



Solar in PA

A Developer's Perspective

Presented by:
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Solar in PA

Types of Solar Projects

Types of Solar Projects

- **Behind-the-meter (BTM)** – a system that generates power/electricity that can be used on-site without passing through a meter.¹
- **Front-of-the-meter (FTM)** – a system that generates power/electricity to any location off-site that must pass through the meter before reaching the end-user.²

¹⁻² <https://news.energysage.com/behind-the-meter-overview/>



BTM



FTM

BTM



FTM

⁵Shutterstock Enhanced License; 572602894 (purchased December 8, 2020)

Types of Solar Projects

- What type of solar project is being proposed?
 - BTM or FTM?
 - *Community solar (FTM)*
 - *Residential (BTM)*
 - *Utility-scale (FTM)*
 - **What is the total acreage of the proposed project?**



Solar in PA

Selecting a Potential Site

Selecting a Potential Site

- Land criteria:⁶
 - Proximity to substation
 - Proximity to power/electric lines
 - No wetlands
 - No floodplains
 - Avoid bad topography (e.g., slope 7% or less)
 - Avoid shading

⁶ Educational purposes only; land criteria for a solar projects may vary from project to project, state to state; solar developer's risk tolerance may vary too

Selecting a Potential Site

- Land criteria:⁷
 - Is there an airport within two miles?
 - Is there a cell tower on the property?
 - Avoid crossing over a railroad easement
 - Avoid proximity to cemeteries, golf courses, residential neighborhoods

⁷ Educational purposes only; land criteria for a solar projects may vary from project to project, state to state; solar developer's risk tolerance may vary too

Selecting a Potential Site

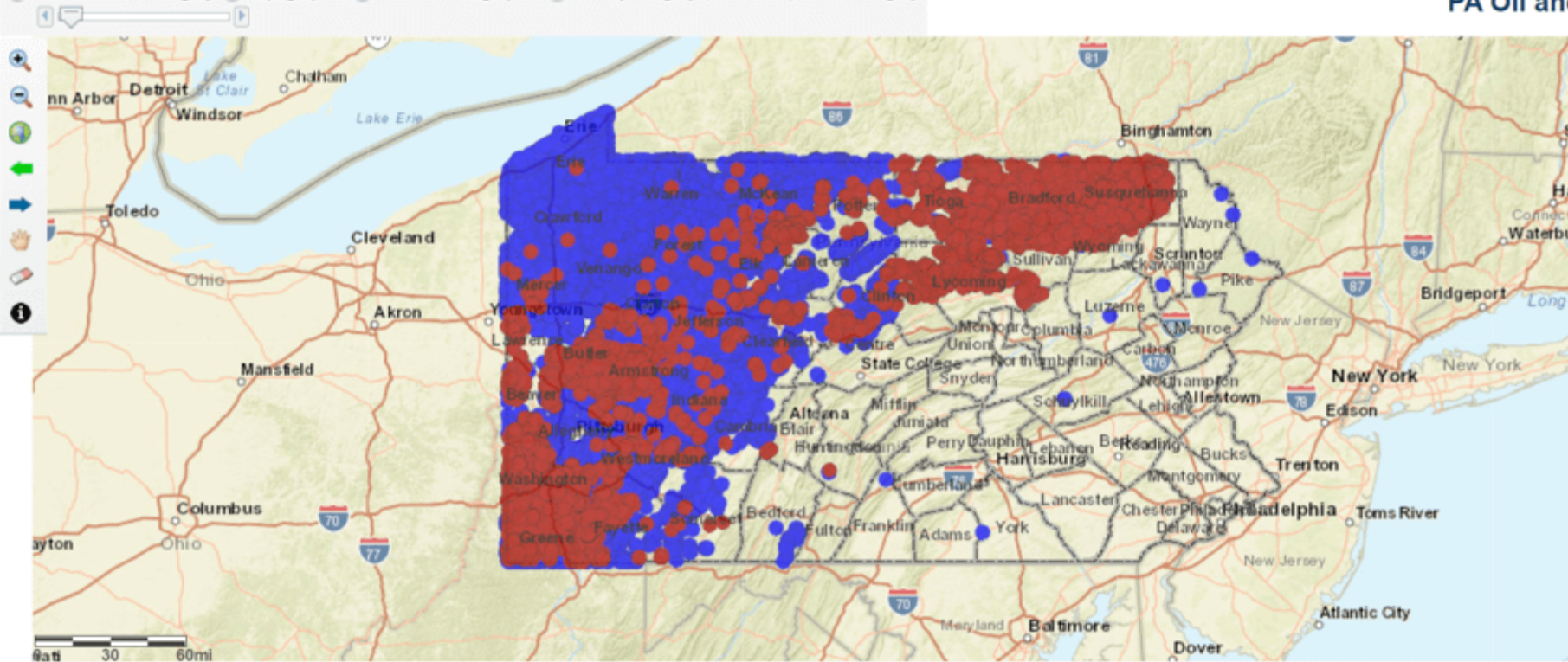
- Land criteria (specific to Pennsylvania):⁸
 - Is the property in Clean and Green?⁹
 - Is there a conservation easement on the property?
 - Is there oil and gas activity in the area?¹⁰

