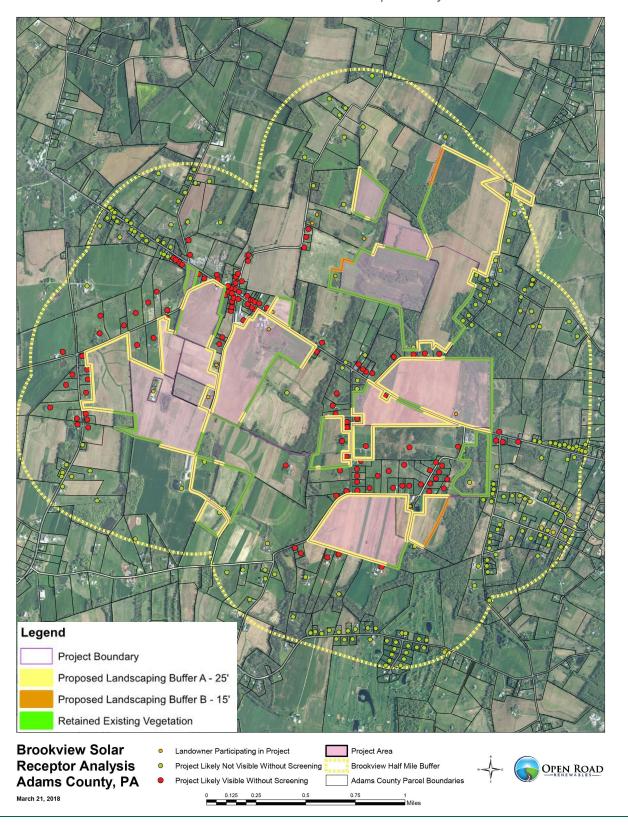
The three buffer treatments and the proposed length of each type of perimeter treatment are as follows:

- Existing vegetation 44,241 linear feet: existing buffer within project area boundaries consisting of trees at least size inches in diameter at breast height that meet the purposes of the required buffer/screening
- Buffer A 61,282 linear feet: 25-ft wide buffer meeting solar energy system landscaping requirements
- Buffer B 3,421 linear feet: 15-ft. wide buffer meeting general landscaping requirements

These treatments have been overlaid on the Brookview Solar Receptor Analysis (dated March 21, 2018) to show their location and placement in relation to parcel boundaries and adjacent and nearby dwellings. Each of these treatments is described and the reasons for their application in the locations indicated are given below.



Buffer Treatments overlaid on Receptor Analysis





2.2 Existing Vegetation

Both the specific landscaping requirements for Solar Energy Systems in Article IV and general requirements for landscaping in Article VII of the Zoning Ordinance state that existing trees can be preserved and counted towards the applicable buffer requirements, given that the trees are at least six inches in diameter at breast height and meet the purposes of the required buffer/screening.

For the purposes of this report, the determination for existing vegetation has been made based on the available aerial imagery from 2016. Only vegetation which appears (1) to be within the Project Area and (2) to be sufficient in quantity/linear width to meet the buffer requirements (that would otherwise apply) have been counted. Existing vegetation that is intermittent or that appears to be outside the Project Area has not been counted. An onsite assessment of existing vegetation will enable a more accurate determination of current existing vegetation present within the Project Area. To be used for buffers, this existing vegetation should provide at least the same level of screening as would be provided by a proposed buffer. Individual existing trees standing alone or in a linear segment of intermittent vegetation along public road frontage or lot lines can be credited for plant material and incorporated into a proposed buffer.

The existing vegetation treatment is indicated in green on the map on page 3.

2.3 Proposed Buffer A

The primary proposed buffer treatment is a 25-foot wide buffer that meets landscaping requirements for solar energy systems per Section 110-402.8 of the Zoning Ordinance. Any general landscape requirements that are not addressed under the solar energy system requirements also apply and are addressed here. This buffer is located along the following:

- Public road frontage/street right-of-way
- Property lot lines adjacent to:
 - Lots improved with dwellings
 - o Unimproved lots in the Baltimore Pike Corridor District (BPC), which is zoned for residential use.

This buffer treatment is indicated in yellow on the map on page 3, and the landscaping requirements for the buffer are summarized in the following table and buffer planting template.



Buffer A Landscaping Requirements

Type of Requirement	Use Requirement	Zoning Ordinance
Minimum Setback distance	50 feet	§110-402.II(4)
Buffer width	25 feet	§110-402.II(8)
Buffer appearance	"Natural-looking visual element."	§110-402.II(10)(a)
	"Mostly solid year-round visual screen at least six feet in height." Deciduous trees spaced to create a naturalistic look.	§110-402.II(10)(c)
Existing vegetation	Trees 6 inches diameter at breast height or greater to be preserved	§110-402(10)(c)
Plant Material		
Plant Type	Quantity per 50 linear feet	§110-402.II(10)(c)
Deciduous shade trees Evergreen shrubs	1 No minimum stated ¹	
	Minimum size at planting	§110-402.II(10)(c)
Deciduous shade trees Evergreen shrubs	2-inch caliper 36 inches in height	, , , ,
	Minimum size at maturity	
Deciduous shade trees	Exceeding 20 feet in height ²	§110-708.H(3)
Species Evergreen shrubs	At least 6 feet in height ⁴ Primarily species native to Pennsylvania. No "weak- stem" plants.	§110-402(10)(c) §110-402.II(10)

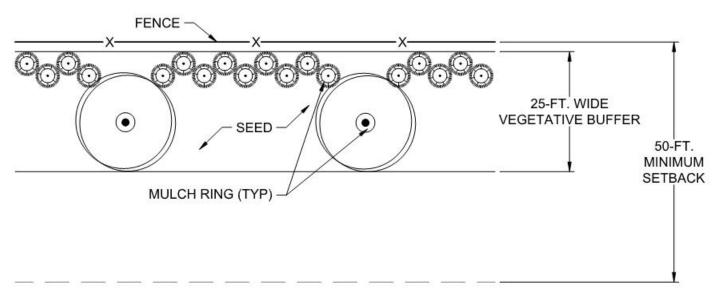
Notes:

- 1. A sufficient number must be planted in order to create a "mostly solid year-round visual screen."
- 2. No minimum size at maturity is given in Article IV of the Zoning Ordinance, but this is the height requirement given in the general landscaping requirements in Article VII.
- 3. No minimum size at maturity is given, but there is a requirement for a "visual screen at least six feet in height" within three years of planting.



Buffer A Planting Template (100-foot segment)

Scale: 1" = 20'



Plant Key







2.4 Proposed Buffer B

The secondary proposed buffer treatment is a 15-foot wide buffer that meets general landscaping requirements. This buffer is located where no solar energy system requirements apply. This includes along property lot lines adjacent to unimproved lots in the Agricultural Conservation District (AC) where the 15-foot buffer applies per Section 110-708.C of the Zoning Ordinance.

This buffer treatment is indicated in orange on the map on page 3, and the landscaping requirements for the buffer are summarized in the following table and buffer planting template.

Buffer B Landscaping Requirements

Type of Requirement	Use Requirement	Zoning Ordinance	
Minimum Setback distance	Varies, depending on location (front, rear, or side) and zoning district	§110-302.A	
Buffer width	15 feet	§110-708.C(2)	
Buffer appearance	"Varied by species and distribution to achieve a more natural appearance."	§110-707.B	
	"Plantingsdistributedin a naturalistic pattern."	§110-708.H(1)	
Existing vegetation	Trees 6 inches diameter at breast height or greater to be preserved	§110-708(H)(7)	
Plant Material			
Plant Type	Quantity Per 100 linear feet	§110-708.H(2)	
Deciduous trees	4		
Evergreen trees	2		
Shrubs	6		
Plant Type	Minimum size at planting	§110-707.D(1)	
Deciduous trees Evergreen trees Shrubs	1-½ to 2-inch caliper 6 feet in height 24 to 36 inches in height ²		
Plant Type	Minimum size at maturity	§110-708.H(2)	
Deciduous trees Evergreen trees Shrubs	Exceeding 20 feet in height Exceeding 12 feet in height 3 feet in height		
Species	Primarily species native to Pennsylvania. No "weak- stem" plants.	§110-707.A, §110-708.H(6)	

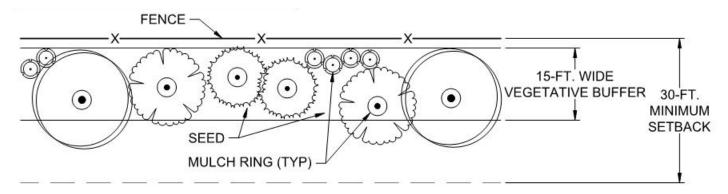
Notes:

1. 24 inches for evergreen shrubs and 36 inches for flowering/deciduous shrubs



Buffer B Planting Template (100-foot segment)

Scale: 1" = 20'



Plant Key







SHRUB



3.0 Preliminary Cost Estimate

A preliminary cost estimate for landscaping the project totals \$1,529,925.00. This includes the following:

- Plant material as summarized in the tables and illustrated in the planting templates
- Two-inch thick mulch rings for trees and shrubs
- Seeding needed to cover the areas of the buffer that are not mulched

Planting costs include installation. Mulch or other landscape material such as groundcover is required where there are not trees or shrubs planted per Section 110-708.H(4) of the Zoning Ordinance. Seeding has been included here to account for groundcover outside of mulched areas in the buffer. A 15% contingency has been added to the planting subtotal.

Brookview Solar Facility Summary of estimated planting costs Mount Joy Township, PA (Adams County) October 4, 2019

Buffer A		Quantity	Unit	Unit Cost	Amount
Plants		61,276	LF	\$18.70	\$1,145,973.00
Mulch		581	CY	\$45.00	\$26,145.00
Seeding		33.02	AC	\$2,500.00	\$82,569.00
	Planting Subtotal:				\$1,254,687.00
Buffer B		Quantity	Unit	Unit Cost	Amount
Plants		3,421	LF	\$21.00	\$71,841.00
Mulch		25	CY	\$45.00	\$1,128.00
Seeding		1.09	AC	\$2,500.00	\$2,714.00
	Planting Subtotal:				\$154,189.00
	Combined Planting Subtotal:				\$1,330,370.00
	Contingency:	15%			\$199,555.00
	TOTAL:				\$1,529,925.00



Exhibit F

Glare Analysis

Exhibit F

Brookview Solar Project

NextEra Energy Resources

Adams County, Pennsylvania

Glint & Glare Analysis

October 25, 2019



Capitol Airspace Group capitolairspace.com (703) 256 - 2485



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Summary

NextEra Energy Resources is proposing to construct solar arrays near Waltz Airport (34PA) and Kingsdale Air Park (PA23), in Adams County, Pennsylvania (*Figure 1*). On behalf of NextEra Energy Resources, Capitol Airspace performed a Glint and Glare Analysis utilizing the Solar Glare Hazard Analysis Tool (SGHAT) in order to identify any potential impacts on Waltz Airport and Kingsdale Air Park operations. Specifically, this analysis considered the impact on aircraft approaching to land on Runways 17/35 at Waltz Airport and Runways 3/21 at Kingsdale Air Park. Since neither airport is a controlled airport, this analysis did not consider the potential for impact on air traffic personnel working in an air traffic control tower (ATCT). Additionally, this analysis considered impact on residents and vehicles.

The results of the study show that there is no predicted glare from the solar array for aircraft making approaches to Runways 17/35 at Waltz Airport and Runways 3/21 at Kingsdale Air Park. These results conform to, and are in accordance with, the FAA's interim policy for *Solar Energy System Projects on Federally Obligated Airports*.

There is no predicted glare for single story or second story residences. There was also no predicted glare from the solar arrays along identified routes for cars and large trucks. Capitol Airspace has applied FAA's glint and glare standards to residences and vehicular operations due to the absence of non-aviation regulatory guidelines.

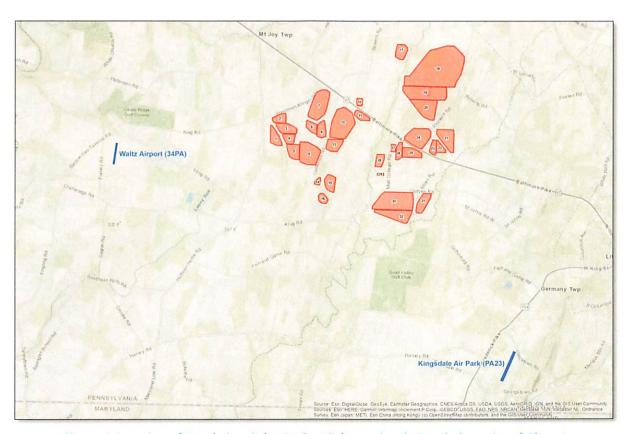


Figure 1: Location of Brookview Solar Project Solar project in Proximity to Local Airports



Methodology

The results of this analysis conform to, and are in accordance with, the FAA's interim policy for *Solar Energy System Projects on Federally Obligated Airports*. The FAA adopted this interim policy in order to enhance safety by providing standards for measuring ocular impact of proposed solar energy systems on pilots and air traffic controllers. In cooperation with the Department of Energy (DOE), the FAA developed and validated the Sandia National Laboratories' "*Solar Glare Hazard Analysis Tool*" (SGHAT), now licensed through ForgeSolar. The FAA requires the use of the SGHAT to demonstrate compliance with the standards for measuring ocular impact.

In order for the FAA to approve a revised airport layout plan depicting a solar installation and/or issue a determination of no hazard, the airport sponsor is required to show that the solar installation meets the standards set forth in the interim policy. The interim policy states that a project:

- 1. Must not have a potential for glint or glare in the existing or planned ATCT cab, (Green, Yellow, or Red) and
- 2. Must not have a potential for glare (Yellow or Red) along the final approach path for any existing landing threshold or future landing thresholds (including any planned interim phases of the landing thresholds) as shown on the current FAA-approved Airport Layout Plan (ALP). An airport may have a "low potential for after image" (Green) within these areas. The final approach path is defined as two (2) miles from fifty (50) feet above the landing threshold using a standard three (3) degree glidepath.
- 3. Ocular impact must be analyzed over the entire calendar year in one (1) minute intervals from when the sun rises above the horizon until the sun sets below the horizon.

SGHAT Assumptions:

- 1. Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
- 2. Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover, and geographic obstructions.
- 3. The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values may differ.
- 4. Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

Capitol Airspace utilized the SGHAT based guidance provided in User's Manual v.3. Solar array specifications were provided by NextEra Energy Resources. The Brookview Solar Project Arrays are single axis tracking solar arrays. Flight path data was developed by reviewing airport's specific operations before entering it into the SGHAT tool. Each flight path has configurable parameters and observation points. One of the configurable inputs allows for limiting the downward and azimuthal angles of view from the flight path to simulate a pilot's view out the window of the cockpit. NextEra Energy Resources specified that the analysis be conducted from the FAA's approved default settings in the SGHAT tool which utilizes the view from the pilot's perspective.

¹ 78 FR 63276, 10/23/2013



Data

Solar Array

NextEra Energy Resources provided the data for the array, based on the input parameters defined in the SGHAT User's Manual v.3.

