



Real Property Value and Solar Energy
2018 North Carolina Property Assessment Seminar



Disclosure

The following presentation represents the views and opinions of Duke Energy Corporation employees. Any information provided within the presentation is merely to assist with an increase of knowledge regarding the subject matter. Monetary figures and terms suggested with land leasing agreements do not represent a single agreement nor should be used as a basis of further discussions or external calculations.

Purpose – Real Property and Land Owner Values

Has personal or real property been the focus point of solar facilities?

- Personal.

Is real or personal property more important than the other?

- No, both carry the same weight of importance and should be given the same amount of attention.

The past few assessment years have seen on larger focus on real property

- Solar personal property rules justified
- Popularity of solar farms
- Property conversion (agriculture to commercial shift)

Agenda

- I. Common Language
- II. Scope
- III. Solar Farm Breakdown
- IV. Point of Assessment
- V. Securing a Solar Site
- VI. Real Estate
- VII. Ground Lease & Easement Agreement
- VIII. Agreement Terms and Payments
- IX. Real Estate Assessment & Taxes
- X. Questions, Remarks, & Discussion



Common Language

Solar Farm– A facility to produce electricity from harvesting the sun's rays and delivering the electricity in a usable form to a point of use.

Commercial/Utility Solar Farm – A solar facility, usually greater than 1 megawatt, that will produce electricity to sell to an off taker or electric utility customers through a power purchase agreement or public utility rates for revenue.

Off Taker – The purchaser of produced electricity.

Power Purchase Agreement (PPA) – A contract to sell a desired amount of electricity at a desired price.

Solar Land Lease/Agreement – An agreement between a real estate owner, lessor, and the solar farm, lessee, with defining terms and conditions for operating said facility on the property.

Scope

Session will include discussions around Commercial Solar Farms.

- Farms typically larger than 1 Megawatt
- Power Purchase Agreement (PPA)
- Land Lease Contracts
- Utility Interconnections



Items and topics not included in presentation scope;

- Residential Rooftop
- Solar Leasing
- Net Metering

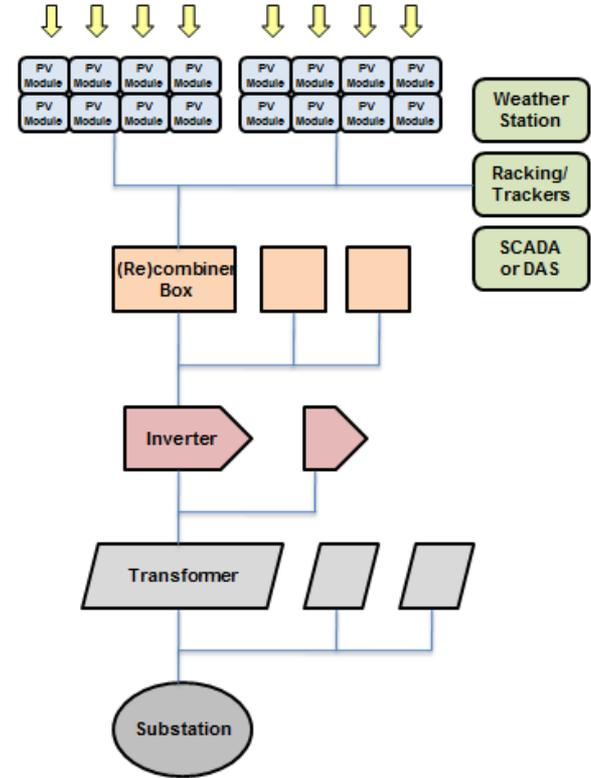


Solar Farm Breakdown

Components of a Solar Farm and assessable classifications.