⁸ Educational purposes only; land criteria for a solar projects may vary from project to project, state to state; solar developer's risk tolerance may vary too

⁹ Agriculture.pa.gov/Plants_Land_Water/farmland/clean/Pages/default.aspx

¹⁰ Dep.pa.gov

ESRI Streets & Imagery Topographic National Geographic PA Map Imagery (2003-2006) & ESRI Imagery



Substation



Eden Evans Center Rd

© 2021 Google

Google Earth

Imagery Date: 9/22/2018

42°39'22.70" N

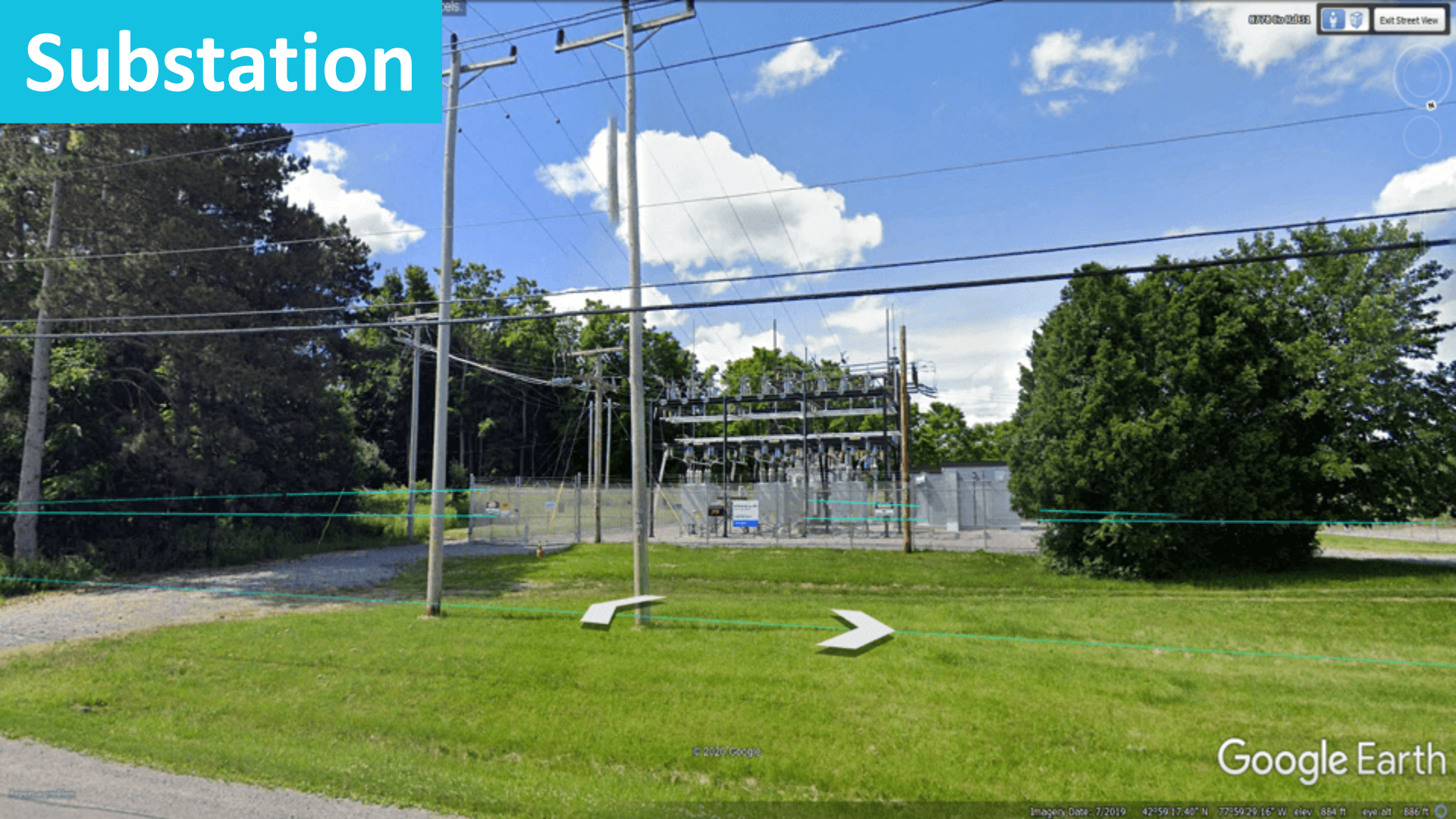
