

# Alternative Energy Valuation

## Alternative Energy Valuation Class Outline

- ▶ Background
- ▶ Current Laws, Case Law, and Constitutional Standard
- ▶ Proposed Amendments to Consolidated County Assessment Law
- ▶ Clean & Green
- ▶ Solar Sub-committee
- ▶ Agrivoltaics
- ▶ Zoning
- ▶ Approaches to Value
- ▶ Examples

## ▶ Background

- ▶ Assessors Association of Pennsylvania(AAP) Assessment Law Committee started reviewing Utility/Grid Scale solar in Pennsylvania in 2021.
  - ▶ Activity/Questions from Assessors on how to handle these developments.
  - ▶ Similarities and differences to windmill projects.
  - ▶ Windmill requirement for nonproprietary lease information.
  - ▶ Primary Focus on Utility/Grid Scale developments:
    - ▶ Residential or Net metering installations might need looked at in the future.
    - ▶ Community solar could be on horizon
  - ▶ Developing educational opportunities for Assessors to ensure uniform treatment compared to other classes of property, and from one county to another.
  - ▶ Recommended amendments to the Consolidated County Assessment Law.

▶ Current Laws, Case Law, Constitutional Standards

- ▶ Assessment Procedures in Pennsylvania are governed by statute & case law.
- ▶ Current Statutes, Consolidated County Assessment Law (CCAL) & General County Assessment Law (GCAL) are silent on the issue of Solar improvements.
- ▶ Constitutional Standard of Uniformity Article VIII Section 1 of the Pennsylvania Constitution provides that:

**“All taxes shall be uniform, upon the same class of subjects, within the territorial limits of the authority levying the tax, and shall be levied and collected under general laws.”**

# ► Current Laws, Case Law, Constitutional Standards

## ► § 8811. Subjects of local taxation.

(a) Subjects of taxation enumerated.--Except as provided in subsection (b), all subjects and property made taxable by the laws of this Commonwealth for county, city, borough, town, township and school district purposes shall, as provided in this chapter, be valued and assessed at the annual rates, including all:

- (1) Real estate, namely:
  - (i) houses;
  - (ii) manufactured homes and mobile homes permanently attached to land or connected with water, gas, electric or sewage facilities;
  - (iii) buildings permanently attached to land or connected with water, gas, electric or sewage facilities;
  - (iv) lands, lots of ground and ground rents, trailer parks and parking lots;
  - (v) mills and manufactories of all kinds, furnaces, forges, bloomeries, distilleries, sugar houses, malt houses, breweries, tan yards, fisheries, ferries and wharves;
  - (vi) all office buildings;
  - (vii) that portion of a steel, lead, aluminum or like melting and continuous casting structure which encloses or provides shelter or protection from the elements for the various machinery, tools, appliances, equipment, materials or products involved in the mill, mine, manufactory or industrial process; and
  - (viii) telecommunication towers that have become affixed to land.
- (2) All other things now taxable by the laws of this Commonwealth for taxing districts.

# Consolidated County Assessment Law (CCAL)

## § 8811. Subjects of local taxation.

(b) Exceptions - **The following are not subject to tax:**

(1) Machinery, tools, appliances and other equipment contained in any mill, mine, manufactory or industrial establishment shall not be considered or included as a part of the real estate in determining the value for taxation of the mill, mine, manufactory or industrial establishment.

(5) No wind turbine generators or related wind energy appliances and equipment, including towers and tower foundations, shall be considered or included as part of the real property in determining the fair market value and assessment of real property used for the purpose of wind energy generation. Real property used for the purpose of wind energy generation shall be valued under section 8842(b)(2) (relating to valuation of property).

# Consolidated County Assessment Law (CCAL)

## § 8842. Valuation of property.

The valuation of real property used for the purpose of wind energy generation for assessment purposes shall be developed by the county assessor utilizing the **income capitalization approach to value**. The valuation shall be determined by the capitalized value of the land lease agreements, supplemented by the sales comparison data approach as deemed necessary by the county assessor. **The lessee, or lessor on behalf of the lessee, shall provide the nonproprietary lease and lease income information reasonably needed by the county assessor to determine value by September 1.**

## ▶ Current Laws, Case Law, Constitutional Standards

- ▶ Valuation of Machinery and Equipment, Assessment Law & Procedure in Pennsylvania 17<sup>th</sup> Edition:
- ▶ “The landmark Pennsylvania Supreme Court decision in this area is Jones & Laughlin Tax Assessment Case, 175 A.2d 856 (Pa. 1961)....  
The court held:”
  - ▶ The intention of the legislature was clearly to abolish the tax on all parts of the machinery by removing machinery from real estate taxation
  - ▶ Evident from a study of the history of tax legislation, that the purpose of the 1953 legislation was to provide tax relief for Pennsylvania industries by removing all integrated machinery, tools, appliances, and other equipment.
  - ▶ Improvements, whether fast or loose, that are necessary and integral parts of the manufacturing process, are excluded from real estate assessment and taxation

## ▶ Current Laws, Case Law, Constitutional Standards

- ▶ Reported Lease Terms 25-50 Years
- ▶ Annual Payments of \$300 - \$2,000 per acre
- ▶ Appeal of Marple Springfield Center, Inc., 607 A.2d 708 (Pa. 1992), the Pennsylvania Supreme Court held that:
  - ▶ The income approach is the most appropriate means of establishing fair market value of real estate when rental income is below market levels, and the property is encumbered by a long-term lease.
  - ▶ Economic Reality Test - Considering actual income vs. market rents in these situations.