Personal Property

- (See picture at right)
- Constructed site costs include about 95% of personal property improvements.
- Appraised value on the owner of the solar farm.
- Covered under the 80% abatement
 - NCGS § 105-275(45)



Solar Farm Breakdown - Continued

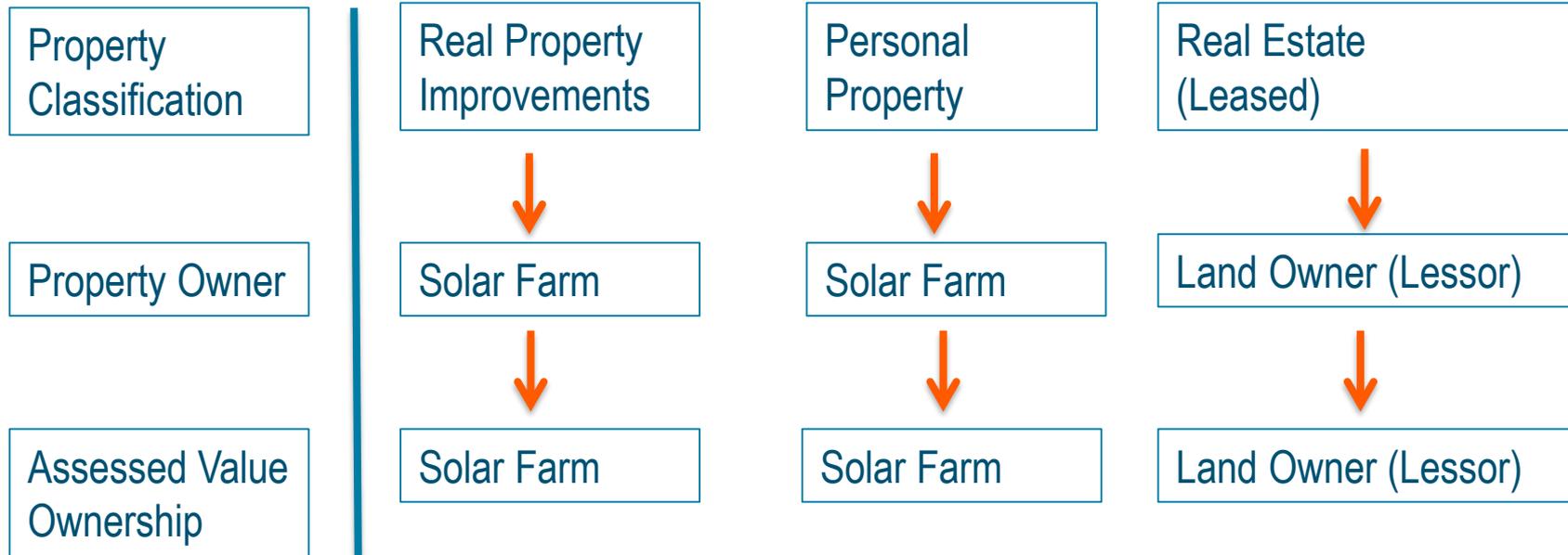
Real Property Improvements

- Constructed site costs include about 2-5% of real property improvements.
 - Fencing, grading, stationary buildings, roads, gravel, shrubbery
- Real property improvements are appraised on the owner of the solar farm.
- Does not fall under 80% exemption



Point of Assessment

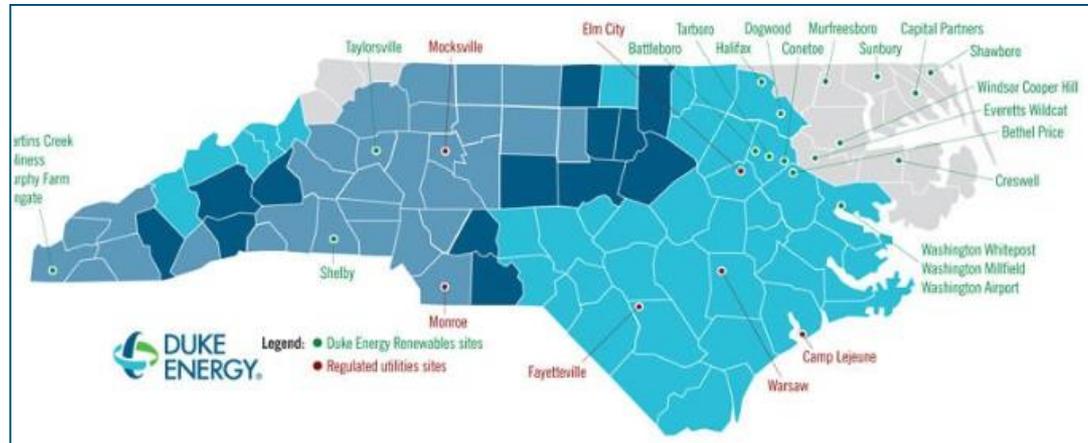
Representation of property classes and assessable owner