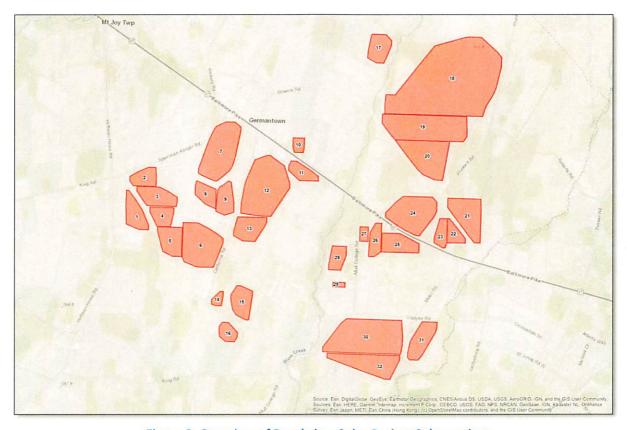


Figure 2: Overview of Brookview Solar Project Solar project

The data for the Brookview Solar Project Arrays is as follows:

Parameter	Value	
Axis tracking:	Single-axis rotation	
Tracking axis orientation:	180.0°	
Tracking axis tilt:	0.0°	
Max tracking angle:	60.0°	
Resting angle:	5.0°	
Panel material:	Smooth glass with AR coating	
Reflectivity:	Vary with sun	
Slope error:	Correlate with material	

Table 1: Brookview Solar Project Array 1 Inputs



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.764074	-77.161158	568.3	7	575.3
2	39.763286	-77.160382	568.26	7	575.26
3	39.762499	-77.159685	575.39	7	582.39
4	39.761303	-77.158991	582.48	7	589.48
5	39.760928	-77.158994	582.26	7	589.26
6	39.760933	-77.160035	585.04	7	592.04
7	39.761348	-77.161361	578.29	7	585.29
8	39.762916	-77.161426	574.03	7	581.03
9	39.764075	-77.161416	569.56	7	576.56

Table 2: Brookview Solar Project Array 1 Vertices

Parameter	Value	
Axis tracking:	Single-axis rotation	
Tracking axis orientation:	180.0°	
Tracking axis tilt:	0.0°	
Max tracking angle:	60.0°	
Resting angle:	5.0°	
Panel material:	Smooth glass with AR coating	
Reflectivity:	Vary with sun	
Slope error:	Correlate with material	

Table 3: Brookview Solar Project Array 2 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.765604	-77.160229	567.32	7	574.33
2	39.765974	-77.15913	573.09	7	580.09
3	39.76597	-77.158381	578.26	7	585.26
4	39.765186	-77.15831	576.77	7	583.77
5	39.764435	-77.158316	579.31	7	586.31
6	39.764447	-77.160709	562.4	7	569.4
7	39.764824	-77.161097	561.38	7	568.38
8	39.7652	-77.161093	557.26	7	564.26

Table 4: Brookview Solar Project Array 2 Vertices



Parameter	Value		
Axis tracking:	Single-axis rotation		
Tracking axis orientation:	180.0°		
Tracking axis tilt:	0.0°		
Max tracking angle:	60.0°		
Resting angle:	5.0°		
Panel material:	Smooth glass with AR coating		
Reflectivity:	Vary with sun		
Slope error:	Correlate with material		

Table 5: Brookview Solar Project Array 3 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.7644	-77.157926	579.68	7	586.68
2	39.764019	-77.156911	582.3	7	589.3
3	39.763606	-77.156054	581.15	7	588.15
4	39.763231	-77.156058	583.88	7	590.88
5	39.762856	-77.156139	587.48	7	594.48
6	39.762872	-77.159235	575.87	7	582.87
7	39.763249	-77.159623	570.81	7	577.81
8	39.764037	-77.160321	563.65	7	570.65
9	39.764412	-77.160318	563.01	7	570.01

Table 6: Brookview Solar Project Array 3 Vertices

Parameter	Value	
Axis tracking:	Single-axis rotation	
Tracking axis orientation:	180.0°	
Tracking axis tilt:	0.0°	
Max tracking angle:	60.0°	
Resting angle:	5.0°	
Panel material:	Smooth glass with AR coating	
Reflectivity:	Vary with sun	
Slope error:	Correlate with material	

Table 7: Brookview Solar Project Array 4 Inputs



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.762751	-77.156375	587.77	7	594.77
2	39.762376	-77.156378	590.44	7	597.44
3	39.761218	-77.156701	590.57	7	597.57
4	39.761226	-77.158133	581.81	7	588.81
5	39.762012	-77.158674	578.87	7	585.88
6	39.762389	-77.158906	577.53	7	584.53
7	39.762764	-77.158902	576.74	7	583.74

Table 8: Brookview Solar Project Array 4 Vertices

Parameter	Value		
Axis tracking:	Single-axis rotation		
Tracking axis orientation:	180.0°		
Tracking axis tilt:	0.0°		
Max tracking angle:	60.0°		
Resting angle:	5.0°		
Panel material:	Smooth glass with AR coating		
Reflectivity:	Vary with sun		
Slope error:	Correlate with material		

Table 9: Brookview Solar Project Array 5 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.761179	-77.155449	586.95	7	593.95
2	39.758828	-77.15547	585.7	7	592.7
3	39.758833	-77.156432	588.48	7	595.48
4	39.759213	-77.157446	592.87	7	599.87
5	39.760817	-77.158058	583.1	7	590.1
6	39.761192	-77.158055	582.25	7	589.25

Table 10: Brookview Solar Project Array 5 Vertices

Parameter	Value	
Axis tracking:	Single-axis rotation	
Tracking axis orientation:	180.0°	
Tracking axis tilt:	0.0°	
Max tracking angle:	60.0°	
Resting angle:	5.0°	
Panel material:	Smooth glass with AR coating	
Reflectivity:	Vary with sun	
Slope error:	Correlate with material	

Table 11: Brookview Solar Project Array 6 Inputs



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.761579	-77.153803	584.26	7	591.26
2	39.761165	-77.152711	586.77	7	593.77
3	39.760785	-77.151853	589.79	7	596.79
4	39.760373	-77.151153	590.93	7	597.93
5	39.759997	-77.151156	588.81	7	595.81
6	39.758808	-77.151714	587.13	7	594.13
7	39.758026	-77.152112	584.67	7	591.67
8	39.758035	-77.153857	581.11	7	588.12
9	39.758418	-77.155184	583.09	7	590.09
10	39.758827	-77.155415	585.77	7	592.77
11	39.761587	-77.155391	587.91	7	594.91

Table 12: Brookview Solar Project Array 6 Vertices

Parameter	Value	
Axis tracking:	Single-axis rotation	
Tracking axis orientation:	180.0°	
Tracking axis tilt:	0.0°	
Max tracking angle:	60.0°	
Resting angle:	10.0°	
Panel material:	Smooth glass with AR coating	
Reflectivity:	Vary with sun	
Slope error:	Correlate with material	

Table 13: Brookview Solar Project Array 7 Inputs



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.769758	-77.151154	566.2	7	573.2
2	39.769753	-77.150191	578.02	7	585.02
3	39.769375	-77.149568	577.47	7	584.47
4	39.768999	-77.149572	578.89	7	585.89
5	39.768012	-77.149815	583.96	7	590.96
6	39.767026	-77.150058	589.26	7	596.26
7	39.766244	-77.150378	590.62	7	597.62
8	39.765869	-77.150616	589.54	7	596.54
9	39.765392	-77.151325	588.74	7	595.74
10	39.764986	-77.151955	586.14	7	593.14
11	39.764988	-77.152213	585.31	7	592.31
12	39.765403	-77.15354	575.77	7	582.77
13	39.765568	-77.153929	573.1	7	580.11
14	39.765943	-77.153926	569.32	7	576.32
15	39.768127	-77.152968	563.64	7	570.64
16	39.768981	-77.152491	562.1	7	569.1
17	39.769388	-77.152174	561.29	7	568.29

Table 14: Brookview Solar Project Array 7 Vertices

Parameter	Value		
Axis tracking:	Single-axis rotation		
Tracking axis orientation:	180.0°		
Tracking axis tilt:	0.0°		
Max tracking angle:	60.0°		
Resting angle:	5.0°		
Panel material:	Smooth glass with AR coating		
Reflectivity:	Vary with sun		
Slope error:	Correlate with material		

Table 15: Brookview Solar Project Array 8 Inputs



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.764323	-77.152021	586.98	7	593.98
2	39.76354	-77.152028	591.4	7	598.4
3	39.762758	-77.152035	587.57	7	594.57
4	39.762758	-77.152058	587.1	7	594.1
5	39.76311	-77.15314	584.57	7	591.57
6	39.763867	-77.154218	577.64	7	584.64
7	39.764618	-77.154212	573.97	7	580.97
8	39.764979	-77.154064	573.59	7	580.59

Table 16: Brookview Solar Project Array 8 Vertices

Parameter	Value	
Axis tracking:	Single-axis rotation	
Tracking axis orientation:	180.0°	
Tracking axis tilt:	0.0°	
Max tracking angle:	60.0°	
Resting angle:	5.0°	
Panel material:	Smooth glass with AR coating	
Reflectivity:	Vary with sun	
Slope error:	Correlate with material	

Table 17: Brookview Solar Project Array 9 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.764769	-77.151143	586.82	7	593.82
2	39.765027	-77.150756	587.95	7	594.95
3	39.764933	-77.150468	588.59	7	595.59
4	39.763249	-77.150121	592.78	7	599.78
5	39.762498	-77.150127	593.32	7	600.32
6.	39.762252	-77.151099	591.79	7	598.79
7	39.762534	-77.151988	587.31	7	594.31
8	39.762909	-77.151985	588.52	7	595.52
9	39.76422	-77.151871	587.25	7	594.25
10	39.764525	-77.151652	585.84	7	592.84

Table 18: Brookview Solar Project Array 9 Vertices



Parameter	Value	
Axis tracking:	Single-axis rotation	
Tracking axis orientation:	180.0°	
Tracking axis tilt:	0.0°	
Max tracking angle:	60.0°	
Resting angle:	5.0°	
Panel material:	Smooth glass with AR coating	
Reflectivity:	Vary with sun	
Slope error:	Correlate with material	

Table 19: Brookview Solar Project Array 10 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.768591	-77.142902	570.04	7	577.04
2	39.76784	-77.142909	568.22	7	575.22
3	39.767432	-77.142991	567.32	7	574.32
4	39.767437	-77.143953	574.7	7	581.7
5	39.767865	-77.144106	577.61	7	584.61
6	39.768597	-77.144099	580.31	7	587.31

Table 20: Brookview Solar Project Array 10 Vertices

Parameter	Value	
Axis tracking:	Single-axis rotation	
Tracking axis orientation:	180.0°	
Tracking axis tilt:	0.0°	
Max tracking angle:	60.0°	
Resting angle:	5.0°	
Panel material:	Smooth glass with AR coating	
Reflectivity:	Vary with sun	
Slope error:	Correlate with material	

Table 21: Brookview Solar Project Array 11 Inputs



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.76674	-77.143675	570.06	7	577.06
2	39.765947	-77.142038	556.71	7	563.71
3	39.76554	-77.141337	550.19	7	557.19
4	39.765165	-77.141341	549.93	7	556.93
5	39.765176	-77.143321	560.81	7	567.81
6	39.765968	-77.144487	568.99	7	575.99
7	39.766344	-77.144484	576.19	7	583.19
8	39.766743	-77.144246	576.96	7	583.96

Table 22: Brookview Solar Project Array 11 Vertices

Parameter	Value
Axis tracking:	Single-axis rotation
Tracking axis orientation:	180.0°
Tracking axis tilt:	0.0°
Max tracking angle:	60.0°
Resting angle:	5.0°
Panel material:	Smooth glass with AR coating
Reflectivity:	Vary with sun
Slope error:	Correlate with material

Table 23: Brookview Solar Project Array 12 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.767139	-77.146747	590.93	7	597.93
2	39.767138	-77.14641	590.02	7	597.02
3	39.766346	-77.14493	578.74	7	585.74
4	39.764937	-77.144317	564.39	7	571.39
5	39.764561	-77.14432	564.1	7	571.1
6	39.762238	-77.146219	576	7	583
7	39.762244	-77.147416	579.87	7	586.87
8	39.762434	-77.149371	587.65	7	594.65
9	39.763185	-77.149364	590.62	7	597.62
10	39.764751	-77.149037	591.01	7	598.01
11	39.765158	-77.148877	591.01	7	598.01
12	39.766771	-77.148012	591.63	7	598.63

Table 24: Brookview Solar Project Array 12 Vertices



Parameter	Value	
Axis tracking:	Single-axis rotation	
Tracking axis orientation:	180.0°	
Tracking axis tilt:	0.0°	
Max tracking angle:	60.0°	
Resting angle:	5.0°	
Panel material:	Smooth glass with AR coating	
Reflectivity:	Vary with sun	
Slope error:	Correlate with material	

Table 25: Brookview Solar Project Array 13 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.762131	-77.146608	581.26	7	588.26
2	39.761755	-77.146611	577.82	7	584.82
3	39.761381	-77.146849	579.02	7	586.02
4	39.760194	-77.147799	580.14	7	587.14
5	39.760201	-77.149074	583.54	7	590.54
6	39.760615	-77.150088	592.09	7	599.09
7	39.76099	-77.150085	592.59	7	599.59
8	39.762147	-77.149683	591.26	7	598.26

Table 26: Brookview Solar Project Array 13 Vertices

Parameter	Value
Axis tracking:	Single-axis rotation
Tracking axis orientation:	180.0°
Tracking axis tilt:	0.0°
Max tracking angle:	60.0°
Resting angle:	5.0°
Panel material:	Smooth glass with AR coating
Reflectivity:	Vary with sun
Slope error:	Correlate with material

Table 27: Brookview Solar Project Array 14 Inputs



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.75611	-77.151342	579.49	7	586.49
2	39.756108	-77.151006	577.27	7	584.27
3	39.755732	-77.151009	576.14	7	583.14
4	39.754949	-77.151172	574.01	7	581.01
5	39.754952	-77.151744	578.02	7	585.02
6	39.755057	-77.152212	580.55	7	587.55
7	39.755433	-77.152209	581.33	7	588.33

Table 28: Brookview Solar Project Array 14 Vertices

Parameter	Value	
Axis tracking:	Single-axis rotation	
Tracking axis orientation:	180.0°	
Tracking axis tilt:	0.0°	
Max tracking angle:	60.0°	
Resting angle:	5.0°	
Panel material:	Smooth glass with AR coating	
Reflectivity:	Vary with sun	
Slope error:	Correlate with material	

Table 29: Brookview Solar Project Array 15 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.756597	-77.149585	581.67	7	588.67
2	39.756595	-77.14917	579.75	7	586.75
3	39.75618	-77.147922	563.63	7	570.63
4	39.755805	-77.147925	562.18	7	569.18
5	39.75543	-77.148007	559	7	566
6	39.753863	-77.148255	552.03	7	559.03
7	39.753865	-77.148592	556.5	7	563.51
8	39.754246	-77.149606	569.44	7	576.44
9	39.754656	-77.149993	572.63	7	579.63
10	39.755499	-77.15022	575.62	7	582.62
11	39.755874	-77.150217	576.82	7	583.82

Table 30: Brookview Solar Project Array 15 Vertices



Parameter	Value	
Axis tracking:	Single-axis rotation	
Tracking axis orientation:	180.0°	
Tracking axis tilt:	0.0°	
Max tracking angle:	60.0°	
Resting angle:	5.0°	
Panel material:	Smooth glass with AR coating	
Reflectivity:	Vary with sun	
Slope error:	Correlate with material	