79°00'05.46" W

elev 685 ft

eye alt 4707 ft

1985

Substation



7/7/2019 10:11:11

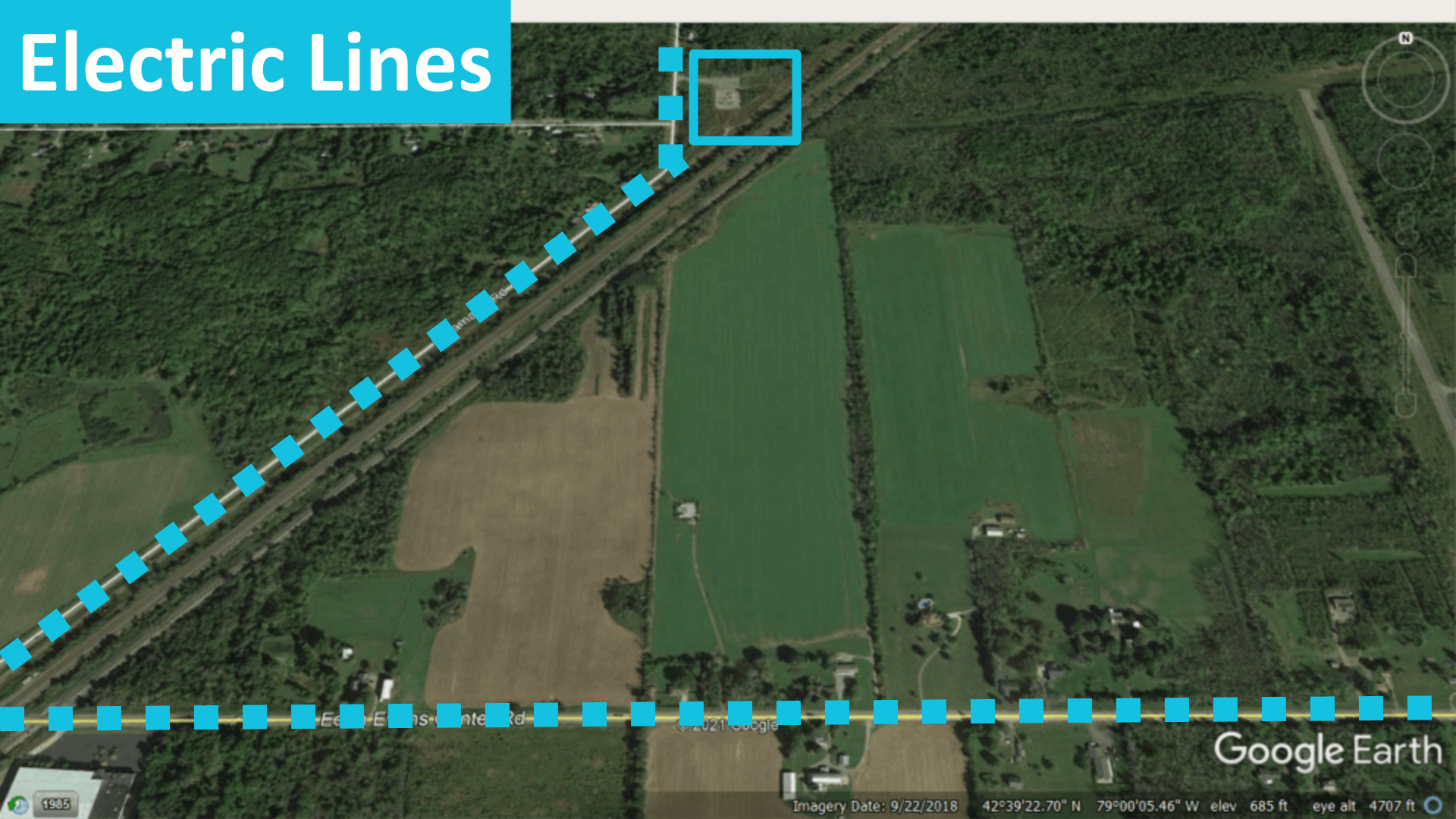
Exit Street View

© 2020 Google

Google Earth

Imagery Date: 7/2019 42°59'17.40" N 77°59'29.16" W elev: 884 ft eye alt: 886 ft

Electric Lines



Google Earth

Imagery Date: 9/22/2018 42°39'22.70" N 79°00'05.46" W elev 685 ft eye alt 4707 ft

1985

Electric Lines



20000km/h/Street View

Exit Street View

© 2020 Google

Google Earth

[Report a problem](#)