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# Proposed Amendments to the Consolidated County Assessment Law:

- ▶ Approved by AAP Board of Governors June 30, 2022
- ▶ Letter sent to CCAP Assessment & Taxation Committee on July 27, 2022
- ▶ Add exception for “Utility/Grid Scale Solar Farms” under section 53 Pa.C.S. § 8811. (b)
- ▶ Require non-proprietary lease and income information to be submitted to the Assessment Office by September 1<sup>st</sup> .
- ▶ Added to CCAP Pennsylvania County Platform in 2023

## ASSESSORS' ASSOCIATION OF PENNSYLVANIA Assessment Law Committee

### Co-Chairmen

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July 27, 2022

To: CCAP Assessment & Taxation Committee  
Commissioner Jeff Thomas, Chair

Re: Utility/Grid Scale Solar Farm Valuation

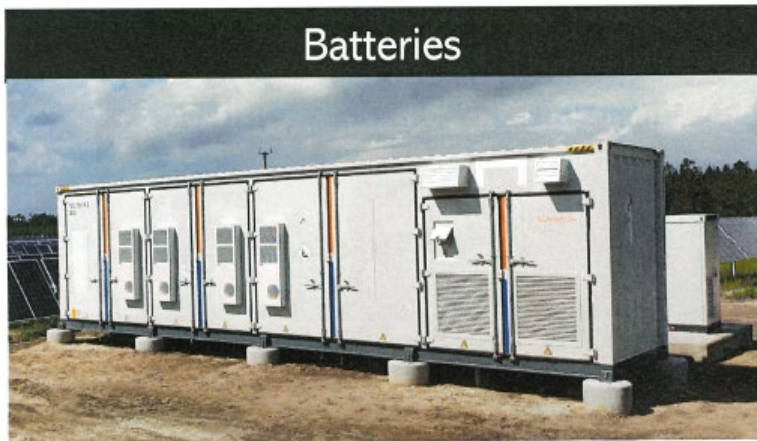
Dear Commissioner Thomas,

At the June 30, 2022 meeting of the Assessor's Association Board of Governors (AAP Board), the AAP Board voted unanimously in favor of supporting the following amendments to the Consolidated County Assessment Law (CCAL) as proposed by the Assessment Law Committee.

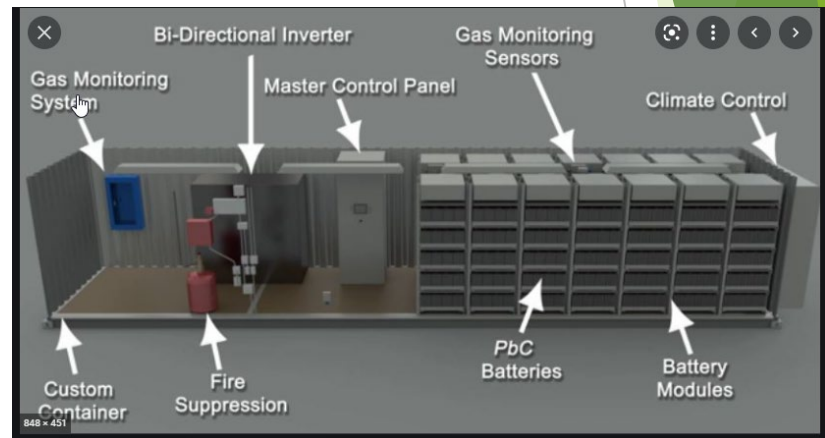
Over the last few years, Utility or Grid Scale solar farm projects have become more active across the Commonwealth. After much discussion within our committee, it was evident that Assessors had several questions regarding how to handle the valuation of these projects, and that amendments to CCAL would be needed to ensure uniform treatment of similar types of alternative energy projects. Early on in our discussions the committee came to the consensus that there were a lot of similarities between Utility or Grid Scale solar projects, and windmills, which are already covered under section 53 Pa. C.S. § 8811 & 8842 in CCAL. There are a few key aspects of the current windmill statute that will benefit assessment offices in handling the

# Consolidated County Assessment Law (CCAL)

Exterior



Interior



Is this equipment or real property?

# Consolidated County Assessment Law (CCAL)



Is this equipment or real property?