Table 31: Brookview Solar Project Array 16 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.753633	-77.150401	570.86	7	577.86
2	39.752843	-77.149391	562	7	569
3	39.752468	-77.149394	561.52	7	568.52
4	39.752094	-77.149711	565.7	7	572.7
5	39.752099	-77.150673	571.85	7	578.85
6	39.752478	-77.151296	575.13	7	582.13
7	39.752887	-77.15137	573.97	7	580.97
8	39.753262	-77.151367	574.44	7	581.44
9	39.753636	-77.151051	576.59	7	583.59

Table 32: Brookview Solar Project Array 16 Vertices

Parameter	Value		
Axis tracking:	Single-axis rotation		
Tracking axis orientation:	180.0°		
Tracking axis tilt:	0.0° 60.0° 5.0° Smooth glass with AR coating		
Max tracking angle:			
Resting angle:			
Panel material:			
Reflectivity:	Vary with sun		
Slope error:	Correlate with material		

Table 33: Brookview Solar Project Array 17 Inputs



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.777104	-77.13463	566.95	7	573.95
2	39.776623	-77.134008	560.95	7	567.95
3	39.776247	-77.134011	561.05	7	568.05
4	39.77516	-77.134569	557.86	7	564.86
5	39.774786	-77.134807	559.37	7	566.37
6	39.77479	-77.135573	561.56	7	568.56
7	39.775171	-77.136508	569.62	7	576.62
8	39.775546	-77.136505	572.49	7	579.49
9	39.776737	-77.136259	576.82	7	583.82
10	39.777112	-77.1361	578.73	7	585.73

Table 34: Brookview Solar Project Array 17 Vertices

Parameter	Value		
Axis tracking:	Single-axis rotation		
Tracking axis orientation:	180.0°		
Tracking axis tilt:	0.0°		
Max tracking angle:	60.0°		
Resting angle:	10.0°		
Panel material:	Smooth glass with AR coating		
Reflectivity:	Vary with sun		
Slope error:	Correlate with material		

Table 35: Brookview Solar Project Array 18 Inputs



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.776996	-77.126465	595.27	7	602.27
2	39.777071	-77.125917	605.12	7	612.12
3	39.777064	-77.124641	609.27	7	616.27
4	39.775896	-77.12293	613.81	7	620.81
5	39.775463	-77.122464	612.32	7	619.32
6	39.774712	-77.122471	609.47	7	616.48
7	39.773064	-77.122953	597.51	7	604.51
8	39.772657	-77.123114	594.96	7	601.96
9	39.77148	-77.123988	595.91	7	602.91
10	39.770676	-77.124308	593.25	7	600.25
11	39.770732	-77.134584	552.1	7	559.1
12	39.771483	-77.134577	556.9	7	563.9
13	39.772266	-77.134492	554.52	7	561.52
14	39.772261	-77.133529	557.54	7	564.54
15	39.776285	-77.129525	578.71	7	585.71

Table 36: Brookview Solar Project Array 18 Vertices

Parameter	Value	
Axis tracking:	Single-axis rotation	
Tracking axis orientation:	180.0°	
Tracking axis tilt:	0.0°	
Max tracking angle:	60.0°	
Resting angle:	5.0°	
Panel material:	Smooth glass with AR coating	
Reflectivity:	Vary with sun	
Slope error:	Correlate with material	

Table 37: Brookview Solar Project Array 19 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.770652	-77.125952	602.44	7	609.44
2	39.76939	-77.125885	598.39	7	605.39
3	39.769014	-77.125889	595.18	7	602.18
4	39.768608	-77.126284	597.95	7	604.95
5	39.768647	-77.133429	559.1	7	566.1
6	39.769058	-77.133895	555.99	7	562.99
7	39.769949	-77.134826	550.52	7	557.52
8	39.7707	-77.134819	550.98	7	557.98

Table 38: Brookview Solar Project Array 19 Vertices



Parameter	Value	
Axis tracking:	Single-axis rotation	
Tracking axis orientation:	180.0°	
Tracking axis tilt:	0.0°	
Max tracking angle:	60.0°	
Resting angle:	5.0°	
Panel material:	Smooth glass with AR coating	
Reflectivity:	Vary with sun	
Slope error:	Correlate with material	

Table 39: Brookview Solar Project Array 20 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.765484	-77.128342	584.11	7	591.11
2	39.765488	-77.129148	590.69	7	597.69
3	39.765904	-77.130402	590.37	7	597.37
4	39.766282	-77.130946	583.58	7	590.59
5	39.76707	-77.1318	568.68	7	575.68
6	39.768647	-77.133429	559.1	7	566.1
7	39.768616	-77.127693	600.48	7	607.48

Table 40: Brookview Solar Project Array 20 Vertices

Parameter	Value		
Axis tracking:	Single-axis rotation		
Tracking axis orientation:	180.0°		
Tracking axis tilt:	0.0°		
Max tracking angle:	60.0°		
Resting angle:	5.0°		
Panel material:	Smooth glass with AR coating		
Reflectivity:	Vary with sun		
Slope error:	Correlate with material		

Table 41: Brookview Solar Project Array 21 Inputs



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.76405	-77.124285	556.55	7	563.56
2	39.763266	-77.124214	548.4	7	555.4
3	39.761731	-77.124228	536.16	7	543.16
4	39.760506	-77.124239	528.7	7	535.7
5	39.76051	-77.124888	527.62	7	534.62
6	39.76253	-77.126983	562.08	7	569.08
7	39.762908	-77.127371	565.99	7	573
8	39.763318	-77.127758	570.73	7	577.73
9	39.764069	-77.127751	575.24	7	582.24

Table 42: Brookview Solar Project Array 21 Vertices

Parameter	Value	
Axis tracking:	Single-axis rotation	
Tracking axis orientation:	180.0°	
Tracking axis tilt:	0.0°	
Max tracking angle:	60.0°	
Resting angle:	5.0°	
Panel material:	Smooth glass with AR coating	
Reflectivity:	Vary with sun	
Slope error:	Correlate with material	

Table 43: Brookview Solar Project Array 22 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.76241	-77.127493	563.32	7	570.32
2	39.762033	-77.127106	559.44	7	566.45
3	39.760842	-77.125786	533.52	7	540.52
4	39.760467	-77.12579	531.28	7	538.28
5	39.760447	-77.127746	553.88	7	560.88
6	39.762412	-77.127728	565.32	7	572.32

Table 44: Brookview Solar Project Array 22 Vertices



Parameter	Value	
Axis tracking:	Single-axis rotation	
Tracking axis orientation:	180.0°	
Tracking axis tilt:	0.0°	
Max tracking angle:	60.0°	
Resting angle:	10.0°	
Panel material:	Smooth glass with AR coating	
Reflectivity:	Vary with sun	
Slope error:	Correlate with material	

Table 45: Brookview Solar Project Array 23 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.762412	-77.127728	565.32	7	572.32
2	39.760447	-77.127746	553.88	7	560.88
3	39.760039	-77.127906	550.32	7	557.32
4	39.760041	-77.128165	550.57	7	557.57
5	39.760454	-77.1291	556.46	7	563.46
6	39.76083	-77.129096	561.21	7	568.21
7	39.762416	-77.128534	574.01	7	581.01

Table 46: Brookview Solar Project Array 23 Vertices

Parameter	Value	
Axis tracking:	Single-axis rotation	
Tracking axis orientation:	180.0°	
Tracking axis tilt:	0.0°	
Max tracking angle:	60.0°	
Resting angle:	5.0°	
Panel material:	Smooth glass with AR coating	
Reflectivity:	Vary with sun	
Slope error:	Correlate with material	

Table 47: Brookview Solar Project Array 24 Inputs



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.76412	-77.129344	587.92	7	594.92
2	39.763709	-77.128878	586.56	7	593.56
3	39.762959	-77.128885	585.16	7	592.16
4	39.762515	-77.129147	583.74	7	590.74
5	39.76097	-77.130625	582.5	7	589.5
6	39.760972	-77.130961	587.45	7	594.45
7	39.761387	-77.132131	577.41	7	584.41
8	39.761767	-77.132989	569.31	7	576.31
9	39.762406	-77.134235	560.25	7	567.25
10	39.762781	-77.134232	562.79	7	569.79
11	39.763359	-77.133522	568.15	7	575.15
12	39.763732	-77.133049	568.82	7	575.82
13	39.764137	-77.13242	572.44	7	579.44

Table 48: Brookview Solar Project Array 24 Vertices

Parameter	Value
Axis tracking:	Single-axis rotation
Tracking axis orientation:	180.0°
Tracking axis tilt:	0.0°
Max tracking angle:	60.0°
Resting angle:	5.0°
Panel material:	Smooth glass with AR coating
Reflectivity:	Vary with sun
Slope error:	Correlate with material

Table 49: Brookview Solar Project Array 25 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.761128	-77.132654	574.36	7	581.36
2	39.760747	-77.13164	579.57	7	586.57
3	39.760333	-77.130627	573.39	7	580.39
4	39.759582	-77.130634	575.85	7	582.85
5	39.759603	-77.13457	554.18	7	561.19
6	39.761138	-77.134556	558.21	7	565.21

Table 50: Brookview Solar Project Array 25 Vertices



Parameter	Value		
Axis tracking:	Single-axis rotation		
Tracking axis orientation:	180.0°		
Tracking axis tilt:	0.0°		
Max tracking angle:	60.0°		
Resting angle:	10.0°		
Panel material:	Smooth glass with AR coating		
Reflectivity:	Vary with sun		
Slope error:	Correlate with material		

Table 51: Brookview Solar Project Array 26 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.761922	-77.134603	555.89	7	562.89
2	39.759604	-77.134624	554.18	7	561.19
3	39.759199	-77.135332	549.35	7	556.35
4	39.759202	-77.135903	547.25	7	554.25
5	39.759577	-77.1359	548.54	7	555.55
6	39.761145	-77.135808	549.73	7	556.73
7	39.761925	-77.135253	552.92	7	559.92

Table 52: Brookview Solar Project Array 26 Vertices

Parameter	Value
Axis tracking:	Single-axis rotation
Tracking axis orientation:	180.0°
Tracking axis tilt:	0.0°
Max tracking angle:	60.0°
Resting angle:	5.0°
Panel material:	Smooth glass with AR coating
Reflectivity:	Vary with sun
Slope error:	Correlate with material

Table 53: Brookview Solar Project Array 27 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.761585	-77.135983	549.44	7	556.44
2	39.760425	-77.135993	549.77	7	556.77
3	39.76043	-77.136878	544.77	7	551.77
4	39.761589	-77.136867	545.48	7	552.48

Table 54: Brookview Solar Project Array 27 Vertices



Parameter	Value		
Axis tracking:	Single-axis rotation		
Tracking axis orientation:	180.0°		
Tracking axis tilt:	0.0°		
Max tracking angle:	60.0°		
Resting angle:	5.0°		
Panel material:	Smooth glass with AR coating		
Reflectivity:	Vary with sun		
Slope error:	Correlate with material		

Table 55: Brookview Solar Project Array 28 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.759978	-77.138209	540.63	7	547.63
2	39.759227	-77.138216	539.45	7	546.45
3	39.758038	-77.138774	537.32	7	544.32
4.	39.758045	-77.14005	539.42	7	546.42
5	39.75842	-77.140046	534.05	7	541.05
6	39.759986	-77.139719	540.82	7	547.82

Table 56: Brookview Solar Project Array 28 Vertices

Parameter	Value	
Axis tracking:	Single-axis rotation	
Tracking axis orientation:	180.0°	
Tracking axis tilt:	0.0°	
Max tracking angle:	60.0°	
Resting angle:	5.0°	
Panel material:	Smooth glass with AR coating	
Reflectivity:	Vary with sun	
Slope error:	Correlate with material	

Table 57: Brookview Solar Project Array 29 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.757059	-77.138279	539.07	7	546.07
2	39.756684	-77.138283	537.43	7	544.43
3	39.75669	-77.139558	532.07	7	539.07
4	39.757066	-77.139555	532.23	7	539.23

Table 58: Brookview Solar Project Array 29 Vertices



Parameter	Value	
Axis tracking:	Single-axis rotation	
Tracking axis orientation:	180.0°	
Tracking axis tilt:	0.0°	
Max tracking angle:	60.0°	
Resting angle:	5.0°	
Panel material:	Smooth glass with AR coating	
Reflectivity:	Vary with sun	
Slope error:	Correlate with material	

Table 59: Brookview Solar Project Array 30 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.754136	-77.132256	541.67	7	548.67
2	39.752943	-77.13211	530.71	7	537.71
3	39.752192	-77.132117	525.86	7	532.86
4	39.751409	-77.132281	524.07	7	531.08
5	39.751453	-77.140468	523.37	7	530.37
6	39.751829	-77.140465	522.5	7	529.5
7	39.752982	-77.139359	529.09	7	536.09
8	39.753762	-77.138648	534.94	7	541.94
9	39.754167	-77.138019	544.89	7	551.89

Table 60: Brookview Solar Project Array 30 Vertices

Parameter	Value
Axis tracking:	Single-axis rotation
Tracking axis orientation:	180.0°
Tracking axis tilt:	0.0°
Max tracking angle:	60.0°
Resting angle:	5.0°
Panel material:	Smooth glass with AR coating
Reflectivity:	Vary with sun
Slope error:	Correlate with material

Table 61: Brookview Solar Project Array 31 Inputs



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.754056	-77.128542	525.27	7	532.27
2	39.75368	-77.128545	524.36	7	531.36
3	39.753272	-77.128676	520.9	7	527.9
4	39.751337	-77.130051	519.37	7	526.37
5	39.750964	-77.130448	520.51	7	527.51
6	39.750968	-77.131332	519.08	7	526.08
7	39.751165	-77.131567	517.83	7	524.83
8	39.751541	-77.131564	518.8	7	525.8
9	39.752503	-77.131318	524.52	7	531.52
10	39.754064	-77.13013	529.6	7	536.6

Table 62: Brookview Solar Project Array 31 Vertices

Parameter	Value
Axis tracking:	Single-axis rotation
Tracking axis orientation:	180.0°
Tracking axis tilt:	0.0°
Max tracking angle:	60.0°
Resting angle:	10.0°
Panel material:	Smooth glass with AR coating
Reflectivity:	Vary with sun
Slope error:	Correlate with material

Table 63: Brookview Solar Project Array 32 Inputs

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground (feet)	Total Elevation
1	39.751304	-77.13236	524.87	7	531.87
2	39.750929	-77.132363	520.73	7	527.73
3	39.749367	-77.133316	516.63	7	523.63
4	39.74937	-77.133887	521.51	7	528.52
5	39.749787	-77.135527	522.62	7	529.62
6	39.75097	-77.139976	526.02	7	533.02
7	39.751345	-77.139972	528.43	7	535.44

Table 64: Brookview Solar Project Array 32 Vertices



Runway 03/21

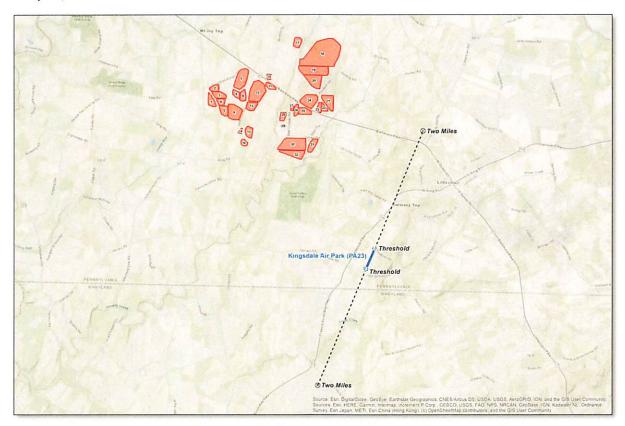


Figure 3: Runway 03/21 SGHAT flight path and Brookview Solar Project Solar project