Imagery Date: 4/2019 32°43'14.74" N 96°56'23.52" W elev 477 ft eye alt 477 ft

Wetlands



Eden Evans Center Rd

© 2021 Google

Google Earth

Imagery Date: 9/22/2018

42°39'22.10" N

79°00'05.46" W

elev 686 ft

eye alt 4707 ft

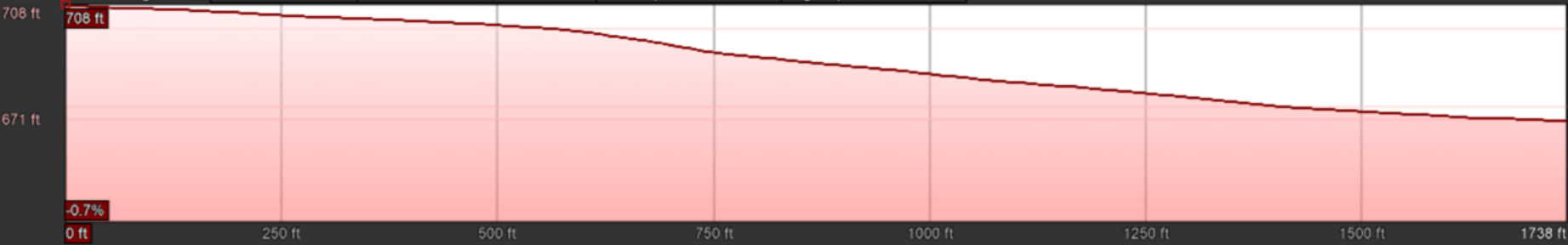
1985

Topography



Graph: Min, Avg, Max Elevation: 671, 690, 708 ft

Range Totals: Distance: 1738 ft Elev Gain/Loss: 0 ft, -37.2 ft Max Slope: -, -5.5% Avg Slope: -, -2.1%