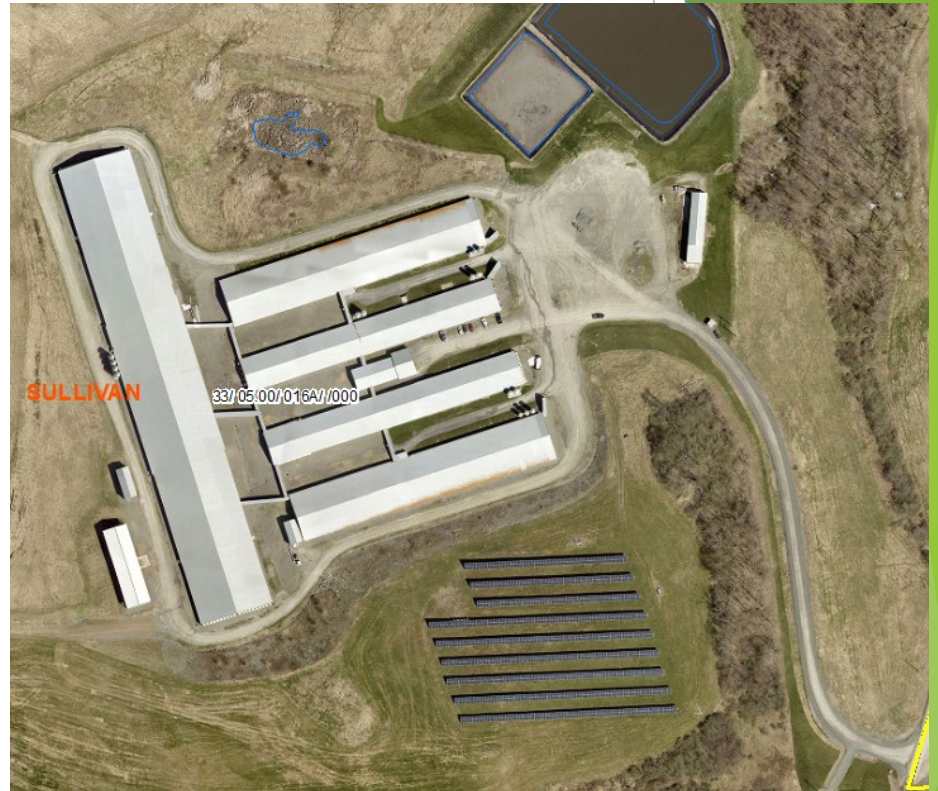
# Clean and Green

**Agricultural use** Land which is used for the purpose of producing an agricultural commodity or is devoted to and meets the requirements and qualifications for payments or other compensation pursuant to a soil conservation program under an agreement with an agency of the Federal Government. The term includes:

- (1) any farmstead land on the tract;
- (2) a woodlot;
- (3) any land which is rented to another person and used for the purpose of producing an agricultural commodity; and
- (4) any land devoted to the development and operation of an alternative energy system, if a majority of the energy annually generated is utilized on the tract.

# Clean and Green

- ▶ Agricultural Use
- ▶ 3 acre net metered
- ▶ More than 50% used on tract
- ▶ No Violation



# Clean and Green

- ▶ Agricultural Use
- ▶ 3 acre net metered
- ▶ Energy not used on tract
- ▶ Violation on entire parcel
- ▶ Remaining 10.5 acres still enrolled.



# Clean and Green

- ▶ At the present time, Grid/Utility scale solar projects result in a violation on entire tract.
- ▶ Remaining acreage if eligible could be reenrolled.
- ▶ Can land after decommissioning be returned to prior Agricultural Use?
- ▶ Leases will determine if other concurrent uses are possible.

2015 - Well Pad



2022 - Reclaimed Pasture





# AAP Solar Subcommittee

## ► Agrivoltaic



*A new agrivoltaic project aims to enlist bifacial solar panels and saffron in the effort to save small farms with new specialty crops.*

Img. Source - cleantechnica.com  
2024



Jack's Solar Garden in Boulder Colorado - Photo courtesy of Namasté Solar

Img. Source - agritecture.com  
2022



A farmer drives a combine harvester to collect sorghum under hanging solar panels on an agrivoltaic site in Ames, Missouri, on October 12, 2022.

PHOTO: KEVIN MAZUR/AP via Getty Images

Img. Source - interestingengineering.com  
2022

# Solar Lease Property Taxes

Who is responsible for the payment of taxes?