Parameter	Runway 03	Runway 21
Threshold height (ft)	50.0	50.0
Direction (deg)	21.0	201.0
Glide slope (deg)	3.0	3.0
Consider pilot visibility from cockpit	Yes	Yes

Table 65 Runway 03/21 flight path and viewing parameters

Runway	Observation Point	Latitude	Longitude	Ground Elevation (feet)	Height above ground (feet)	Total Elevation (feet)
00	Threshold	39.729496	-77.11092	585.91	50	635.91
03	Two-mile	39.756488	-77.097432	563.82	625.55	1189.37
21	Threshold	39.724933	-77.113329	561.77	50	611.78
21	Two-mile	39.69794	-77.126816	531.04	634.19	1165.23

Table 66: Runway 03/21 flight path observation points



Runway 17/35

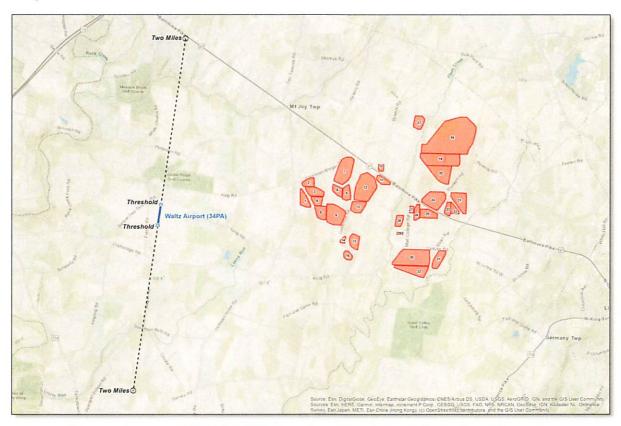


Figure 4: Runway 17/35 SGHAT flight path and Brookview Solar Project Solar project

Parameter Parame	Runway 17	Runway 35
Threshold height (ft)	50.0	50.0
Direction (deg)	187.0	7.0
Glide slope (deg)	3.0	3.0
Consider pilot visibility from cockpit	Yes	Yes

Table 67: Runway 17/35 flight path and viewing parameters

Runway	Observation Point	Latitude	Longitude	Ground Elevation (feet)	Height above ground (feet)	Total Elevation (feet)
	Threshold	39.760667	-77.192455	526.68	50	576.68
17	Two-mile	39.789364	-77.187865	519.29	610.85	1130.14
25	Threshold	39.757462	-77.192998	527.07	50	577.07
35	Two-mile	39.728765	-77.197587	517.93	612.6	1130.53

Table 68: Runway 17/35 flight path observation points



Brookview Solar Project Solar Discrete Observation Points - Residents



Figure 5: Location of Brookview Solar Project Arrays Discrete Observation Points - Residents



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground - Single Story (feet)	Total Elevation - Single Story	Height Above Ground – Second Story (feet)	Total Elevation - Second Story
OP 1	39.76485	-77.162542	564.46	8	572.46	16	580.46
OP 2	39.763848	-77.162051	568.79	8	576.79	16	584.79
OP 3	39.763172	-77.162008	568.86	8	576.86	16	584.86
OP 4	39.762117	-77.162137	570.01	8	578.01	16	586.01
OP 5	39.760266	-77.163158	581.39	8	589.39	16	597.42
OP 6	39.759572	-77.162021	587.35	8	595.35	16	603.35
OP 7	39.758464	-77.162573	593.1	8	601.1	16	609.1
OP 8	39.756043	-77.152549	584.11	8	592.11	16	600.11
OP 9	39.75509	-77.153322	586.66	8	594.66	16	602.66
OP 10	39.750324	-77.157101	563.97	8	571.97	16	579.97
OP 11	39.749356	-77.154352	569.56	8	577.56	16	585.56
OP 12	39.749026	-77.147575	546.12	8	554.12	16	562.12
OP 13	39.748698	-77.144705	521.24	8	529.24	16	537.24
OP 14	39.750551	-77.143219	523.45	8	531.45	16	539.45
OP 15	39.750223	-77.142127	524.75	8	532.75	16	540.75
OP 16	39.756278	-77.143242	550.97	8	558.97	16	566.97
OP 17	39.7544	-77.138604	539.33	8	547.33	16	555.33
OP 18	39.754858	-77.137558	549.18	8	557.18	16	565.18
OP 19	39.755829	-77.134798	552.24	8	560.24	16	568.24
OP 20	39.754941	-77.135481	556.54	8	564.54	16	572.54
OP 21	39.755097	-77.132429	550.59	8	558.59	16	566.59
OP 22	39.760398	-77.138443	542.17	8	550.17	16	558.17
OP 23	39.760996	-77.138877	545.35	8	553.35	16	561.35
OP 24	39.761871	-77.143229	555.41	8	563.41	16	571.41
OP 25	39.766499	-77.160904	571.86	8	579.86	16	587.86
OP 26	39.766961	-77.158522	576.58	8	584.58	16	592.58
OP 27	39.765588	-77.157315	584.06	8	592.06	16	600.06
OP 28	39.766136	-77.155765	580.98	8	588.98	16	596.98
OP 29	39.768053	-77.154354	570.75	8	578.75	16	586.75
OP 30	39.769883	-77.149644	581.26	8	589.26	16	597.26
OP 31	39.770464	-77.150804	567.98	8	575.98	16	583.98
OP 32	39.770698	-77.151419	564.74	8	572.74	16	580.74
OP 33	39.77029	-77.149676	579.14	8	587.14	16	595.14

Table 69: Brookview Solar Project Arrays Discrete Observation Receptors – Set A



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground - Single Story (feet)	Total Elevation - Single Story	Height Above Ground – Second Story (feet)	Total Elevation - Second Story
OP 34	39.769405	-77.148588	585.3	8	593.3	16	601.3
OP 35	39.76894	-77.14818	586.29	8	594.29	16	602.29
OP 36	39.768927	-77.147665	588.86	8	596.86	16	604.86
OP 37	39.768226	-77.14839	592.51	8	600.51	16	608.51
OP 38	39.764919	-77.14038	549.79	8	557.79	16	565.79
OP 39	39.765511	-77.140158	555.32	8	563.32	16	571.32
OP 40	39.763885	-77.13808	546.33	8	554.33	16	562.33
OP 41	39.76273	-77.136639	553.6	8	561.6	16	569.6
OP 42	39.763222	-77.135782	556.76	8	564.76	16	572.76
OP 43	39.761519	-77.134003	567.62	8	575.62	16	583.62
OP 44	39.759861	-77.127416	554.34	8	562.34	16	570.34
OP 45	39.758475	-77.12332	532.11	8	540.11	16	548.11
OP 46	39.754745	-77.128474	529.3	8	537.3	16	545.3
OP 47	39.755508	-77.129375	537.95	8	545.95	16	553.95
OP 48	39.756127	-77.133721	557.64	8	565.64	16	573.64
OP 49	39.75642	-77.128624	534.01	8	542.01	16	550.01
OP 50	39.75503	-77.130647	535.82	8	543.82	16	551.82
OP 51	39.757772	-77.131745	567.45	8	575.45	16	583.45
OP 52	39.756205	-77.1383	539.7	8	547.7	16	555.7
OP 53	39.756246	-77.136771	550.63	8	558.63	16	566.63
OP 54	39.757158	-77.13764	545.78	8	553.78	16	561.78
OP 55	39.759458	-77.137546	546.32	8	554.32	16	562.32
OP 56	39.759718	-77.137507	548.11	8	556.11	16	564.11
OP 57	39.759923	-77.13665	551.51	8	559.51	16	567.51
OP 58	39.773099	-77.135779	563.64	8	571.64	16	579.64
OP 59	39.775672	-77.137624	585.62	8	593.62	16	601.62
OP 60	39.780531	-77.127923	585.82	8	593.82	16	601.82
OP 61	39.780558	-77.137503	613.69	8	621.69	16	629.69
OP 62	39.774761	-77.121581	612.9	8	620.9	16	628.9
OP 63	39.768386	-77.14665	592.44	8	600.44	16	608.44
OP 64	39.768015	-77.146216	596.87	8	604.87	16	612.87
OP 65	39.764433	-77.133057	573.99	8	581.99	16	589.99

Table 70: Brookview Solar Project Arrays Discrete Observation Receptors – Set B



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground - Single Story (feet)	Total Elevation - Single Story	Height Above Ground – Second Story (feet)	Total Elevation - Second Story
OP 66	39.764602	-77.131134	595.94	8	603.94	16	611.94
OP 67	39.764617	-77.12879	588.75	8	596.75	16	604.75
OP 68	39.766971	-77.126456	593.73	8	601.73	16	609.73
OP 69	39.768163	-77.125147	590.62	8	598.62	16	606.62
OP 70	39.769322	-77.124536	591.47	8	599.47	16	607.47
OP 71	39.77107	-77.123329	592.42	8	600.42	16	608.42
OP 72	39.772847	-77.12194	605.81	8	613.81	16	621.81
OP 73	39.749958	-77.139575	527.95	8	535.95	16	543.95
OP 74	39.750429	-77.130972	520.4	8	528.4	16	536.4
OP 75	39.761505	-77.150568	598.02	8	606.02	16	614.02
OP 76	39.762667	-77.155695	587.73	8	595.73	16	603.73
OP 77	39.774905	-77.140066	587.73	8	595.73	16	603.73
OP 78	39.779127	-77.141225	598.44	8	606.44	16	614.44
OP 79	39.770296	-77.125185	605.92	8	613.92	16	621.92
OP 80	39.75462	-77.129975	535.99	8	543.99	16	551.99
OP 81	39.749135	-77.134485	537.67	8	545.67	16	553.67
OP 82	39.75693	-77.15112	585.03	8	593.03	16	601.03

Table 71: Brookview Solar Project Arrays Discrete Observation Receptors – Set C



Brookview Solar Project Solar Discrete Observation Points - Routes

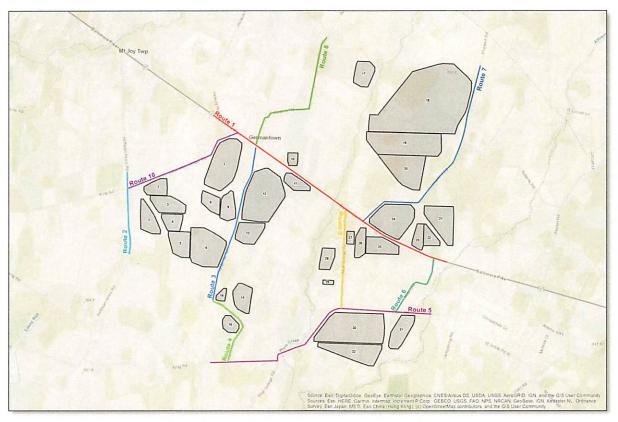


Figure 6: Location of Brookview Solar Project Arrays Discrete Observation Points - Routes



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground – Cars (feet)	Total Elevation - Cars	Height Above Ground – Trucks (feet)	Total Elevation - Trucks
1	39.771872	-77.153038	546.97	4	550.97	8	554.97
2	39.76905	-77.147585	584.85	4	588.85	8	592.85
3	39.767444	-77.144476	580.6	4	584.6	8	588.6
4	39.765904	-77.141507	553.75	4	557.75	8	561.75
5	39.763785	-77.137422	543.25	4	547.25	8	551.25
6	39.762475	-77.134879	556.23	4	560.23	8	564.23
7	39.761536	-77.133041	563.71	4	567.71	8	571.71
8	39.761139	-77.132085	565.31	4	569.31	8	573.31
9	39.760789	-77.13109	564.13	4	568.13	8	572.13
10	39.760117	-77.129068	554.19	4	558.19	8	562.19
11	39.759777	-77.128051	546.06	4	550.06	8	554.06
12	39.759466	-77.127035	540.03	4	544.03	8	548.03
13	39.759221	-77.126039	529.4	4	533.4	8	537.4
14	39.758997	-77.124908	526.62	4	530.62	8	534.62

Table 72: Brookview Solar Project Arrays Observation Receptors Route 1

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground – Cars (feet)	Total Elevation - Cars	Height Above Ground – Trucks (feet)	Total Elevation - Trucks
1	39.766499	-77.163128	540.57	4	544.57	8	548.57
2	39.764864	-77.16304	551.62	4	555.62	8	559.62
3	39.761614	-77.162827	565.98	4	569.98	8	573.98
4	39.760705	-77.162618	574.04	4	578.04	8	582.04
5	39.760252	-77.162545	579.85	4	583.85	8	587.85
6	39.759783	-77.162551	584.71	4	588.71	8	592.71
7	39.759051	-77.162647	589.76	4	593.76	8	597.76

Table 73: Brookview Solar Project Arrays Observation Receptors Route 2



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground – Cars (feet)	Total Elevation - Cars	Height Above Ground – Trucks (feet)	Total Elevation - Trucks
1	39.769009	-77.147901	586.1	4	590.1	8	594.1
2	39.766682	-77.148311	591.91	4	595.91	8	599.91
3	39.766327	-77.148477	593.35	4	597.35	8	601.35
4	39.765181	-77.149185	594.48	4	598.48	8	602.48
5	39.76375	-77.149561	592.11	4	596.11	8	600.11
6	39.761841	-77.150065	594.2	4	598.2	8	602.2
7	39.761189	-77.150325	592.52	4	596.52	8	600.52
8	39.76055	-77.150612	589.98	4	593.98	8	597.98
9	39.757468	-77.152053	584.97	4	588.97	8	592.97
10	39.75501	-77.152586	580.07	4	584.07	8	588.07

Table 74: Brookview Solar Project Arrays Observation Receptors Route 3

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground – Cars (feet)	Total Elevation - Cars	Height Above Ground – Trucks (feet)	Total Elevation - Trucks
1	39.754912	-77.152519	579.88	4	583.88	8	587.88
2	39.754599	-77.151555	575.06	4	579.06	8	583.06
3	39.753406	-77.149493	560.24	4	564.24	8	568.24
4	39.752994	-77.149116	554.89	4	558.89	8	562.89
5	39.752676	-77.148896	557.31	4	561.31	8	565.31
6	39.752487	-77.148974	556.68	4	560.68	8	564.68
7	39.752123	-77.149297	559.63	4	563.63	8	567.63
8	39.751646	-77.149737	562.92	4	566.92	8	570.92
9	39.751313	-77.149979	560.93	4	564.93	8	568.93
10	39.749415	-77.150663	560.6	4	564.6	8	568.6

Table 75: Brookview Solar Project Arrays Observation Receptors Route 4



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground – Cars (feet)	Total Elevation - Cars	Height Above Ground – Trucks (feet)	Total Elevation - Trucks
1	39.749315	-77.152694	564.65	4	568.65	8	572.65
2	39.749378	-77.15111	563.07	4	567.07	8	571.07
3	39.749622	-77.144753	519.94	4	523.94	8	527.94
4	39.750195	-77.14469	514.66	4	518.66	8	522.66
5	39.750858	-77.142612	519.58	4	523.58	8	527.58
6	39.751155	-77.141496	518.51	4	522.51	8	526.51
7	39.754057	-77.138739	534.43	4	538.43	8	542.43
8	39.754391	-77.138101	539.34	4	543.34	8	547.34
9	39.754544	-77.137457	548.12	4	552.12	8	556.12
10	39.754208	-77.126638	515.09	4	519.09	8	523.09