Airport



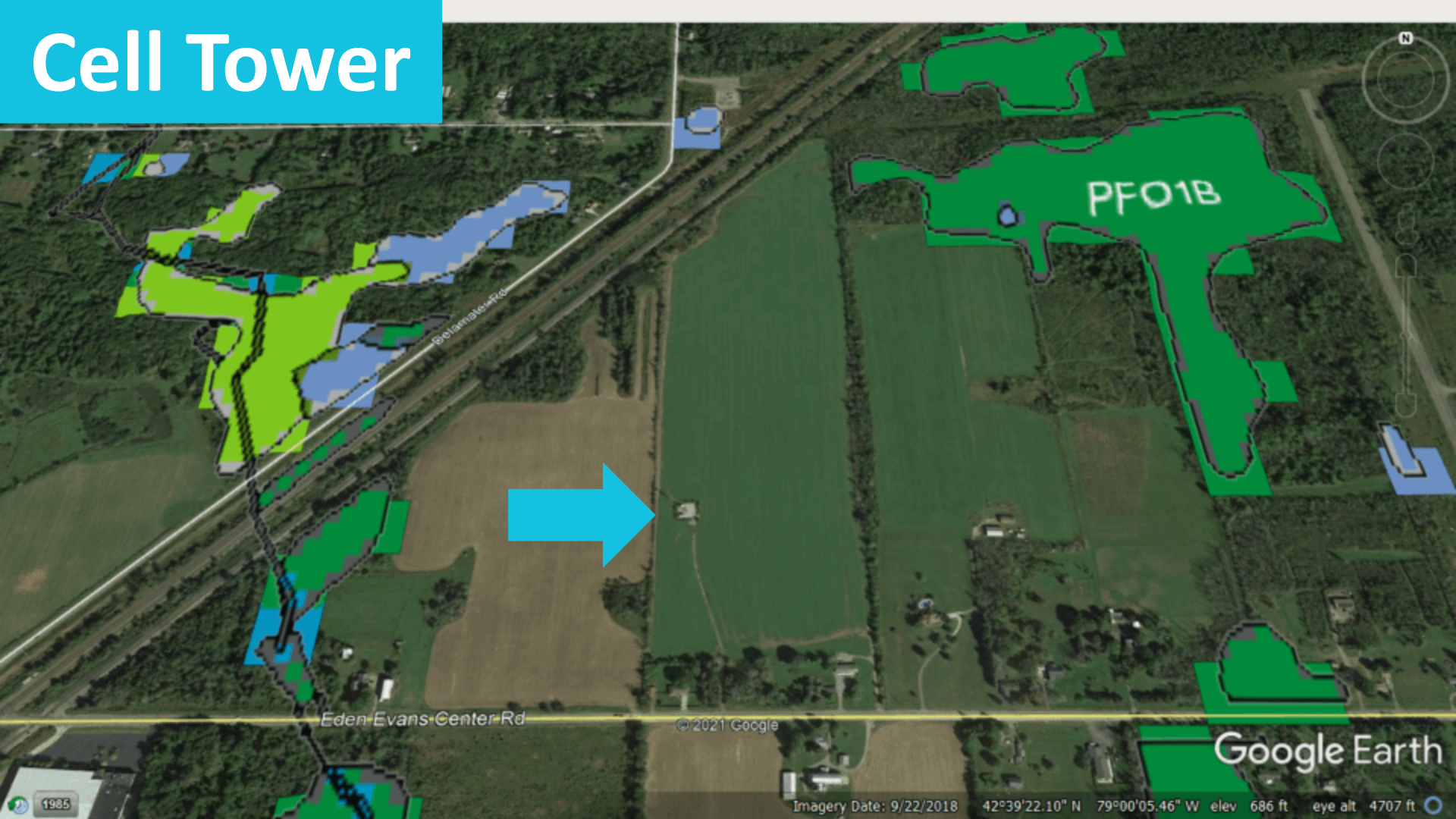
Eden Evans Center Rd

© 2021 Google

Google Earth

Imagery Date: 9/22/2018 42°39'22.10" N 79°00'05.46" W elev 686 ft eye alt 4707 ft