- ▶ Personal Property Taxes
- ▶ Real Property taxes
- ▶ Rollback Taxes

Other useful information

- ▶ Permitted Uses & Access
- ▶ Lease Term
- ▶ Rental Payments & Expenses

## 7. Payment of Taxes.

Grantee shall pay (a) any personal property taxes on the improvements and/or any such taxes that are directly attributable to the Solar Operations and any solar energy conversion equipment installed by Grantee on the Premises, and (b) all real property taxes or assessments levied against the Premises applicable to the period from and after the commencement of the Construction Term until the end of the Term hereof, including such taxes and assessments being imposed as of the commencement of the Construction Term and any increase in such taxes and assessments that is imposed for reason of (i) this Agreement; (ii) the addition of the improvements to the Premises; (iii) the Solar Operations thereon ("Grantee's Taxes"); and (iv) any and all realty transfer taxes assessed by reason of this Agreement. In the event that, for real estate tax purposes, the Premises is a portion of a larger parcel which is taxed as a single parcel, then (i) the portion of such real estate taxes for which Grantee will be responsible hereunder shall be the portion of the real estate taxes on the applicable land equal to the total tax on such land multiplied by a fraction with the numerator being the acreage of the Premises and the denominator being the acreage of such entire parcel and (ii) Owner shall be responsible for the balance of such real estate taxes, which shall be paid on or before the applicable delinquency date. Grantee shall have the right, at its sole expense, to appeal or contest any such tax it could be responsible to pay under this Agreement and to compromise and settle the same, and Owner shall execute such petitions and agreements and otherwise cooperate with Grantee to the extent reasonably necessary for Owner to do so. Owner shall deliver to Grantee copies of all real property tax bills within thirty (30) days after receipt of the bill by Owner from the taxing authority and Grantee shall pay Grantee's Taxes on or before the date payment is due. Owner shall pay all property taxes assessed against the Premises prior to the Construction Term Commencement Date and after the expiration or earlier termination of this Agreement. Owner shall pay all transfer, recordation, conveyance, and other taxes associated with any conveyance or encumbrance of any of Owner's interest in the Premises. Grantee shall pay all transfer, recordation, conveyance, and other taxes associated with a conveyance or encumbrance of any of Grantee's interest in the Premises. The provisions of this Section 7 shall survive the termination or expiration of this Agreement.

In the event the Owner's property is under and subject to State Clean and Green program (the "Program"), Grantee shall comply with the rules and notification procedures under the Program, insofar as the same may apply to the operations of Grantee on the Premises. Any rollback taxes, penalties withdrawal, or reimbursements, including any interest charged thereon associated with removing the Property from the Program shall be paid by Grantee.

# Highest and Best Use

Highest and Best Use – is an appraisal and zoning concept that evaluates all the possible, permissible and profitable uses of a property to determine the use that provides the owner with the highest net return on investment consistent with existing neighboring land uses.

## Order of Highest and Best Use

1. **Is it legally permissible**
2. Is it physically possible
3. Is it financially feasible
4. Does it maximize productivity

# Zoning Approval of the Land Use

## Zoning Approval is largely uncharted territory.

- ▶ PA zoning ordinances, unless very recently amended to account for solar leasing as a use in the township, will require approval of solar leasing through a *conditional use* application to the township supervisors (not the zoning hearing board). (“Uses not otherwise provided for”)
- ▶ “Conditions“ can be attached and presently there are no controls over how extensive or unrealistic those conditions may be. That raises the undetermined legal question of whether, and to what extent, townships will “regulate” solar generation facilities. DEP is already involved; FERC (Federal Energy Regulatory Commission) is the regulatory entity, not PA Public Utility Commission.
- ▶ The lease documents agree that the developer is 100% responsible for getting zoning approval (as well as all other government approvals) but also require landowner assistance.

# Zoning Ordinance Example/Process

More than just adopting an ordinance - 3-part process as it affects:

- ▶ Solar Panel Ordinance (New)
- ▶ Storm Water Management
- ▶ SALDO (Subdivision and Land Development Ordinance)

# Accessory Solar System & Principal Solar System

Define the above in the ordinance, provide amendment to the definitions

- ▶ Where are you going to permit it? (all zoning districts with exceptions of 10 sqft or less is exempt and those constructed prior to the ordinance)
- ▶ Permit Requirements and financial security for decommissioning
- ▶ Roof and Wall Mounted Accessory Solar Energy Systems
- ▶ Ground Mounted Accessory Solar Energy Systems
- ▶ Setbacks and Fencing Requirements
- ▶ Coverage (total surface area on the property shall not exceed 5% of the lot area)

# Accessory Solar System & Principal Solar System

Coverage (total surface area on the property shall not exceed 5% of the lot area

- ▶ Minimum Lot Size (1 ac)
- ▶ Access driveways
- ▶ Security (Lighting, fencing, etc.)
- ▶ Submit Storm Water Management Plan for review and approval by township engineer
- ▶ Decommissioning:
  - ▶ 12 months to dismantle if no electricity is generated for a period of 12 continuous months
  - ▶ The owner is to provide an updated decommissioning cost every 5 years to the municipality, and if necessary, increase the cost of financial security to cover the updated cost.



# Decommissioning

## Sample ordinance language

- a. The PSES owner is required to notify the Township within thirty (30) days following permanent cessation or abandonment of the operation. The PSES shall be presumed to be discontinued or abandoned if no electricity is generated by such system for a period of twelve (12) continuous months and the owner of the PSES has evidenced its intent to permanently discontinue operation of the PSES.
- b. The PSES owner shall then have twelve (12) months in which to dismantle and remove the PSES, including all solar-related equipment or appurtenances related thereto, including, but not limited to, buildings, cabling, electrical components, roads, foundations and other associated facilities, from the property, except to the extent the owner of the property agrees that roads and foundations may remain in place. If the owner fails to dismantle and remove the PSES to the extent required by this paragraph within the established time frames, the Township may complete the decommissioning at the owner's expense.
- c. Prior to the issuance of a permit by the Township, the owner shall provide financial security in the form and amount acceptable to the Township based on an estimate provided by a professional engineer registered in the Commonwealth of Pennsylvania (taking into account the salvage value of the PSES) to secure the expense of dismantling and removing the PSES and stabilizing the land for storm water management purposes. The decommissioning cost estimate shall be updated by a professional engineer registered in the Commonwealth of Pennsylvania at the developer/owner's expense every five (5) years thereafter and the financial security shall be adjusted accordingly.