Table 76: Brookview Solar Project Arrays Observation Receptors Route 5

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground – Cars (feet)	Total Elevation - Cars	Height Above Ground – Trucks (feet)	Total Elevation - Trucks
1	39.754354	-77.130808	531.61	4	535.61	8	539.61
2	39.755732	-77.129768	537.13	4	541.13	8	545.13
3	39.756421	-77.129232	535.29	4	539.29	8	543.29
4	39.756801	-77.128919	534.06	4	538.06	8	542.06
5	39.756937	-77.128767	533	4	537	8	541
6	39.757053	-77.128605	532.04	4	536.04	8	540.04
7	39.757081	-77.128426	531.38	4	535.38	8	539.38
8	39.757063	-77.128247	529.54	4	533.54	8	537.54
9	39.756996	-77.127889	527.45	4	531.45	8	535.45
10	39.756933	-77.127527	526.27	4	530.27	8	534.27
11	39.756929	-77.127326	527.63	4	531.63	8	535.63
12	39.757017	-77.127167	531.37	4	535.37	8	539.37
13	39.75803	-77.126636	531.74	4	535.74	8	539.74
14	39.759267	-77.126493	532.85	4	536.85	8	540.85

Table 77: Brookview Solar Project Arrays Observation Receptors Route 6



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground – Cars (feet)	Total Elevation - Cars	Height Above Ground – Trucks (feet)	Total Elevation - Trucks
1	39.762588	-77.134934	556.24	4	560.24	8	564.24
2	39.763506	-77.133735	565.46	4	569.46	8	573.46
3	39.764369	-77.132487	571.06	4	575.06	8	579.06
4	39.764322	-77.12862	580.17	4	584.17	8	588.17
5	39.764392	-77.128389	581.85	4	585.85	8	589.85
6	39.765642	-77.127197	585.54	4	589.54	8	593.54
7	39.766839	-77.125929	586.71	4	590.71	8	594.71
8	39.768	-77.124527	576.13	4	580.13	8	584.13
9	39.768288	-77.124312	575.7	4	579.7	8	583.7
10	39.769154	-77.123867	582.29	4	586.29	8	590.29
11	39.769981	-77.123464	587.78	4	591.78	8	595.78
12	39.770841	-77.123207	587.86	4	591.86	8	595.86
13	39.77149	-77.123022	586.75	4	590.75	8	594.75
14	39.77223	-77.122917	591.7	4	595.7	8	599.7
15	39.776939	-77.121496	615.72	4	619.72	8	623.72

Table 78: Brookview Solar Project Arrays Observation Receptors Route 7

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground – Cars (feet)	Total Elevation - Cars	Height Above Ground – Trucks (feet)	Total Elevation - Trucks
1	39.769287	-77.147899	585	4	589	8	593
2	39.77054	-77.147465	577.6	4	581.6	8	585.6
3	39.77173	-77.146931	580.8	4	584.8	8	588.8
4	39.771835	-77.146505	578.05	4	582.05	8	586.05
5	39.772179	-77.146247	576.42	4	580.42	8	584.42
6	39.772536	-77.143887	580.61	4	584.61	8	588.61
7	39.77256	-77.14279	588.34	4	592.34	8	596.34
8	39.772631	-77.141714	592.05	4	596.05	8	600.05
9	39.777467	-77.140657	603.56	4	607.56	8	611.56
10	39.778633	-77.140346	600.29	4	604.29	8	608.29
11	39.779171	-77.139803	598.93	4	602.93	8	606.93

Table 79: Brookview Solar Project Arrays Observation Receptors Route 8



ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground – Cars (feet)	Total Elevation - Cars	Height Above Ground – Trucks (feet)	Total Elevation - Trucks
1	39.763578	-77.137111	546.18	4	550.18	8	554.18
2	39.754563	-77.137315	549.04	4	553.04	8	557.04

Table 80: Brookview Solar Project Arrays Observation Receptors Route 9

ID	Latitude	Longitude	Ground Elevation (feet)	Height Above Ground – Cars (feet)	Total Elevation - Cars	Height Above Ground – Trucks (feet)	Total Elevation - Trucks
1	39.765023	-77.162937	551.79	4	555.79	8	559.79
2	39.766969	-77.156789	573.02	4	577.02	8	581.02
3	39.768232	-77.153227	559.79	4	563.79	8	567.79
4	39.768885	-77.152854	556.3	4	560.3	8	564.3
5	39.769229	-77.152682	560.32	4	564.32	8	568.32
6	39.769521	-77.152455	560.37	4	564.37	8	568.37
7	39.76993	-77.15128	561.32	4	565.32	8	569.32
8	39.77031	-77.150084	571.06	4	575.06	8	579.06

Table 81: Brookview Solar Project Arrays Observation Receptors Route 10



Results

Capitol Airspace utilized the above specified inputs to analyze potential glint and glare at various points along the flight paths. Runway end coordinates were obtained from the FAA National Flight Data Center (NFDC) National Airspace System Resources (NASR) dataset. SGHAT uses this information to analyze each flight path between a two-mile final and the runway threshold.

If glare is detected, "Glare Occurrence Plots" are generated by SGHAT. The plots show when glare can occur (as viewed from the prescribed observation point) throughout the year. The color indicates the potential ocular hazard. The colors are defined as:

- Green: Low potential for temporary after-image glare
- Yellow: Potential for temporary after-image glare
- Red: Potential for permanent eye damage glare

The results of this analysis predicted no glare for any receptor (Table 82).

Receptor	Green Glare (minutes / year)	Yellow Glare (minutes / year)	Red Glare (minutes / year)
Runway 17	0	0	0
Runway 35	0	0	0
Runway 3	0	0	0
Runway 21	0	0	0
Residences Single Story	0	0	0
Residences Two Story	0	0	0
Route Cars	0	0	0
Route Trucks	0	0	0

Table 82: Brookview Solar Project Glint and Glare Summary



Conclusion

The SGHAT analyzed the expected total footprints of the arrays for the Brookview Solar Project. The SGHAT findings indicated that no glare is predicted from the project arrays for the approaches to Runways 17/35 at Waltz Airport and Runways 3/21 at Kingsdale Air Park. The findings show that the project is compliant with the FAA interim policy for *Solar Energy System Projects on Federally Obligated Airports*.

There is no predicted glare for residences with an estimated single story viewing height of 8 feet and a second story viewing height of 16 feet. Additionally, there was no predicted glare from the solar arrays along the routes for cars with an estimated viewing height of 4 feet and large trucks with an estimated viewing height of 8 feet. Capitol Airspace has applied FAA's glint and glare standards to vehicular operations due to the absence of non-aviation regulatory guidelines.

If you have any questions regarding the findings in this analysis, please contact *Rick Coles* at (703) 256-2485.

Exhibit G

Public Utility Approval Process

The Applicant has completed a system impact study and facility study agreement. It intends to complete an interconnection study by November 30, 2019. It plans to complete an Interconnection Agreement by January 30, 2020 and an Interconnection Construction Service Agreement by February 28, 2020.

Exhibit H

Community Support and Company Information Documents

Ruth's Harvest Gettysburg PO Box 4771 Gettysburg, PA 17325 717-430-0567



Mr. Daniel Moretz

NextEra Energy Resources, LLC

700 Universe Blvd ESE

Juno Beach, FL 33408

Aug. 8, 2019

Dear M. Moretz,

Ruth's Harvest, Gettysburg wishes to thank your company, in advance, for your generous donation of \$1,500 to our program. Beginning after Labor Day we will begin packing bags that contain 6 balanced meals and a snack for over 300 Gettysburg students who are food insecure. 100% of the donation will be used to purchase food so the children have food during the week-end.

Thank you again,

Sincerely,

Jerry Cleaver, VP

Jerry Cleaver

Community News

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NextEra makes donation to Ruth's Harvest program

Submitted Photo Sep 5, 2019



The NextEra Energy Resources LLC of Juno Beach, Fla., recently presented a check for \$1,500 to Ruth's Harvest, Gettysburg. NextEra is a large electric power generating company that currently is in the process of establishing solar panel fields in Mt. Joy Township. NextEra will be providing new, clean sources of power for the Gettysburg area and they want to contribute to the community by helping to reduce hunger for the children. Christine Shaw, senior land agent, presented the check in Ruth's Harvest's pantry to Shawn Waybrant, pantry manager, (left) and Jerry Cleaver, vice president. Shaw was given a tour of the pantry's operation and an overview of the backpack program. NextEra's donation will help purchase food from the South Central Pennsylvania Food Bank and Giant and Kennie's food stores.

Submitted Photo



November 7, 2019

Heather R. Barone
Regional Environmental Advisor
NextEra Energy Resources, LLC | Environmental Services
700 Universe Blvd., Mailstop JES/JB - C5023
Juno Beach, FL 33408

Dear Ms. Barone,

It is my pleasure to provide this letter of preliminary support for NextEra Energy Resources proposed 75 megawatt (MW) Brookview Solar photovoltaic Project in Mt. Joy Township, Adams County, PA. PennFuture supports the increase in renewable energy projects and as such projects like Brookview Solar. We look forward to obtaining additional details through the permitting process.

On behalf of PennFuture, I wish you success with this worthy project.

Sincerely,

Jacquelyn Bonomo President and CEO



ECONOMIC AND SOCIAL IMPACTS

As one of the nation's largest investors of energy infrastructure, NextEra Energy Inc. is working to solve America's energy challenges both sustainably and responsibly for the benefit of our customers, communities and shareholders.

- We have invested more than \$85 billion in energy infrastructure since 2004,
- We were among the largest U.S. capital investors in any industry in 2017,
- We're planning more than \$40 billion in new infrastructure investments from 2017 through 2020,
- We are an American owned and operated company,
- We have been recognized often by third parties for our efforts in sustainability, corporate responsibility, ethics and compliance, and diversity, and have been ranked in the top 25 worldwide across all companies for innovativeness and community responsibility as part of Fortune's 2019 list of "World's Most Admired Companies" as well as the No. 1 company in the electric and gas utilities industry, and
- Renewable energy is homegrown energy, reducing our dependence on foreign oil and driving economic growth in America.

At NextEra Energy Resources, we believe in building strong partnerships and supporting the communities we serve. In addition to creating jobs, improving roads and contributing significantly to the local tax base, renewable energy projects provide indirect income to local businesses, including hotels, restaurants, caterers and office supply companies. We donate to and participate in local community activities and causes, including charities and other nonprofit organizations including: Ruth's Harvest Gettysburg, Hoffman Homes for Youth, and the Adams County Chamber of Commerce. In 2017, NEER projects supported communities in the U.S. and Canada with more than \$627 million in property tax revenue from our projects. At every stage of developing a renewable energy project, from siting to construction to operations, we strive to:

- Establish a cooperative relationship with the community,
- Listen to our neighbors,
- Share information, and
- Ensure that our proposal fits the interests and priorities of the community.

We also meet with elected and appointed officials, civic associations, environmental groups and other community organizations. We periodically share new information, as it becomes available, to provide project updates to the community. Wind and solar energy provides much-needed tax income to local communities – to schools, libraries and other vital public services, benefiting the entire community. Our goal is to hire as many workers as possible from the local area where we construct our wind and solar generation plants.

 Hundreds of construction jobs are created for each renewable energy project, as well as several full-time positions once the asset is operational.



- Projects also create job opportunities for a variety of support functions including engineers, biologists, lawyers, environmental and permitting consultants.
- Construction typically takes between six and nine months.

At NextEra Energy Resources, we believe in building strong partnerships and supporting the communities we serve. At every stage of developing a solar or wind energy center, from siting to construction to operations, we strive to establish a cooperative relationship with the community; listen to our neighbors; share information; and ensure that our proposal fits the interests and priorities of the community. We also meet with elected and appointed officials, civic associations, environmental groups and other community organizations. We periodically share new information, as it becomes available, to provide project updates to the community. In addition to creating jobs, improving roads and contributing significantly to the local tax base, wind and solar farms provide indirect income to local businesses, including hotels, restaurants, caterers and office supply companies. We donate to and participate in local community activities and causes, including charities, K-12, Universities and other non-profit organizations. In 2017, NextEra projects supported communities in the U.S. and Canada with more than \$627 million in property tax revenue from our projects. NextEra and its affiliates have a long history of partnering with local universities and school districts to expand our outreach in the community. We have year round internship programs all across the United States for high school through college graduate students across all majors.

We have been recognized often by third parties for our efforts in sustainability, corporate responsibility, ethics and compliance, and diversity, and have been ranked in the top 10 worldwide across all companies for innovativeness and community responsibility as part of Fortune's 2018 list of "World's Most Admired Companies" as well as the No. 1 company in the electric and gas utilities industry for the 11th time in the past 12 years.

PENNSYLVANIA COMMUNITY ENGAGEMENT COMMITMENTS

At NextEra Energy Resources, we believe it's important to give back to communities. We have budgeted \$15,000 (per year, per site) for community engagement and development. This allows us to create a \$300,000 community development fund along with the construction of each project, to be used in support of community needs.

Beyond this, we invest in community organizations throughout the state of Pennsylvania beginning at the earliest stages of the development process all the way through project operation. We frequently invest in school STEM programs as well as agricultural organizations such as Future Farmers of America and 4H. Below are a few sample partnerships in Pennsylvania and in the PJM regional transmission organization. We work with local leaders to determine what will best meet the needs of the residents. Some examples of our support in Pennsylvania are as follows:



- 2019 Carnegie Mellon University (CMU) Advisory Board for the white paper, "Elevating & Evaluating Southwestern Pennsylvania's Grid Scale Solar Future" released on February 15,
- 2019 Piper Level Sponsor CMU Energy Week,
- Our Senior Data Scientists participated in the CMU VentureWell Energy Hackathon as mentors and judges,
- 2019 Sponsor of Governor's Awards for Environmental Excellence hosted by the Pennsylvania Department of Environmental Protection (DEP) and Department of Conservancy and Natural Resources (DCNR) in Harrisburg,
- 2019 Sponsor of the Western Pennsylvania Awards for Environmental Excellence in Pittsburgh,
- 2019 Sponsor of the Butler County Community Development Corporation Annual Breakfast.
- 2019 Sponsor of the Allegheny SolarFest in Pittsburgh,
- 2019 Gold Sponsor of the "I Am Sustainable Pittsburgh" web-based competition,
- 2018 and 2019 Pennsylvania Environmental Council (PEC) Environmental Partner,
- 2018 Presenting Sponsor for PennFuture's 20th Anniversary Celebration for 4th
- Annual Celebration of Women in Conservation Awards held at the Independence Seaport Museum in Philadelphia,
- 2018 founding partners of the Pennsylvania Wind for Schools Program which has been providing guidance, educational programs, activities, teacher professional development, and resources to the K-12, collegiate and PA community since 2010,
- Ongoing: KidWind Workshops. NEER Energy Resources supports school STEM
- programs by offering teacher workshops that include project kits for teachers to take back to the classroom and a curriculum that is tailored to state educational requirements,





- Foundation donor for PA Audubon's Discovery Center Audubon Pennsylvania's brand new Discovery Center (www.discoveryphila.org) opened in fall of 2018 on the southern shore of the East Park Reservoir in North Philadelphia's Strawberry Mansion neighborhood. The 37-acre reservoir was constructed in the late 1800's and served as a critical component of the City's water supply. It was decommissioned in the early 1970s, and today supports more than 130 species of waterfowl, raptors, woodpeckers and songbirds,
- Foundation donor for 2019 Western Pennsylvania Audubon's K-8 Pollinator Program
- 2018 & 2019 Donations for the Western Pennsylvania Conservancy community urban pollinator rain garden program,
- 2018 Foundation Sponsorship to the Arbor Day Foundation supporting Arbor Day Pennsylvania/MD in partnership with the Chesapeake Bay Foundation's watershed improvements by planting trees/riparian areas. Our sponsorship of the Arbor Day Foundation is supporting tree planting to restore the watershed of the Chesapeake Bay PA, and improve breeding and habitat conditions for the Cerulean warbler in Ohio, and
- 2018 Scranton High Fundraiser for an onsite wind turbine.