Cell Tower



Eden Evans Center Rd

© 2021 Google

Google Earth

Imagery Date: 9/22/2018

42°39'22.10" N

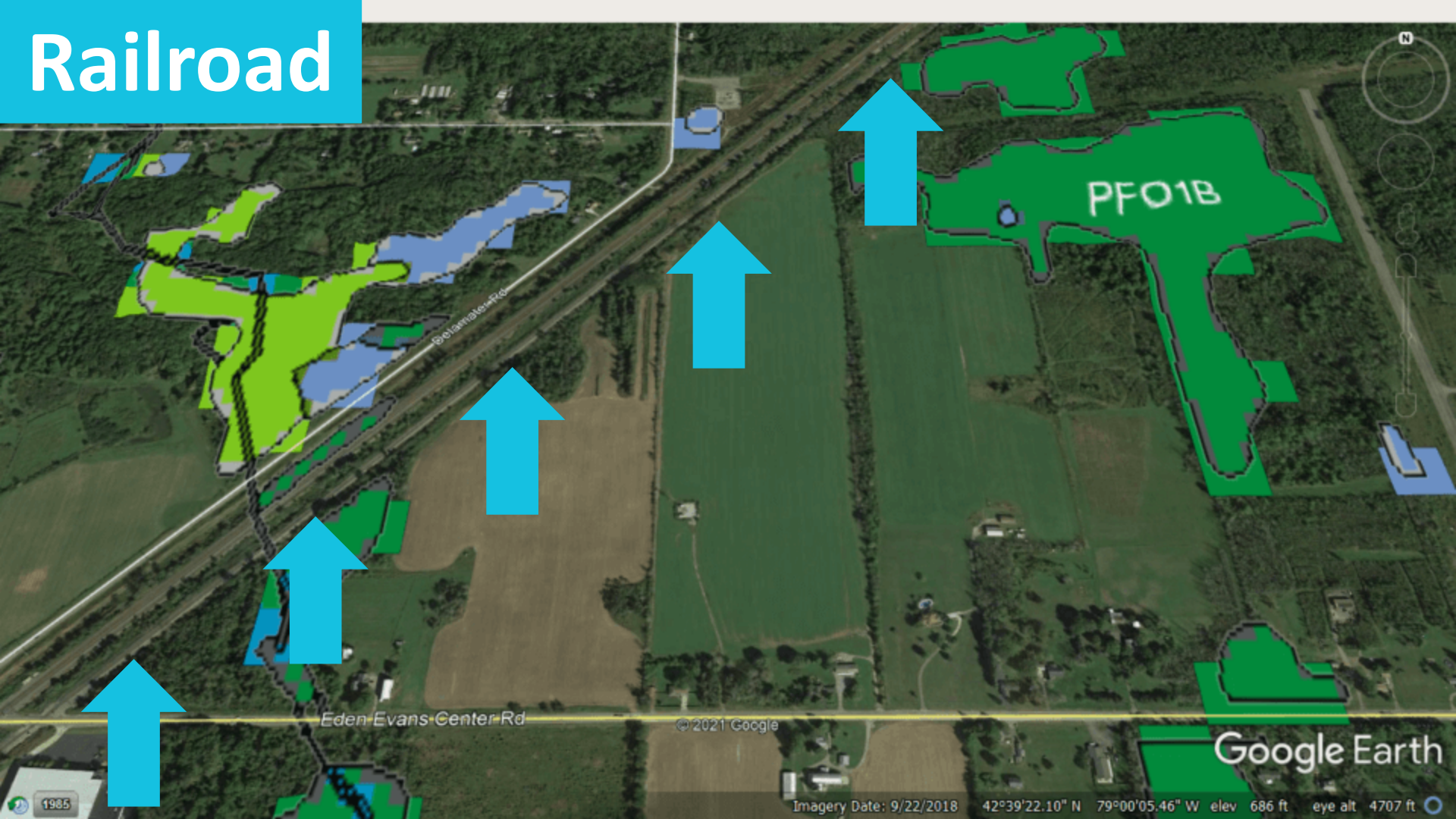
79°00'05.46" W

elev 686 ft

eye alt 4707 ft

1985

Railroad



Eden Evans Center Rd

© 2021 Google

Google Earth

Imagery Date: 9/22/2018

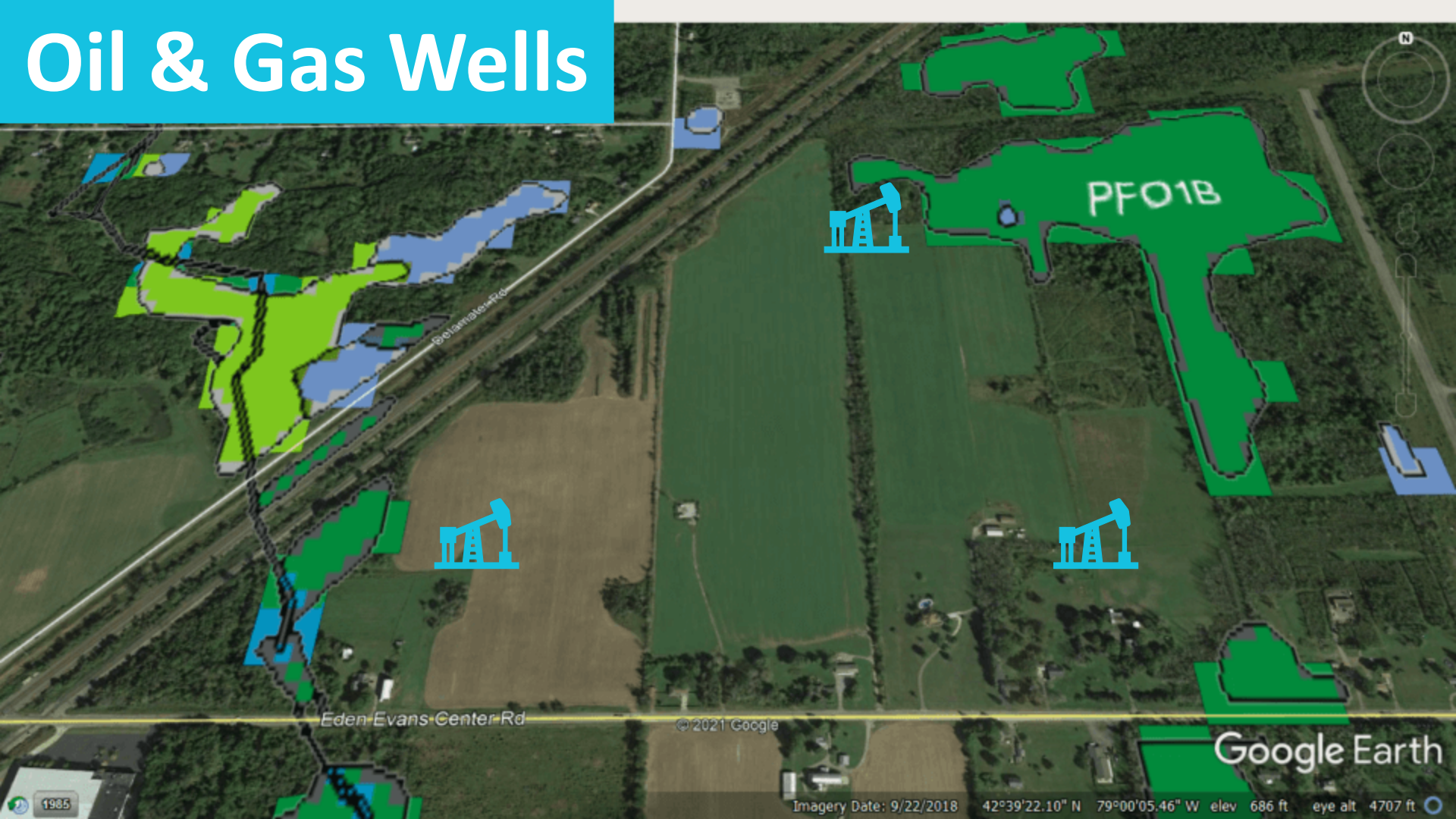
42°39'22.10" N

79°00'05.46" W

elev 686 ft

eye alt 4707 ft

Oil & Gas Wells



Eden Evans Center Rd

© 2021 Google

Google Earth

Imagery Date: 9/22/2018

42°39'22.10" N

79°00'05.46" W

elev 686 ft

eye alt 4707 ft

1985



Solar in PA

Structuring Your Agreement

Types of Solar Projects

- What type of agreement is being proposed – lease, easement, or license?
- **Can the solar developer finance the project?**

LEASE



Ground Mount

EASEMENT



Canopy

LEASE



EASEMENT

Rooftop

?