# Approaches to Value

**Cost approach** - that is, reproduction or replacement, as applicable, less depreciation and all forms of obsolescence.

**Comparable sales approach** - estimates a property's value by reference to comparable sales that has similar characteristics of the property being assessed

**Income approach** - the concept that current value is the present worth of future benefits to be derived through income production by an asset over the remainder of its economic life. The income approach uses capitalization to convert the anticipated benefits of the ownership of property into an estimate of present value.

Cost Approach - reproduction or replacement, as applicable, less depreciation and all forms of obsolescence.

- Site Development
  - On-site and Off site Improvements
    - ▶ Off-site
      - ▶ Streets
      - ▶ Sidewalks
      - ▶ Curbing
      - ▶ Traffic lights
      - ▶ Street Lights
    - ▶ On-site
      - ▶ Paving
      - ▶ Grading
      - ▶ Driveway
      - ▶ Landscaping
      - ▶ Sewers and Utility Hookups
- Development Cost
  - Installation of panels
  - Connecting panels to battery

# Approaches to Value

**Cost Approach** - reproduction or replacement, as applicable, less depreciation and all forms of obsolescence.

1. Estimate market value of vacant land
2. Site Development
  - On-site and Offsite Improvements
    - Underground utilities
    - Road Construction
    - Site clearing
      - Excavation
    - Fence

# Approaches to Value

**Comparable sales approach** - estimates a property's value by reference to comparable sales that has similar characteristics of the property being assessed

- If sold as an improved solar farm, how do we consider the amount of adjustment for equipment?

Suggestions or Comments?