Aboriginal and Tribal Outreach

Early project development provides the following:

- The development of strong relationships based on respectful and time sensitive communication,
- Opportunities for Aboriginal and Tribal communities to be involved and communicate their concerns,
- Protection of cultural resources to the extent possible, and
- Identification of opportunities for community members and businesses to access training, be employed and benefit from project implementation.

Engaging with Key Stakeholders

The NextEra team understands the need for transparency and relationship building in Pennsylvania. We focus on engaging with local and state governmental agencies and the local community throughout the development process. Our initial task will be to identify and meet each key stakeholder, introduce them to our company and educate them about the benefits of the Project. The team will work to build positive long-term relationships with community organizations and institutions that may wish to advocate for our project, but more importantly ensure we are sharing timely information broadly with the community to both meet the expectations of key stakeholders and build public support. These meetings may open the door for additional future collaborations. The project team will conduct a small event for abutting landowners to share information about project, gauge sentiment and identify any pertinent issues. The team will also conduct open house(s) in advance of permitting, including project maps and subject matter experts and advertise these in local newspaper(s).



DIVERSITY

We are often recognized by third parties for our efforts in sustainability, corporate responsibility, ethics and compliance, and diversity, and have been ranked in the top 10 worldwide across all companies for innovation and community responsibility as part of Fortune's 2018 list of "World's Most Admired Companies" as well as the No. 1 company in the electric and gas utilities industry for the 11th time in the past 12 years.

NEER has an extensive Supplier Diversity Program. The Diversity initiative at NEER is a public statement of our overall corporate belief that the ideal workplace is an inclusive business environment that values and leverages the diverse talents, perspectives and ideas of all employees, and that we are committed to working towards that ideal.

Diversity is a value that reflects our culture of respect for people and the value we place on our very differences. Within our Human Resources Total Rewards Organization, the Diversity Group is actively working to promote awareness of the initiative and create resources to help all of us move along the Diversity Continuum towards our culture of inclusion. Diversity is a corporate competency, and NextEra University provides a variety of learning opportunities to help employees develop this competency. The Corporate Diversity and Inclusion strategic plan will drive improvement in how we attract, hire, develop and retain top-level, diverse talent. At NEER we define diversity broadly. We provide an inclusive work environment that is free from discrimination and harassment on the basis of race, color, age, sex, national origin, religion, marital status, sexual orientation, gender identity, gender expression, genetics, disability or protected veteran status. We also appreciate generational differences in thought, style, technical and functional capabilities or leadership. When talented employees from varied backgrounds are engaged and contributing to our business success, we all benefit.

Investing in infrastructure is how NEER helps make our country and our world more sustainable and more successful. Our team works hard to advance that vision every day. We salute every person, company, school, supplier, government agency, and charitable organization that has a similar passion for sustainability, and we appreciate the opportunity to work together to create a more sustainable world. In 2016, for the second consecutive year, NEER received the ERG and Council Honors Award™, which recognizes, honors, and celebrates the outstanding contributions and achievements of Employee Resource Groups and Diversity Councils. Competing with more than 1,200 other participants – all judged on their programs' results, management commitment, measurement and accountability, and communication and education – we are the only large U.S. electric utility company to receive a Top 25 ranking.

Ecosystem Benefits that Extend beyond the Project Boundary Brookview Solar Calculated Greenhouse Gas Offset:

75 MW: over 123,000 tons of CO2; over 203 tons SO2; and over 98 tons of NOx annually.

Beyond the beneficial air quality offsets the solar projects affords, in lieu of a standard fossil fuel plant, the temporary conversion of agricultural or grazing lands to a photovoltaic solar array production also affords an opportunity to protect existing valuable resources, such as wildlife habitat while also creating trickledown benefits for local soils, groundwater, and surface



waterways as well as their inhabitants. The Project proposes to develop a site-specific Environmental Stewardship Plan (ESP) that will describe in detail how the Project will commit to avoid, enhance, and/or restore habitats within areas of the future solar energy center. The ESP document will provide details as to how the proposed solar energy center will maximize benefits or enhance the existing ecological value of the site. At a high-level the plan may include the following components:

- Assisting with the design of the project array and associated infrastructure so as to avoid environmentally sensitive areas with an emphasis on maintaining riparian buffers, indwelling bird and bat habitat and other key contiguous core and connected habitats if identified on the site following environmental surveys performed by trained biologists,
- Maintaining or enhancing treed or vegetative buffers with native, pollinator-friendly species.
- Utilizing additional soil stabilization within erosion and sediment control plans of disturbed areas with native, pollinator-friendly seed mixes for plant species known to offer strong root systems and have natural adaptations to local conditions, and
- Creating and implementing a maintenance and monitoring program for weeds and invasive species.

By giving soils a rest, from in some cases many decades of seasonal agricultural practices, can reduce or eliminate soil erosion, increase the soil's retention of organic matter and its natural cycling of nutrients, thereby improving soil biological fertility, making soils more resilient. This approach has been shown to reduce erosion, increase water retention, and minimize the need for chemical applications, all leading to a healthier ecosystem. The introduction of native plant cover will reduce heat absorption into soils and provide food and cover for local wildlife like bees, butterflies, birds, frogs, turtle and small mammals.

By selectively choosing native plants that suit local conditions, the site reduces or eliminates the need for fertilizers, herbicides, pesticides and watering while improving soil stability. This will lessen the risk of runoff and nutrient pollution from the Project area, providing direct benefits to groundwater, surrounding streams, rivers, and the watershed. Once in the waterways, excess nutrients such as nitrogen and phosphorus can fuel overgrowth of algae, blocking sunlight and threatening the health of aquatic and avian species and overall balance of the ecosystem. Pennsylvania comprises of 35 percent of the entire Chesapeake Bay Watershed. The Susquehanna River is the largest tributary to the bay, providing 90 percent of the freshwater flow to the upper bay and half of the total freshwater flow to the bay.

Solar Ecological Stewardship Plan Summary

As part of our commitment to environmental excellence, NextEra Energy will implement an Environmental Stewardship Plan (ESP) at the site that will be tailored to the physical location and ecological attributes of the site and the surrounding area. Our overall goal will be to construct a sustainable and resilient solar energy center that coexists within the local community while producing reliable solar power. To achieve this goal, we plan to engage state and federal agencies and create collaboration opportunities with local educational institutions and/or environmental non-governmental organizations.

The ESP will be consistent with local regulatory requirements (e.g., visual vegetated screens, setbacks, etc.). The ESP will be designed to support the important natural features of the site and surrounding area and will include targeted measures for species of conservation interest



(e.g., relocation of or habitat restoration for rare plants) known to occur at or in the vicinity of the site.

The ESP will involve measures to be applied throughout the life of the project including during construction, operation and maintenance, and project decommissioning. The foundation of the ESP will include a native planting plan that will be implemented following completion of construction activities and at interim points during construction as appropriate to minimize soil erosion and facilitate recolonization of disturbed areas with native plant species. The planting plan will be designed to promote a mosaic of native, early successional grasslands and shrublands that provide high quality nesting and foraging habitat for birds, pollinators, butterflies, and other wildlife while complying with local requirements and meeting operational and safety requirements (avoiding shading of panels, eliminating fire hazards, etc.) of the solar project. Where consistent with the solar project requirements, native shrub species that are beneficial to birds will be incorporated into the planting plan. Some of these species include black raspberry, Eastern red cedar, elderberry, highbush blueberry, inkberry holly, nannyberry, northern bayberry, rugosa rose, serviceberry, staghorn sumac, viburnums, winged sumac, and winterberry holly.

NEER plans to engage a regional horticultural specialist to develop specially formulated seed mixes and seeding specifications tailored to the site. A temporary seed mix will be used immediately following (and in some cases during) construction activities to ensure rapid revegetation and soil stabilization. Subsequently, permanent seed mixes will be applied to promote wildlife habitat quality (e.g., structural diversity, bird and mammal food resources, pollinator and butterfly habitats), provide aesthetic value (e.g., wildflowers), and meet any local regulatory requirements for vegetation management at the site (i.e., buffer plantings). Different seed mixes will be developed and used based on site characteristics (e.g., habitat, soil, topographic, and hydrologic conditions) and the desired post-construction vegetation mix. Typical seed mixes that could be developed and applied include:

- Upland Seed Mix (short grasses and herbs)
- Upland Seed Mix (tall grasses and herbs)
- Steep Slope Scenic Mixture
- Riparian Restoration Mixture
- Facultative Wetlands Restoration Mixture
- Obligate Wetlands Restoration Mixture
- Herbaceous/Woody Shrub Upland Mix

Other ecological stewardship actions that may be incorporated into the ESP include:

- Partnership with local beekeepers with a portion being donated to local community fundraising events,
- Forest conservation by way of minimized or avoidance of tree clearing,
- Forest restoration (i.e., tree thinning and exotic plant control),
- Bat habitat conservation by way of avoidance of forested areas and woodlots containing potential roosts (i.e., live trees and/or snags ≥5 inches diameter at breast height [dbh]) that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors,
- Preserving priority zoned suitable habitat for Indiana bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some



adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields, and pastures,

- Permanent protection (conservation easement and gating) of known hibernacula portals.
- Permanent protection of an occupied maternity roost with a 100-foot buffer,
- Implementation of a seasonal restriction on tree clearing to avoid impacts on forest dwelling breeding birds and bats (typically between February 1 – September 15),
- Vegetation management practices to avoid the peak bird nesting season during the peak bird nesting season (May 15-July 1),
- Vegetation management practices utilizing sheep grazing.
- The site design will avoid permanent wetland impacts and incorporate natural vegetated riparian buffers around wetlands and streams,
- Installation of bird and bat boxes and artificial snags,
- Targeted plantings to create butterfly and pollinator habitats at the site, including specific plants for monarch butterflies,
- Invasive/exotic vegetation species control,
- Incorporation of water features for wildlife (drainage features, bird baths, etc.), and/or
- The ESP will strive to meet the requirements of a Certified Wildlife Habitat, if successful; the site will obtain an official certification of the site by the National Wildlife Federation following the early stages of ESP implementation.



Delivering Energy Solutions



Meeting Energy Needs

Homes and businesses across the country depend on energy to support the economy and sustain a high quality of life. Yet there's also a responsibility to provide energy in a way that's sensitive to our environment. It's a delicate balance that many recognize, but few truly achieve.

That's not the case at NextEra Energy Resources, LLC, which has distinguished tself as a strong performer in the competitive energy business while earning recognition as a leader in clean and renewable energy.

clean energy and by demonstrating:

- A proven track record built on experience and expertise
- State-of-the-art technology
- Exceptional skills and dedication of its employee
- Oustomer focus
- Communiciation being the pest

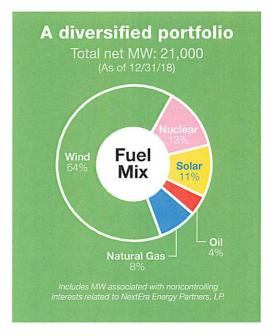
Our **Business Operations**

Based in Juno Beach, Florida, NextEra Energy Resources is the competitive energy subsidiary of NextEra Energy, Inc., a Fortune 200 company and one of the nation's largest clean energy providers with consolidated revenues of approximately \$16.7 billion in 2018.

NextEra Energy Resources is primarily a wholesale power generator, operating power plants and selling the output to utilities, retail electricity providers, power cooperatives, municipal electric providers and large industrial companies.

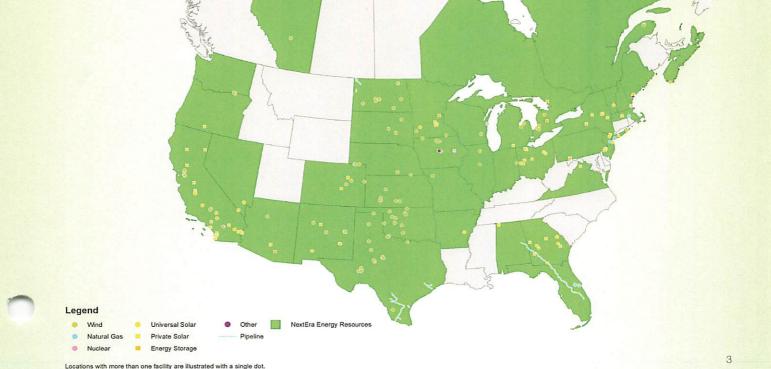
Nationally recognized as a leading clean energy provider, NextEra Energy Resources has a portfolio of facilities, totaling more than 21,000 megawatts (MW) of generating capacity in the U.S. and Canada. Nearly all of our electricity is derived from clean or renewable resources, including wind, solar, natural gas and nuclear energy.

NextEra Energy Resources' operations are diversified not only by fuel sources, but by geographic regions. This helps us manage our power generation business more efficiently and economically, especially in today's volatile energy markets.



NextEra Energy Resources **Generation Facilities in Operation**

As of 12/31/18



Provider of **Energy Services**

NextEra Energy Resources has established a strong reputation that is based on outstanding performance at every level. We continue to solidify our position as one of the nation's leading energy providers by focusing on:

Development, construction and operation

NextEra Energy Resources is a world leader in the development, construction and operation of wind energy centers. Standardized processes, best practices and superior execution have earned us the top position in the field.

We are also experienced in other areas of power generation, including solar, nuclear energy and fossil fuels. Given our experience in these areas, NextEra Energy Resources is uniquely suited to continue developing and acquiring power plants to meet the nation's growing energy needs.

Transmission facilities

Power plants are only part of the energy equation. As additional power generation facilities become operational, we need to move this power from the generation sites to where it is needed. To do that, the electric transmission system must be improved, and NextEra Energy Resources is doing its part. Although we own transmission lines across the country, we are pursuing additional large-scale opportunities to develop, build and operate new transmission facilities through an affiliate company, NextEra Energy Transmission.



A wind technician at Wildcat Ranch Wind Energy Center in Texas inspects the hatch at the top of a wind turbine.

Renewable energy expertise at NextEra Analytics

NextEra Analytics, one of our subsidiaries based in St. Paul, Minnesota, provides renewable energy consulting services, using industry-leading scientific analysis for planning, siting and forecasting renewable energy projects. Besides being the lead wind and solar advisor to NextEra Energy Resources, NextEra Analytics also serves the renewable energy and electric utility industries throughout North America and around the world. The company employs meteorologists, computing experts and other industry specialists.

Energy marketing

NextEra Energy Marketing (NEM), LLC, a subsidiary of NextEra Energy Resources, is one of the top 10 marketers of power in the nation. NEM buys and sells wholesale energy commodities, such as natural gas, oil and electricity; manages all the fuel needs of NextEra Energy Resources' power generation fleet; and markets the output to customers across the country.