Floating

	License	Easement	Lease
Type of Right	Use	Possessory or non-possessory	Possessory
Real Property Interest	No	Yes	Yes
Revocable	Yes	No	No
Contract in Writing	Not required	Required	Required
Financeable	Maybe	Typically, yes	Yes
Insurable	Maybe	Typically, yes	Yes
Assignable	Maybe	Yes	Yes
Type of Solar Projects	Canopy	Canopy, Rooftop	Ground Mount, Rooftop

Structuring Your Agreement

- For a FTM ground mount solar project, most developers **will want the landowner to sign a lease.**

Structuring Your Agreement

1. Option to lease agreement with attached **term sheet**.
2. Option to lease agreement with attached **lease**.
3. Lease agreement with included **option period**.

OPTION

OPTION TO LEASE AGREEMENT [Ground Mounted Solar]

THIS OPTION TO LEASE AGREEMENT (this "Agreement") is entered into this ____ day of _____, 20__ (the "Effective Date"), by and between _____ ("Lessor"), and _____ ("Lessee").

WITNESSETH:

- A. Lessor is the owner of that certain property located in _____ County, and located at _____, as more particularly described on Exhibit A (the "Property").
- B. Lessee desires to obtain an option to lease up to a maximum of approximately _____ contiguous acres of the Property as conceptually shown on Exhibit B attached hereto and made a part hereof (the "Leased Premises") for the construction, installation, operation and maintenance thereon of a solar farm and all related generation, storage, transmission and interconnection facilities (the "Energy Facilities").
- C. Lessor has agreed to grant Lessee an option to lease the Leased Premises for such purposes, subject to the terms and conditions hereinafter set forth.

NOW, THEREFORE, in consideration of the foregoing and the mutual covenants and agreements herein contained, and intending to be legally bound hereby, Lessor and Lessee hereby agree as follows:

1. **Grant of Option.** Lessor hereby grants to Lessee the exclusive right and option to lease the Leased Premises, subject to the terms and conditions hereinafter set forth (the "Option to Lease").

EXHIBIT A – LEGAL

Exhibit A

Legal Description of Property

ALL THAT TRACT OR PARCEL OF LAND, situate in the Township of Huron, County of Erie and State of Ohio, being a part of Lot 52, Town 1, Range 10 of the Holland Land Company's Survey bounded and described as follows:

Beginning at a point in the center of the road leading from Huron to Sandusky, which point is about 1243 feet southerly from the intersection of the north line of said Lot 52 with the middle line of the aforesaid road, and which said point is also the northwesterly corner of the property now owned by Peter M. Tyler and Ragnhild Tyler, and said point is also the southwesterly corner of premises conveyed to David Tyler and one, by deed recorded in the Erie County Clerk's office in liber 10 of deeds at page 12; thence easterly along the southerly bounds of lands now owned by David E. Guerra and one, 225 feet to an iron stake; thence southerly and parallel with the Willow Creek Road, 140 feet to a point; thence westerly and parallel with the first course herein described, 225 feet to a point in the center of the Willow Creek Road; thence northerly along the center of the Willow Creek Road, 140 feet to the point and place of beginning. Contains lien covenant.

ALSO, ALL THAT TRACT OR PARCEL OF LAND, situate in the Township of Huron, County of Erie and State of Ohio; being part of Lot Nos. 44 and 52, Township 1 and Range 10 of the Holland Land Company's Survey; and being further bounded and described as follows:

COMMENCING at a point at the intersection of the centerline of the Willow Creek Road and _____

EXHIBIT B – TERM SHEET

B

Basic Lease Terms

Lease Term: An initial term of 30 years, with two renewal terms of 5 years each.

Annual Rent: Initially, \$ _____, with ____ % increases every 5 years thereafter.