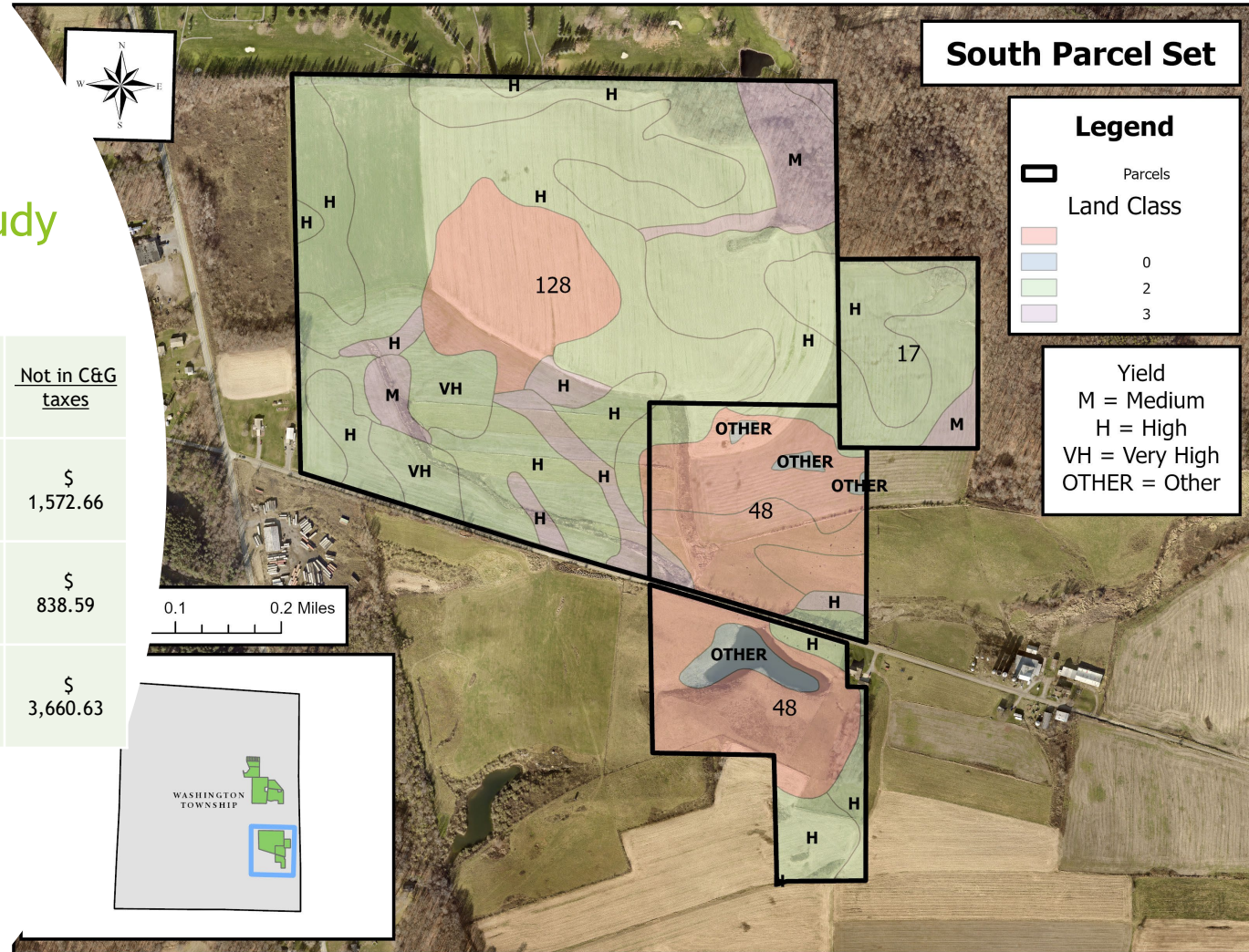
# Approaches to Value

## Steps in the Income Approach To Value

1. Estimate Potential Gross Income (PGI)
2. Estimate vacancy and rent loss
3. Subtract vacancy and credit loss from PGI, and then add miscellaneous or ancillary income, this equals Effective Gross Income (EGI).
4. Estimate expenses, fixed, operating and reserves.
5. Subtract expenses from EGI, this equals Net Operating Income (NOI).
6. Develop a Cap Rate:
7. Divide NOI by the cap rate you calculate to arrive at value

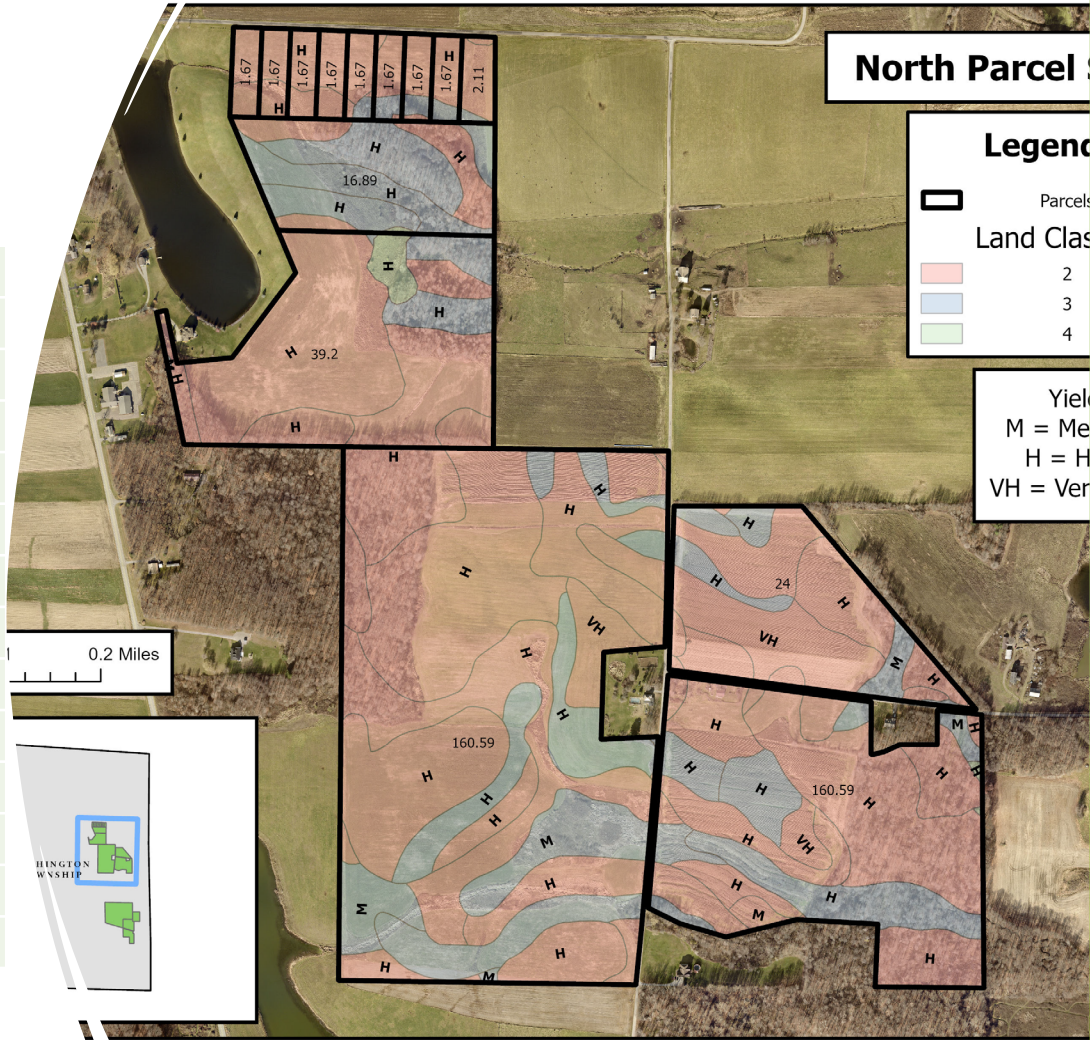
# Solar Farm Case Study

Parcel	Acres	Market Value	C & G	C&G Taxes	Not in C&G taxes
1	48	\$ 64,700	\$ 32,300	\$ 785.12	\$ 1,572.66
2	17	\$ 34,500	\$ 13,000	\$ 315.99	\$ 838.59
3	128	\$ 150,600	\$ 89,500	\$ 2,175.48	\$ 3,660.63