Renewable energy market

NEM markets the largest renewable energy portfolio in the country. NEM provides custom renewable energy solutions for customers with specific needs, from meeting regulatory mandates associated with a renewable portfolio standard, to working with businesses to meet their goals on renewable energy generation or carbon emissions management.

Distributed or private generation

Our distributed generation (DG) team tailors solar solutions that enable customers to generate clean, reliable energy from their rooftops, parking structures and open land. DG develops, builds, finances and operates the systems for commercial, institutional, utility and public power customers, helping them to control costs and make a meaningful impact on their renewable energy goals.

Retail energy

NextEra Energy Resources entered the retail market in 2005. NextEra Energy Services and Gexa Energy serve customers in numerous U.S. retail markets and manage the related billing, customer service, collections and remittance services to residential and commercial customers.

Energy storage

With our best-in-class development skills, NextEra Energy Resources is a world leader in the energy storage market. Our team of specialists has spent years researching energy storage technologies. Today, we have more than 145 MW of operational energy storage and a pipeline of development projects across the U.S. and Canada.

Investment in Energy Infrastructure



The 75-MW River Bend Solar Energy Center in Alabama. Photo by Jerrod, a solar energy technician at River Bend.

Long before clean energy became a popular choice in the U.S., NextEra Energy Resources has been leading the way in using clean fuels to produce electricity that is environmentally friendly.

Our renewable or clean energy mix includes:

Wind

NextEra Energy Resources remains the largest generator of U.S. wind energy. We have 119 facilities in North America capable of generating more than 13,500 MW of electricity.

NextEra Energy Resources' wind facilities have enabled our customers, who have purchased renewable attributes, to reduce emissions that would have otherwise been released into the atmosphere from other sources of power generation.

In the coming years, NextEra Energy Resources plans to continue the aggressive expansion of its wind business.

Solar

NextEra Energy Resources is a leading generator of solar energy. The company owns and operates more than 2,300 MW of universal and small-scale solar generation across the U.S.

Natural gas

We have incorporated the cleanest-burning fossil fuel into our portfolio with natural gas-fired facilities. We often install combined-cycle technology that uses waste heat to drive an additional power generator for increased energy efficiency and lower emissions than conventional fossil-fueled units. This type of plant is about 30% more efficient than a traditional steam plant.

Nuclear energy

NextEra Energy Resources also incorporates clean nuclear energy into the fuel mix through Seabrook Station in New Hampshire, Duane Arnold Energy Center in Iowa and Point Beach Nuclear Plant in Wisconsin. Nuclear power plants produce virtually no air emissions during operation, representing a responsible energy choice for the future as climate change concerns intensify. All three of NextEra Energy Resources' nuclear power plants have excellent safety records and are focused on reliable operation.

Environmental Excellence

A common element throughout all of NextEra Energy Resources' operations is a commitment to environmental excellence and sustainability. In addition to generating electricity with renewable and clean energy sources, we also minimize the impact of our operations on air, water, land and wildlife. Our environmental performance has been acknowledged with numerous environmental awards and recognitions.

Not only do we incorporate environmental stewardship into the design, construction, operation and maintenance of our facilities, our leadership is also committed to ensuring that the growing demand for power is met in the most environmentally responsible manner. As a result, the company has achieved a reduction in carbon dioxide emissions and other pollutants through the use of renewable energy resources.

Our employees work hard to achieve greater efficiencies in operations and improve overall performance with less impact on the environment. This includes wisely managing water as a valued natural resource, seeking ways to improve operations to minimize impacts on wildlife near our facilities, and properly disposing of materials required for company operations.

Equally important, we care about the communities where our facilities are located. From project development through operations, we engage the community by establishing ongoing relationships.

At NextEra Energy Resources, we believe the actions we take to protect our environment and to support local communities today have an impact on our overall quality of life in the years ahead. Our company is dedicated to doing its part – now and in the future.



The 80-MW Lorenzo Wind Energy Center in Texas.



Employees at the 16-MW Casco Bay Energy Storage Center in Maine.



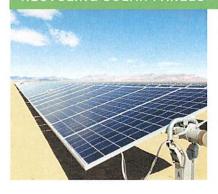
Solar energy and the environment

Solar energy offsets pollution from fossil fuels and the **overall impact of solar** on human health is **overwhelmingly positive**.

- » Health-related air quality benefits from solar energy are worth even more than the electricity itself 1
- » Modern, photovoltaic (PV) solar panels are made of materials typical of those found in electronic equipment and are encased, so as not to pose a concern for the water supply or public health²
- » Solar PV panels typically consist of glass, polymer, aluminum, copper and semiconductor materials that can be recovered and recycled at the end of their useful life³
- » To provide decades of corrosion-free operation, solar cells are encapsulated from air and moisture between two layers of plastic, with a layer of tempered glass and a polymer sheet or industrial laminate
 - In the same way a windshield cracks but stays intact, a damaged solar cell does not generally create small pieces of debris
- » Crystalline silicon panels represent approximately 90 percent of solar panels in use today
 - Research has shown they "do not pose a material risk or toxicity to public health and safety." 4
- » Thin-film solar panels represent a small percentage of panels in use today; some use a stable compound called cadmium telluride or other semi-conductor materials
 - Research has shown the tiny amount of cadmium in these panels does not pose a
 health or safety risk⁵



RECYCLING SOLAR PANELS



Although modern solar panels can be safely disposed of in landfills, they can also be recycled. PV solar panel recycling technologies have been implemented over the past decade and have been shown to recover over 95 percent of semiconductor material and over 90 percent of the glass in the panel. The industry is exploring the most cost-effective ways to recycle. First Solar, a U.S. company and the main supplier of thin-film panels has a robust solar take-back recycling program that has been operating commercially since 2005. Solar manufacturers and developers continue to research reducing use of raw materials, a secondary market for reuse, and recycling technologies.

Sources:

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- ³lbid.
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Our Solar Energy Business



Our Business Operations

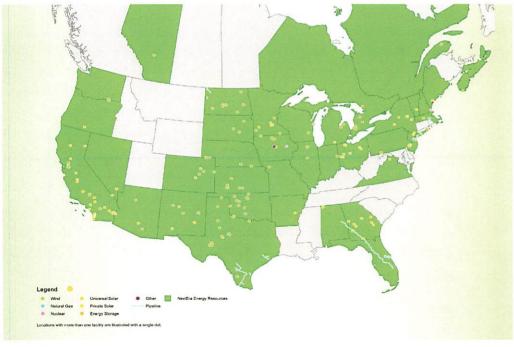
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(As of 12/31/18)



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Transmission facilities

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Energy storage

Our team of specialists has spent years researching energy storage technologies. Today, we have more than 145 MW of operational energy storage and a pipeline of development projects across the U.S. and Canada. With our best-in-class development skills, we are a leader in the energy storage market.



The 50-MW Titan Solar Energy Center in Colorado.

Investment in Energy Infrastructure



The 81-MW Stuttgart Solar Energy Center in Arkansas.

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Our renewable or clean energy mix includes:

Wind

NextEra Energy Resources remains the world's largest generator of U.S. wind-generating facilities. We have 119 wind facilities in operation in North America capable of producing more than 13,500 MW of electricity.

NextEra Energy Resources' wind facilities have enabled our customers, who have purchased renewable attributes, to reduce emissions that would have otherwise been released into the atmosphere from other sources of power generation.

In the coming years, NextEra Energy Resources plans to continue the aggressive expansion of its wind business.

Solar

NextEra Energy Resources is a leading generator of solar energy. The company operates more than 2,300 MW of universal and small-scale solar generation across the U.S.

Natural gas

We have incorporated the cleanest-burning fossil fuel into our portfolio with natural gas-fired facilities. We often install combined-yole technology that uses waste heat to drive an additional power generator for increased energy efficiency and lower emissions than conventional fossil-fueled units. This type of plant is about 30% more efficient than a traditional steam plant.

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Bringing Solar Energy to Market

Solar energy benefits

Solar plants operate when energy consumption needs are at their highest, effectively matching energy supply and demand. Solar energy is cost effective. The cost of large, universal solar installations has dropped significantly in recent years due to advances in technology and design of solar panels. It has reached parity with natural gas in certain markets.

The other benefits of NextEra Energy Resources' photovoltaic (PV) solar portfolio are considerable, including:

- » Creates no greenhouse gases or other air pollutants.
- » Uses no water resources to generate electricity.
- » Provides a renewable fuel supply.
- » Creates no waste byproducts for disposal.
- » Results in no hazardous cleanup at the end of a project's productive life.
- » Is a completely silent operation.

Our solar expertise

NextEra Energy Resources entered the solar generation business in 1989 through its interest in Solar Electric Generating System (SEGS), one of seven solar thermal projects sited in Kramer Junction and Harper Lake. California.

Since then, the company has significantly expanded its solar development to approximately 2,300 MW of universal and small-scale operating assets.

Vital landowner relationships

PV solar facilities require a large area for development. Our general rule of thumb is that each MW of power will require five to eight acres of land to support the solar equipment, as well as easements for power line infrastructure. For example, a 20-MW facility will require about 100 to 160 acres.

We generally aim to site a project as close as possible to existing electrical transmission or distribution infrastructure. We try to avoid too much land variation, extreme terrain and treswhen siting a project because such characteristics can cause shading, reducing the project's electrical production.

A solar PV project only requires water during construction for dust control, as well as infrequent panel cleaning during operations.

If an area is promising after our initial assessment, NextEra Energy Resources will enter into a purchase or lease option agreement with landowners, which provides additional time for further evaluation of the property.

Landowners receive option payments based upon the final agreed dollar-per-acre value of the property. Throughout the option period, landowners are able to continue to conduct business as usual on their land. Landowners are not the only beneficiaries, Their decision to help develop a solar project in their community brings additional jobs to the area, increased tax revenue and our purchases of local goods and services.

Solar and storage

When paired with an energy storage system, solar offers an attractive combination. Together, they can improve the operation of the electrical grid, reduce the need for additional generation and provide additional options to meet peak energy demands.

Environmental stewardship

- » NextEra Energy Resources works closely with
- Environmental assessments determine suitability of prospective solar sites.
- » Land and wildlife are respected and protected
- Land is restored after construction



The 20-MW Pinal Central Solar Energy Center in Arizona was NextEra Energy Resources' first project to pair solar energy with an on-site, state-of-the-art 10-MW battery storage system,

Extensive Construction Experience

Siting a solar project

Siting a solar project is challenging work and includes finding the right combination of solar conditions, power transmission lines and land. In addition to working with landowners to familiarize them with the process and what to expect, our developers are busy on a wide range of issues related to developing a solar site, including:

- Meeting with and providing information to local officials on project progress.
- » Conducting environmental assessments.
- » Completing historical and archaeological reviews.
- » Arranging to connect to the local power grid.
- » Securing customers for the site's generated electricity.
- » Attending public meetings to gain approval for construction,
- » Permitting and land use zoning, as applicable.
- » Procuring equipment.

Construction is carefully planned

NextEra Energy Resources' construction team is experienced in building solar PV plants. When all approvals are in place and landowners have signed their contracts, construction can begin. Our construction managers and engineers oversee and are responsible for all work and all contractors at a construction site. They, and often their families, live in the community during construction.

Approximately 90 to 120 contractors can be involved in a typical solar construction project. Our goal is to hire as many workers from the area as possible, including heavy equipment operators, electricians, laborers, security and others.

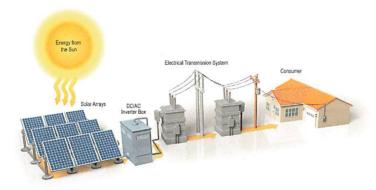
Construction typically takes between six and 12 months. Our construction manager and staff stay in close contact not only with landowners, but also with local government, to keep interested parties apprised of progress and to ensure adherence to all local building code requirements.

Some of the major steps involved include:

- » Erecting a fence for safety.
- » Laying high-quality gravel roads to accommodate heavy equipment.
- » Constructing a substation, and possibly an operations and maintenance building.
- Installing the solar arrays, which are typically about six to eight feet tall and are erected on steel posts driven into the ground.
- » Testing and commissioning the completed arrays.

When construction is complete and the plant has begun commercial operation, the site is turned over to our operations staff who operate and maintain the solar plant.

How a photovoltaic solar plant works



As sunlight hits the solar panels, the photovoltaic energy is converted into direct current electricity (DC). The direct current flows from the panels through inverters and is converted into alternating current (AC). Finally, the electricity travels through transformers, and the voltage is boosted for delivery onto the transmission lines, so the local electric utility can distribute the electricity to homes and businesses.

Generating **Homegrown** Solar Energy



The 51-MW Live Oak Solar Energy Center in Georgia.

NextEra Energy Resources is a leader in solar energy. Lower solar panel costs have greatly improved the economics of solar power and the benefits are significant. For local communities, it means clean, homegrown energy that also provides much-needed tax income to rural communities, including schools, libraries and other public services, benefiting the entire community.

Highlights of solar operations

- » We have more than 30 universal-scale solar projects with ownership interest, with a total net generating capacity of more than 2 000 MW of owned solar generation.
- » More projects are in the development pipeline for future construction and operation.
- » Solar PV generation does not use water for power generation.
- » Solar PV generation is emissions free

A diversified portfolio Total net MW: 21,000 (As of 12/31/18) Nuclear 10/86 Fuel Mix Solar Mix Solar Mix Solar 10/86



NextEra Energy Resources honors the brave veterans who have served our country. Our company is proud to employ veterans - connecting American heroes with jobs in America's growing renewable energy industry. Today and every day, we thank you for your service.

NextEraEnergyResources.com



Exhibit I

Decommissioning Plan



Brookview Solar Project Decommissioning Plan

October 21, 2019



Revision Chart

Rev	Reason for Change	Author	Review	Issue Date
0	Issue Plan	EM	NFB	10/15/19
1				

This document entitled *Brookview Solar Project Decommissioning Plan*, was prepared by Timmons Group for the account of Next Era Energy Resources (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Timmons Group professional judgment in light of the scope, schedule, and other limitations stated in the document and in the contract between Timmons Group and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Timmons Group did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Timmons Group shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by:

Name / Title: Edward G. McGavran III, P.E. Senior Project Manager, Energy and

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Renewables

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Executive Summary

This Decommissioning and Restoration Plan ("Plan") for the Brookview Solar Project ("Project") was prepared by the Timmons Group and Brookview Solar II, LLC ("the Project Owner"). The Plan has been prepared to address the requirements of Code of Ordinances of Mt. Joy Township in Adams County, Pennsylvania and provide for the decommissioning of the Project and restoration of the Project site at the end of the Project's useful life or in the unlikely case of its abandonment. The Plan provides an at the overview of all activities related to the removal of the solar energy system, its equipment and panels, and any appurtenant structures and for restoration of the site to its previous condition as much as reasonably practicable.

A decommissioning bond will be put up by the project owner to begin the decommissioning process when the project has reached the end of its useful life. That bond would be intended to initiate the process in the field at that time. This bond would be intended to hire engineering and other services to determine to specify the decommissioning methods and processes that will be used to return the land to its original use, detail costs involved, and insure public safety throughout the decommissioning process.

A properly maintained solar project has an expected life of twenty five (25) years. It has, however, been assumed that the decommissioning process will commence prior to the termination of the lease with the landowner. The primary reason for the lease to be terminated would be the completion of the project's useful economic life.