Securing a Solar Site

Conditions have to be met in order to facilitate a commercial site

- Ample adequate acreage
 - Flat, non-shaded, non-wetland, etc.
- Eastern or Western North Carolina?
 - Does not necessary affect placement, but can affect size.



Securing a Solar Site – Continued

County Commission and Local Approval

- Commissioners vote on approval of permitting
- Residential locals can voice opinions at commissioner hearings

Opposing Views

- Eye sore
- Property value effects (rising land values and inaccuracies)
- Agriculture land loss



Securing a Solar Site – Continued

- Access to effective electric transmission or distribution lines
 - Higher the Megawatt the larger the line requirement
- Regulatory Commission (PPA's and Utilities)



Ground Lease & Easement

Imperative to establish during early development stages!

Why First?

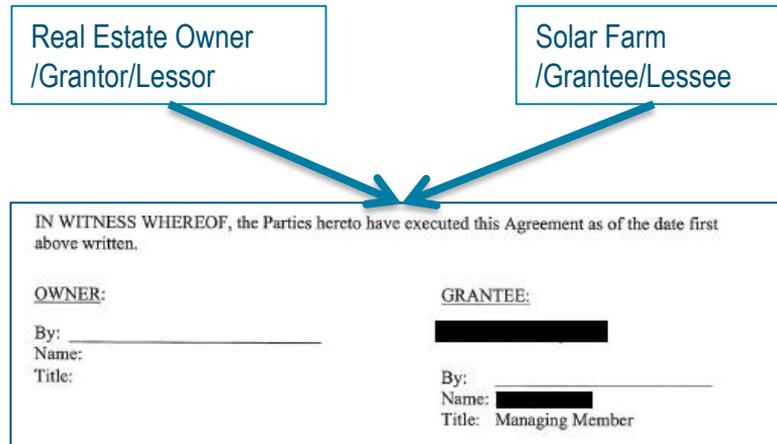
- Defines possible area of solar development
 - Project size, site compatibility, etc.
- Requirements for permitting
- Internal business cost review
- County and local approvals

*Discussions and negotiations early on does not guarantee development.

Ground Lease & Easement – Cont.

What items can go into a lease and easement agreement?:

- Defined boundaries of development area
- Terms of development, construction, and operation
- Length of time(possible extensions)
- Payment terms and reimbursements



Three Stages of Development



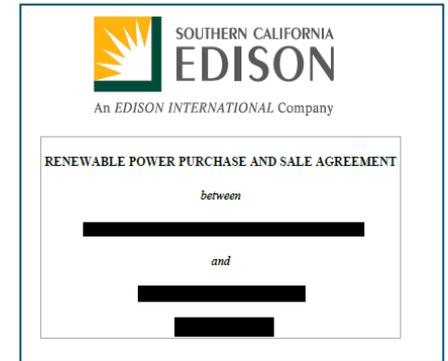
Ground Lease & Easement – Cont.

Due Diligence

Period – Usually about 1 year

Tasks & Responsibilities

- Permitting
- Land Surveying
- Lease Amendments
- PPA/Interconnection Agreement



*Agreements include contingencies and options to cancel for non-development

Ground Lease & Easement – Cont.

Construction

Period – *Usually less than 1 year

Tasks & Responsibilities

- Land grading
- Equipment delivery
- Installation
- Interconnection



*Timing of real estate classification change, i.e. present-use/agriculture to commercial

Ground Lease & Easement – Cont.