# Solar Farm Case Study

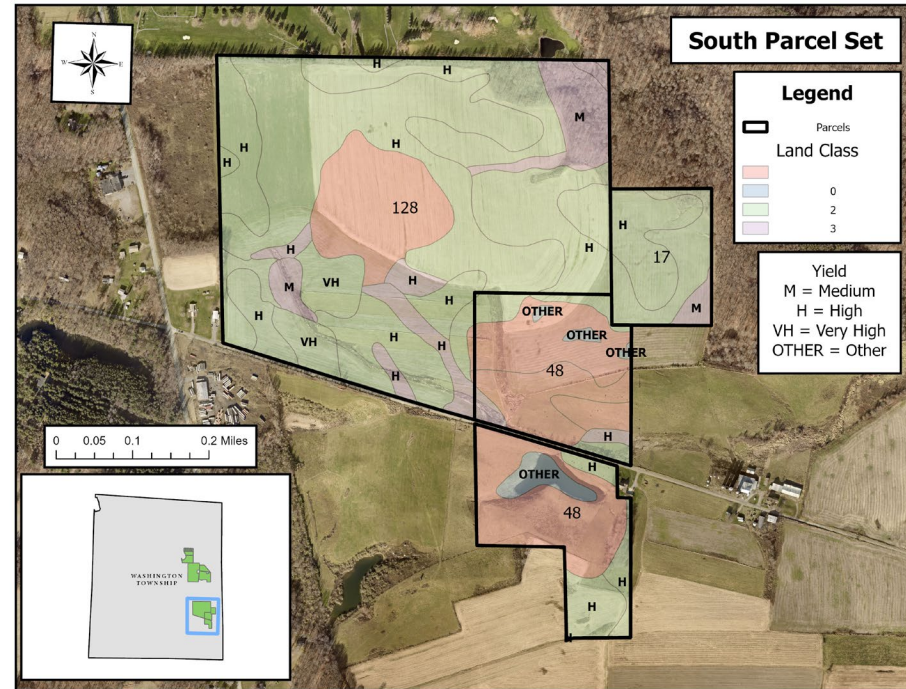
Parcel	Acres	Market Value	C & G	C&G Taxes	Not in C&G taxes
4	165.75	\$ 208,400	\$ 115,300	\$ 2,802.60	\$ 5,065.58
5	24	\$ 48,900	\$ 18,200	\$ 442.39	\$ 1,188.61
6	39.2	\$ 64,400	\$ 26,500	\$ 644.14	\$ 1,565.37
7	16.89	\$ 28,400	\$ 10,800	\$ 262.52	\$ 690.32
8	1.67	\$ 23,100	\$ 1,300	\$ 31.60	\$ 561.49
9	1.67	\$ 23,100	\$ 1,300	\$ 31.60	\$ 561.49
10	1.67	\$ 23,100	\$ 1,300	\$ 31.60	\$ 561.49
11	1.67	\$ 23,100	\$ 1,300	\$ 31.60	\$ 561.49
12	1.67	\$ 23,100	\$ 1,300	\$ 31.60	\$ 561.49
13	1.67	\$ 23,100	\$ 1,100	\$ 26.74	\$ 561.49
14	1.67	\$ 23,100	\$ 1,100	\$ 26.74	\$ 561.49
15	1.67	\$ 23,100	\$ 1,300	\$ 31.60	\$ 561.49
16	2.11	\$ 24,400	\$ 1,700	\$ 41.32	\$ 593.09