During decommissioning all of the Project's facilities will be dismantled and removed. During restoration, the Project site will be returned to its previous condition. If it is agreed upon with the landowner, some or all the Project access roads may be kept in place for the landowner's continued use.

The Project Owner will meet with the landowner prior to the lease expiration date, to review its plans decommission the Project and restore the premises. Solar easements require that the owner decommission the project on the property owner's land. The easement language requires the project owner to begin decommissioning improvements within twelve (12) months of the termination of the lease agreement or termination of the project's use by the owner. All of that is specific to the actual easement agreement signed by the landowner and the project owner.

The decommissioning of the Project and restoration of the site will comply with any applicable municipal, state and federal regulations. As with the construction, a manager responsible for safety will be present on site for the duration of the work.

The Project Owner will ensure that the decommissioning and restoration of the proposed facility is carried out in accordance with Mt. Joy Township's requirements and the measures and practices described in this Plan. This will include but not be limited to:

- Providing notification regarding the plans to continue or cease the operation of the Project,
- Providing a schedule for the start and completion of the decommissioning and

restoration activities.

- Providing site restoration measures that will ensure that the nutrient content of the soil is restored, if necessary, to its prior condition,
- Providing restoration of the site, as practicable, to its pre-construction state as timberland and pastureland, and
- Providing a decommissioning and restoration cost estimate as well as the methods for ensuring that the funds will be available for decommissioning and site restoration.

1. Introduction and Project Description

The Brookview Solar Project is being planned by Brookview, LLC. This Decommissioning and Restoration Plan is being submitted to Mount Joy Township in Adams County, Pennsylvania.

Brookview, LLC proposes to develop this project with a maximum name plate capacity of 75 MW AC as described in the conditional use permit application.

2. Methodology

This Plan provides an overview of all activities during the decommissioning phase of the Project, as well as all activities related to the restoration of the Project site and the management of excess materials and waste.

3. Decommissioning Plan Overview

A properly maintained solar project has an expected life of twenty-five (25) years. This Plan, however, assumes that the decommissioning process will commence prior to the termination of the leases with the landowners. The primary reason for the leases to be terminated would be the completion of the project's useful economic life.

Project Owner will meet with the landowner prior to the lease expiration date to review its plans and schedule for decommissioning the Project and restoring the premises.

During decommissioning all of the Project's facilities will be dismantled and removed, including the perimeter fences, concrete foundations (to a depth of 36 inches below grade), steel piles, mounting racks, trackers, Photovoltaic ("PV") modules, aboveground and underground cables, transformers, inverters, fans, switch boxes, fixtures, combiner boxes and project substation (as identified in Appendix I). All above ground structures including circuit breakers, chain link fencing, main power transformer and control buildings will be removed. All electrical equipment will be removed for reuse or disposal and will carry a significant salvage value. All fill and gravel will be removed and the site will be graded to restore terrain profiles to the extent practicable.

Within twelve (12) months of initiating the decommissioning, Project facilities will be removed from the leased land and restoration will be completed.

3.1 Decommissioning During Construction (Abandonment of the Project)

In the unlikely event that the construction of the project ceases prior to completion, the installed components and all materials on the Project site will be removed and recycled or properly disposed of and the site restored in accordance with applicable regulations and the process described below.

3.2 Decommissioning After Ceasing Operation

In the event that the operation of the solar farm ceases prior to the end of its useful economic life, the installed components will be removed and recycled, and the site restored in accordance with applicable regulations and the procedures described below.

4. Decommissioning of the Renewable Energy Generation Facility

4.1 Equipment Dismantling and Removal

Many of the Project's components are largely composed of recyclable materials, including glass semiconductor material, steel and wiring. When the project reaches the end of its operational life, reusable and recyclable parts will be dismantled, removed from the site and transported to reuse or recycling facilities All waste resulting from the decommissioning of the facility will be transported by a certified and licensed contractor and taken to a landfill facility.

4.1.1 Above-ground Structure Decommissioning

In the event that the project requires decommissioning, the following sequence for the removal of the components will be used:

Solar Panel Arrays and Project Substation:

- De-energize and disconnect the Project from the utility power grid,
- Disconnect all above ground wirings, cables, fuses and electrical and protection components and reuse or recycle off-site by an approved facility,
- Remove concrete foundations of inverter and transformer pads to a depth of 3 ft below grade,
- Remove PV modules and metallic structures and ship to reuse or recycling facilities for aftermarket use or recycling and material reuse,
- · Remove all waste,
- Remove the perimeter fence and recycle off-site by an approved metal recycler, and
- Remove inverters, transformers, meters, fans, lighting fixture and other electrical components and recycle off-site by an approved recycler.

Access Roads:

- Consult with landowner to determine if any access roads should be left in place for their continued use.
- If access road is deemed unnecessary, remove access road and restore access road location as practicable to its previous condition with native soils and seeding,

Project Substation

- De-energize and disconnect the project substation from the utility power grid,
- Disconnect all above ground wirings, cables, fuses and electrical and protection components and recycle off site by an approved recycling facility,
- · Remove concrete foundations to a depth of 3 ft,
- Remove main power transformer, switchgear, bus bar support insulator and steel structures and ship to reuse or recycling facilities for aftermarket use or recycling and material reuse,
- Remove all waste,
- Remove the perimeter fence and recycle off-site by an approved metal recycler, and
- Disconnect all electrical equipment.

4.1.2 Below-ground Structure Decommissioning

- Disconnect all underground cables and transmission lines and remove and recycle off-site by an approved recycling facility and
- Remove all PV panel racking below and above ground, including the steel pile foundations.

This Plan is based on current best industry practices and procedures. These practices may be subject to revision based on the development of new and improved decommissioning practices in the future.

4.2 Site Restoration

The Project Owner will develop a comprehensive restoration plan designed to restore the site so it can be returned to its previous use as pasturelands, agriculture use, and timberlands. Restoration will include the following:

- Top soil will be redistributed as necessary to provide essentially the same ground cover as was present prior to the site disturbance.
- Access roads and other areas that become compacted during Project operation will be decompacted to their previous conditions.

Where Project infrastructure has been removed, the project owner will coordinate with the landowner to stabilize any of the disturbed areas. Farmland areas will be left alone for tilling and reuse as such. Erosion and control measures will be installed at ditches and will be left in place until ground cover is fully established.

4.2.1 Watercourses

Within the project location there are no water bodies (i.e., permanent watercourses, intermittent watercourses, seepage areas or lakes). As no water bodies are present and the renewable energy facility does not release emissions which could pollute the air and water bodies, no impact to aquatic environment is expected. As a result, no restoration of water bodies, either during construction or decommissioning is planned.

4.2.2 Agriculture Lands

Once all Project facilities are removed, agricultural and silvicultural lands compacted during project operation (such as access roads) will be decompacted via tilling, plowing or subsoiling and affected areas will be seeded with native grass species.

Similar to the construction phase, soil erosion and sedimentation control measures will be re-implemented during the decommissioning period and until the site is stabilized in order to mitigate erosion and silt/sediment runoff.

Access roads will be left at landowner's requests or graded to restore terrain profiles (to the extent practicable) and vegetated. If removed, filter fabric will be bundled and disposed of in accordance with all applicable regulations. As necessary, these areas will be backfilled and restored to meet existing grade. This material may come from existing long-term berm or stockpile.

The decommissioning of the site will include returning the site to allow the total runoff from the site to be similar to pre-construction conditions.

4.3 Managing Excess Materials and Waste

During the decommissioning phase, waste materials will be removed in accordance with applicable local regulations. This will include but not be limited to obtaining all required permits and doing all soil testing as deemed necessary either by permit or additionally by third party professionals to insure there is no contamination of the site after removal has occurred. It is the goal of the Project Owner to reuse and recycle materials to the extent practicable and to work with local subcontractors and waste firms to segregate material to be recycled. As an example, since the mounting racks are made up of manufactured metal, it is anticipated that nearly 100% of the above grade metal is salvageable based on current industry practices and trends.

Many components of the Project are reusable or recyclable and have salvage value. The Project Owner will manage decommissioning to minimize, to the extent practicable, the volume of project components and materials discarded as waste. Table 4.1 below outlines the anticipated disposition methods of the different project components.

Table 4.1

Anticipated Project Decommissioning Disposition Methods

Component	Disposition Method
Concrete Foundations	Crush and recycle
Solar Panels	Reuse or recycle
Metal racks and mounts	Salvage/recycle
Steel piles and rack foundations	Salvage/recycle
Wiring and cabling	Recycle/salvage
Inverters, transformers, and breakers	Salvage/recycle/reuse
Granular material	Reuse/dispose
Main power transformer	Reuse/sell
High voltage circuit breakers	Reuse/sell
Project Substation steel and switches	Reuse/salvage/recycle
Fence steel	Salvage/recycle
Project Substation Controls	Dispose/reuse

Major pieces of equipment such as transformers and breakers are recyclable and reusable and will have significant market value. The solar panels are expected to retain over 85% of their generation capability after 30 years of operation so their market value as a reusable item is very high. Existing solar panel manufacturer have programs to buy and salvage panels. These programs extract the raw materials in the panels to make new panels at a significant discount from new material costs. Recycled materials include the semiconductor and glass.

Other components such as electrical cable have a high salvage-market value due to

their copper and aluminum content. The same is true for the steel and aluminum racks and foundations that support the solar panels.

As the great majority of the facility will consist of reusable and recyclable items, only a small percentage of the project components and materials will be disposed of in landfills. Any items or materials that are landfilled will approved prior to disposal. The Project Owner will assume the responsibility for removing this material from the site and properly disposing of it.

5. Decommissioning Costs and Salvage

The following table below lists the estimated decommissioning costs to remove the project components and restore the site to its previous condition.

Table 5-1 – Detailed Decommissioning Costs
Brookview Solar Project
Detailed Decommissioning Cost Estimate

Item	Qty	Cost/Unit	Total Cost
370 W Panels	274,320	\$5/unit	\$1,371,600
370 W Fallels	214,320	φολατιιτ	Ψ1,371,000
Steel piles	34,868	\$25/unit	\$871,719
Solar Panel Racks	2,916	\$50/unit	\$145,812
3.2 MW Inverters	30	\$500/unit	\$15,000
3500 KVA	30	\$3,000/unit	\$90,000
Transformers			
Fence Removal	45,111 Ft.	\$1/ft	\$45,111
Conductor Removal	49,213 Ft.	\$10/ft.	\$492,130
Substation	1	\$30,000	\$30,000
Transformer			
34.5 kV Circuit Breakers	5	\$7,500	\$37,000
115 kV Circuit Breaker	1	\$7,500	\$5,000
Substation steel	1	\$75,000	\$75,000
Substation Foundations	1	\$50,000	\$50,000
4 MVAR capacitor bank (34.5 kV)	1	\$20,000	\$20,000
Substation Control House*	1	\$10,000	\$10,000
Ops & Maint building*	1	\$10,000	\$10,000

Project Size: 75 MW ac (96.4 MW dc)

Project land area: Approximately 1,000 acres
Disturbed land area: Approximately 530 acres
*Final project design may not include these facilities

The Project components will have a salvage value at the end of their useful life. Table 5-2 below shows those values based on information known today about the assets.

Table 5-2 Estimated Salvage Value of Project Components

Project Component	Qty	Estimated New Cost/Unit	Estimated New Total Cost	Estimated Salvage Value*
380 W Solar** Panels	274,320	\$0.30/W	\$31,272,480	\$3,127,248
3500 KVA transformers	30	\$50,000	\$1,500,000	\$150,000
Conductor	49,213ft.	\$10/ft	\$492,213	\$50,000
Substation Transformer	1	\$600,000	600,000	\$50,000
35 kV Circuit Breakers	5	\$35,000	\$175,000	\$10,000
115 kV Circuit Breaker	1	\$75,000	\$75,000	\$10,000
4 MVAR cap bank	1	\$100,000	\$100,000	\$7,000
Fence Posts (Gal)	@3560	\$250.00	\$890,000	\$150,00
***Module Racks (Al)	7,309,289 lbs.			\$730,929
***Steel piles	9,136,611lbs			\$913,661
Total Salvage Value				\$5,198,838

^{*}Estimated salvage values are 20% of original cost except where noted.

^{**} Salvage value of these components for after-market use is estimated to be 10% of original cost. After 40 years of use, solar panels are expected to generate electricity at approximately 85% of their original capacity.

^{***} Used present market scrap price per Capital Scrap Metal schedule 10/15/2019.

The salvage prices are \$0.30/lbs. for aluminum and \$0.27/lbs. for steel.

As noted in Table 5-2, the total estimated decommissioning costs will be \$3,533,372 and the total estimated salvage value of Project components will be \$5,198,838.

The estimated salvage values are derived from years of experience decommissioning and uprating electric substations, overhead transmission and distribution hardware and underground distribution hardware that would include but not be limited to substation and pad mounted transformers, overhead and underground conductors, poles, fencing, ground grid conductors, control housings, circuit breakers (high and medium voltage), protective relaying, and other hardware items. These individual items have high salvage value either as stand-alone components to be reused or recycled and sold as used items. These items also have a relatively high salvage value as pure scrap for steel, copper and other commodities.

6. Decommissioning Notification

At least 30 days prior to commencing decommissioning of the Project and restoration of the site, the Project Owner shall notify Mt. Joy Township of its scheduled start and completion dates of project decommissioning and site restoration.

No later than 12 months after the abandonment or closure of the Project and within 30 days of completing decommissioning and site restoration, the Project Owner shall provide written documentation acceptable to the Township demonstrating that the Project has been decommissioned, that the Project site has been restored and that the solar panels and related equipment were properly disposed of in accordance with local, state and federal regulation.

7. Decommissioning Bond

To ensure that funds will be available for decommissioning the Project and restoring the site to its condition prior to construction, the Project Owner shall provide a bond in the form of cash or surety from a bonding company qualified to transact business in the State of Pennsylvania and acceptable to Mt. Joy Township. The amount of the bond has to be reasonably sufficient to cover removal of the solar farm in its entirety and restoration of the site.

For the Project, the estimated amount required to decommission and restore the Project site, as outlined in Table 5-1 above, is \$3,533,372. The estimated salvage value of the Project components, as outlined in Table 5.2, is \$5,198,838. Because the estimated salvage value is more than the estimated decommissioning and restoration costs, the decommissioning and restoration of the Project is expected to net approximately an additional \$1,665,466 to complete the decommissioning.

Initiating the decommissioning and restoration of the Project is expected to require engineering services to identify and select a decommissioning/restoration contractor and legal services to review contracting documents and ensure regulatory requirements are met. It is estimated that the cost of these services will not exceed

\$30,000.

Once, a decommissioning and restoration contractor is selected and notice to proceed is issued, the salvage of project components will provide cash flow and revenue to pay for the decommissioning and restoration costs. Since up to \$20,000 will be required to initiate the decommissioning/restoration and the remaining costs will be covered by revenue from the salvage of project components, the amount of the bond required to be posted by the Project Owner at the time of Solar Farm Permit Application is \$30,000.

The bond shall be maintained as long as the solar farm exists, regardless of whether it is actively operating. The bond shall be released or returned when the county's code enforcement department determines in its reasonable discretion that the decommissioning and restoration of the Project site has been completed in accordance with all applicable ordinances and federal and state laws. Alternatively, the bond shall be released or returned if the project is cancelled prior to construction commencing.