Operation

Period – *25-30 year proposed operating life

Tasks & Responsibilities

- Commercial power generation
- Remote monitoring
- Maintenance



*Length of operating life is usually based on length of PPA

Agreement Terms and Payments

Possible Terms & Conditions in Agreements

- Length of agreement (25-30 years, plus options to extend)
- Responsible parties of land control and lessee improvements
 - Lessee land responsibilities (erosion, road requirements, etc.)
 - Lessee improvement control (solar equipment and real property improvements)
- Contingencies & Termination
- Landlord reimbursable items
 - Property Tax
 - Other assessments (sewage, waste management, roads).

Agreement Terms and Payments – Cont.

Land lease and easement payments are usually broken into the three segments paid annually:

- Due Diligence
 - Minimal consideration
 - Very short length of time (one time payment)
- Construction
 - Can be half of annual operations amount
 - Typically only one payment
- Operation
 - Paid annually for each year of operation
 - Possible royalties (uncommon for solar, but possible)
 - Reimbursement of property tax and assessments

***Possible payment amounts will be discussed verbally during presentation**

Common Real Estate Tax Terms

Loss of Agriculture Classification (if applicable)

- Usually occurs during/after construction
- Involves “rollback” taxes
 - Reimbursed to landowner or paid directly

Reimbursement of Property Tax

- Contracted with agreement
- Reimbursement only on defined leased portion

Right to Protest and Appeal

- Lessee is given the option to protest and appeal appraised value

Land and Real Property Appraisal

Current appraisal of three parcels that are fully developed and covered by solar

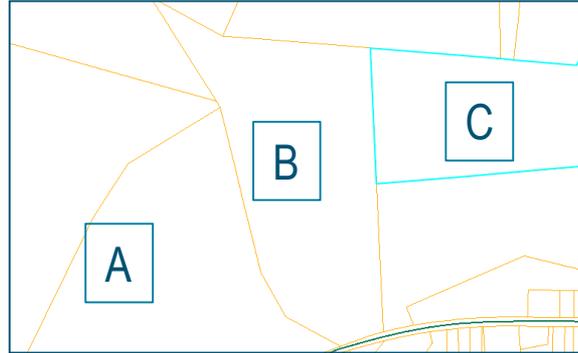
Scope of following appraisal:

- Single member LLC solar facility
- Common land owner
- Under lease agreement for entire parcels
- 2017 last reappraisal

*The following parcels have been kept confidential for presentational purposes, but contain factual data gathered from a selected North Carolina county.

Real Estate Assessment & Taxes – Cont.

Appraisal Cards



Parcel A

SEGMENT TYPE	SIZE	VALUE
HOMESITE/PR/FAIR [RP]	1.00	\$13,500.00
SOLAR FARM	162.40	\$1,624,000.00
WOOD/PAVED EXCL	1.00	\$1,200.00
WOOD/PAVED GOOD	2.00	\$2,200.00
WOOD/PAVED FAIR	1.00	\$650.00

Parcel B

SEGMENT TYPE	SIZE	VALUE
SOLAR FARM	91.00	\$910,000.00
WOOD/PAVED EXCL	12.00	\$14,400.00
WOOD/PAVED FAIR	6.10	\$3,965.00

Parcel C

SEGMENT TYPE	SIZE	VALUE
SOLAR FARM	148.14	\$1,481,400.00

Size = Acreage

Real Estate Assessment & Taxes – Cont.

Appraisal Cards – Value/Acre

A – \$10,000/Acre

B – \$10,000/Acre

C – \$10,000/Acre

*Consistency is best practice, but sometimes uncommon

Inconsistences and/or Concerns

- Facility to facility or parcel to parcel acreage value
- Entire parcel zoned as commercial/solar farm
- Real property improvements double assessed (see Point of Assessment Slide)

Real Estate Assessment & Taxes – Cont.

Alleviating Concerns

- Request land owner/developer for site plans to ensure acre usage
- County level review of all designated solar real estate
 - Ensures fair assessment
 - Common in other states
- Discussions with solar farm business to ensure real property improvements are being reported as tenant improvements

Real Estate Appraisal Opinions

- Consistency
- Capitalization method based off of annual lease agreement proceeds (Income Valuation Method)
- Market comparisons with multiple sites if not county or state

Questions, Remarks, & Discussion