Ancillary Rights: During the term of the Lease, the Lessee shall have the right, at no additional cost, to use existing roads on the Property and to use a portion of the Property for a construction laydown area during the initial construction, major maintenance activities and/or the removal of the Energy Facilities. Lessor shall also, grant Lessee: (A) an interconnection easement; (B) an easement for transmission, distribution and collection cables (including fiber optic cables), conduits, wire and/or lines which carry electrical energy to and/or from the Leased Premises; and (C) an easement for communication cables (including fiber optic cables), conduits, wire and/or lines which carry communications of any nature to and from the Leased Premises.

Ownership Rights: Lessee shall be the sole owner of the Energy Facilities and the energy output produced thereby, as well as any and all tax or other financial incentives.

OPTION

OPTION TO LEASE AGREEMENT [Ground Mounted Solar]

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EXHIBIT B - LAYOUT

Exhibit B

Depiction of the Land



EXHIBIT C - LEASE

EXHIBIT C Form of Ground Lease

SOLAR GROUND LEASE AGREEMENT

THIS SOLAR GROUND LEASE AGREEMENT (this "Lease") is made and entered into as of the ___ day of ___, 20__ (the "Effective Date"), by and between ___ ("Landlord") and ___ ("Tenant").

WITNESSETH:

In consideration of Ten and No/100 Dollars (\$10.00)¹ to be paid from Tenant to Landlord on or before the date that is thirty (30) business days after the Effective Date and the rent to be paid to Landlord by Tenant, as hereinafter provided, and of the covenants and agreements upon the part of Landlord and Tenant to be kept and performed, Landlord hereby leases to Tenant, and Tenant leases from Landlord, containing approximately ___ acres, located at ___, County, ___, and in substantially the location set forth on Exhibit A attached hereto, together with all other appurtenances, tenements, hereditaments, rights and easements pertaining to the property and the improvements to be constructed by Tenant and in the future located thereon (the "Premises"), to be occupied and used upon the terms and conditions set for the herein. The Premises are a portion of that certain property with Tax Parcel Nos. of ___ and ___ containing approximately ___ acres, and located in substantially the location shown in Exhibit B attached hereto and by this reference made a part hereof (the "Land").

1. Term of Lease, Extension Terms, Termination Rights, Contingencies/Due Diligence.

(a) The term of this Lease (including any extensions or renewals, the "Term") shall commence on the Effective Date and shall end at 11:59 P.M. local time on the date that is three hundred sixty (360) months² after the Rent Commencement Date (as hereinafter defined) (the "Expiration Date"), unless extended or sooner terminated as herein provided; provided, however that if the Rent Commencement Date is other than the first day of a calendar month, the Term shall be extended automatically until 11:59 P.M. local time on the last day of the calendar month in which the Term

LEASE W/ OPTION PERIOD

MENT
1

THIS OPTION TO LEASE AGREEMENT (this "Agreement") is entered into this ___ day of ___, 20__ (the "Effective Date"), by and between ___ ("Lessor"), and ___ ("Lessee").

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EXHIBIT B - LAYOUT

Exhibit B

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Solar in PA

Legislation, Developing, and Permitting

Legislation

- A **community solar** project is an array of solar panels installed **off-site**. Anyone in the area (electric utility) can access the clean energy produced and receive credits toward their electricity bill.¹⁵

¹⁵ solarpowerworldonline.com/2021/03/pennsylvania-senate-considers-bipartisan-community-solar-legislation/

Legislation

- Community solar **is not available in Pennsylvania**, but several proposed laws are currently being discussed in Harrisburg.¹⁶
- See Pennsylvania Senate Bill 472, House Bill 1161, and House Bill 989.¹⁷

¹⁶ nysenda.ny.gov/All-Programs/Programs/NY-Sun/Solar-for-Your-Home/Community-Solar

¹⁷ legiscan.com/gaits/search?state=PA&keyword=community+solar

Developing and Permitting

- Who is the Authority Having Jurisdiction (AHJ)?¹⁸
e.g., state, county, township, city
- Are additional federal or state permits required?

¹⁸ growsolar.org/permitting/

Developing and Permitting

- How does the local AHJ define **small-scale** vs. **large-scale**?
- Can we develop in the current **zoning district**?
- What are the **setback requirements**?
- Is there a **lot size restriction**?
- Does the local AHJ require **tree screening**?

Developing and Permitting

- Is a **decommissioning plan** required?
- Is a **form of surety** via escrow required? If so, when?
- Does the local AHJ allow for **battery storage**?

Developing and Permitting

- What can cause a solar project to be tabled at the option stage?
 - Lack of local legislation from the AHJ
 - Lack of interconnection from the utility
 - Unfavorable interconnection results from the utility
 - Changes in the state/local legislation and/or policy
 - Unfavorable project economics

Developing and Permitting

- Local opposition can be (and should be) addressed by the solar developer



Questions?

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[linkedin.com/in/phillip-guerra](https://www.linkedin.com/in/phillip-guerra)