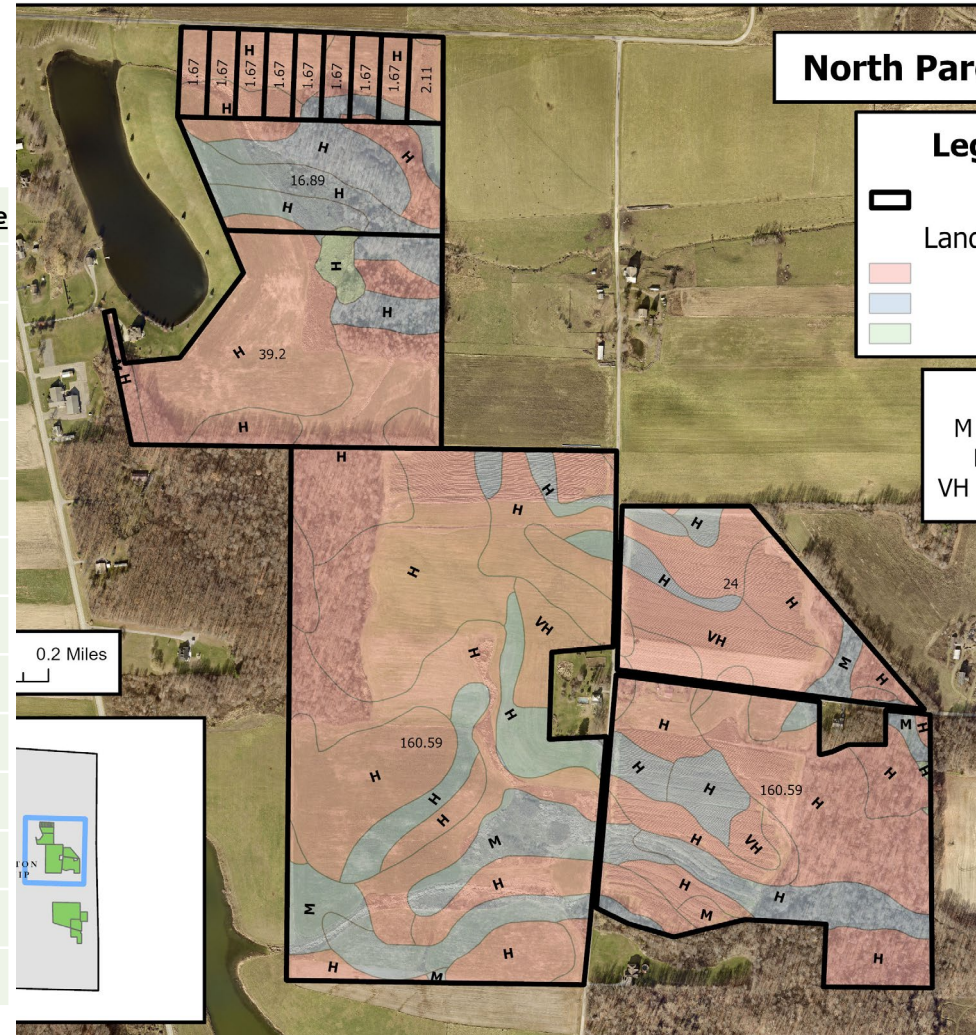
# Solar Farm Case Study

<u>Parcel</u>	<u>Acres</u>	<u>Market Value</u>	<u>C &amp; G Value</u>	<u>Mkt Value PP Acre</u>	<u>C&amp;G PP Acre</u>
1	48	64,700	32,300	\$ 1,347.92	\$ 673
2	17	34,500	13,000	\$ 2,029.41	\$ 765
3	128	150,600	89,500	\$ 1,176.56	\$ 699



# Solar Farm Case Study

Parcel	Acres	Market Value	C & G Value	Mkt Value PP Acre	C&G PP Acre
4	165.75	208,400	115,300	\$ 1,257.32	\$ 696
5	24	48,900	18,200	\$ 2,037.50	\$ 758
6	39.2	64,400	26,500	\$ 1,642.86	\$ 676
7	16.89	28,400	10,800	\$ 1,681.47	\$ 639
8	1.67	23,100	1,300	\$ 13,832.34	\$ 778
9	1.67	23,100	1,300	\$ 13,832.34	\$ 778
10	1.67	23,100	1,300	\$ 13,832.34	\$ 778
11	1.67	23,100	1,300	\$ 13,832.34	\$ 778
12	1.67	23,100	1,300	\$ 13,832.34	\$ 778
13	1.67	23,100	1,100	\$ 13,832.34	\$ 659
14	1.67	23,100	1,100	\$ 13,832.34	\$ 659
15	1.67	23,100	1,300	\$ 13,832.34	\$ 778
16	2.11	24,400	1,700	\$ 11,563.98	\$ 806



# Income Approach to Value

**How to value a 455 acre solar farm by the income approach to value?**

1. 455 acres x \$1000/acre = \$455,000 - Potential Gross Income (PGI)
2. \$22,750 vacancy & credit loss (5%)
3. \$455,000 - \$22,750 = \$432,250 - Effective Gross Income (EGI)
4. \$43,225 in Expenses (10%)
5. \$432,250 - \$43,225 = \$389,025 - Net Operating Income (NOI)
6. Cap rate of 8%
7. \$389,025 / 8% = \$4,862,813
8. \$4,862,813 x 82.8% = \$4,026,400 Assessment
  - ▶ (Market Value x CLR = Assessment)
9. \$4,026,400 / 455 = \$8,850 Price Per Acre

# Tax Implication of Solar Farm

Case study of a 455 acre Solar Farm:

<u>Tract</u>	<u>Acres</u>	<u>Market Value</u>	<u>C &amp; G</u>	<u>C&amp;G Taxes</u>	<u>Not in C&amp;G taxes</u>	<u>Proposed Solar Assessment (\$8,850 per Acre)</u>	<u>Proposed Solar Farm Taxes (24.307 Mill)</u>
North	261.31	\$ 559,300.00	\$ 182,500.00	\$ 4,436.05	\$ 13,594.89	\$ 2,312,593.50	\$ 56,212.21
South	193.69	\$ 249,800.00	\$ 134,800.00	\$ 3,276.59	\$ 6,071.88	\$ 1,708,050.00	\$ 41,517.57
455		\$ 809,100.00	\$ 317,300.00	\$ 7,712.64	\$ 19,666.77	\$ 4,020,643.50	\$ 97,729.78

# AAP Solar Subcommittee

- ▶ Review current assessment practices concerning solar in PA
- ▶ Gather data on proposed and existing projects in PA
- ▶ Gather data on how other states are handling solar assessment & taxation
  - ▶ Is a tax similar to Act 13 tax on oil & gas production possible?
- ▶ Effective Date of Violation - Should these be treated the same as gas wells using spud date?
  - ▶ Date they started construction of the of panels?
  - ▶ Date they started the site improvements?
  - ▶ Project Completion
- ▶ Agrivoltaics