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Zoning for Alternative Energy

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Overview

- Introduction to Solar Energy
- Recent Surge in Solar Energy Developments
  - Why is this important for Local Governments?
- Role of Local Governments with Respect to Solar Energy Development
  - Existing land-use regulatory powers and how they apply to solar energy
- Planning/Zoning Issues
  - Many local codes fail to address solar energy
  - How should/can local governments regulate solar energy?
  - Issues/impacts from solar energy – hot topics

What is Solar Energy?

- Solar energy systems convert the energy from the sun into electricity.
- Photovoltaic (PV)
  - Solar cells convert sunlight directly into electricity; conversion of light (photons) into electricity (voltage).
- Hot Water
  - Sun hits collectors, heating a non-toxic antifreeze mix, which moves the heated mix to a heat exchanger, which heats a water supply.
- Concentrated Solar Power
  - Use of mirrors and lenses to concentrate sunlight, creating thermal energy. The concentrated sunlight drives an engine (steam turbine) connected to a generator.

Solar Photovoltaic

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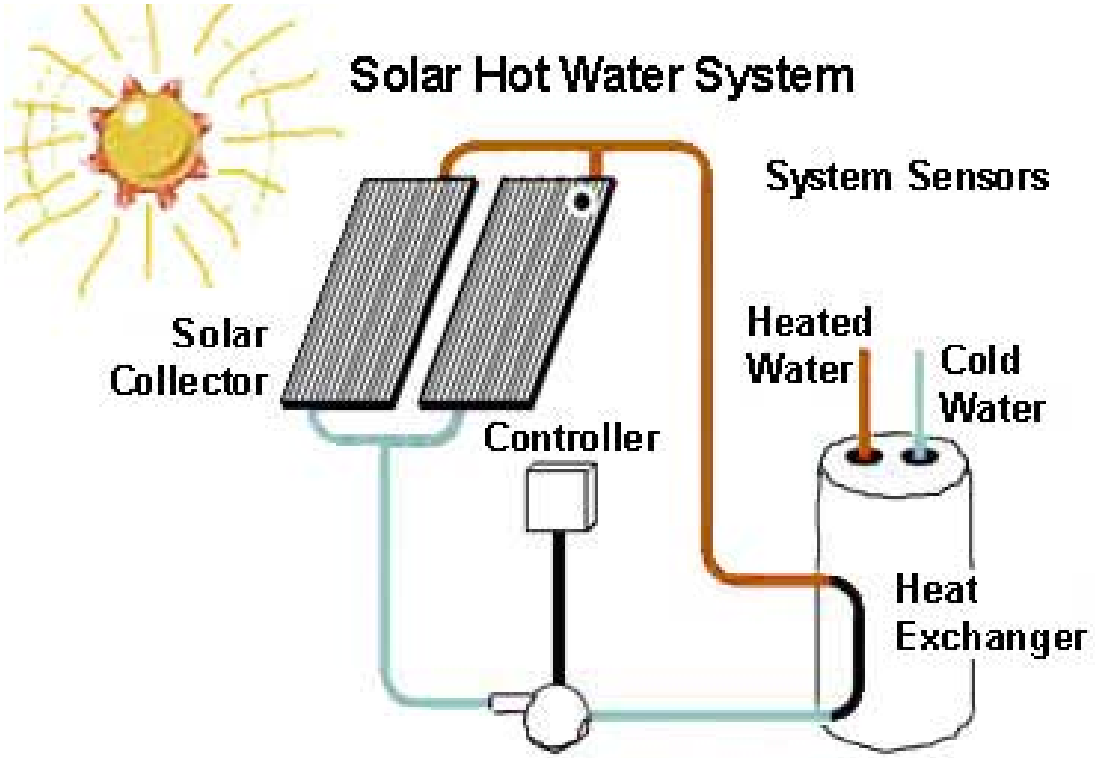
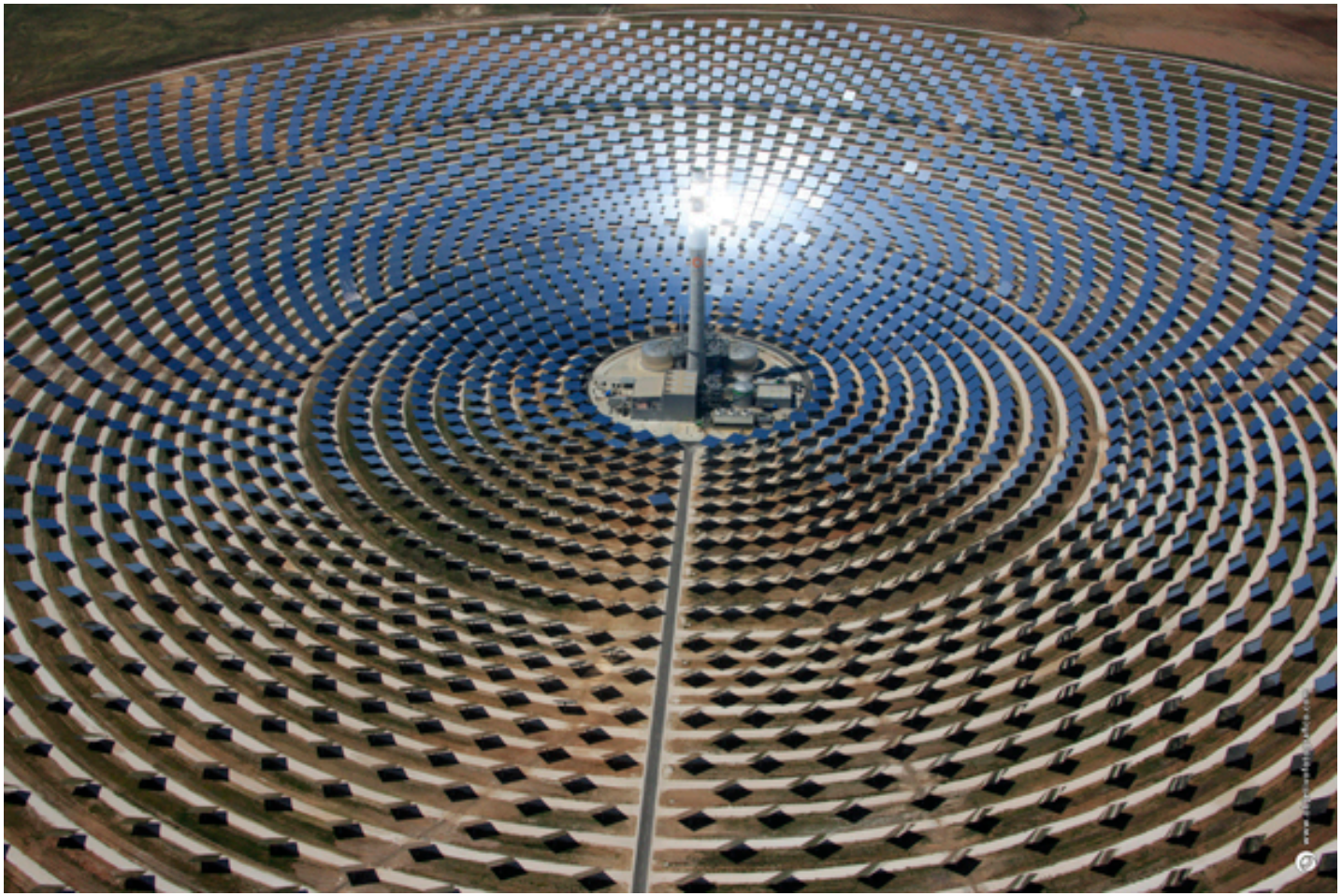
Solar Hot Water



Concentrated Solar Power



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Benefits of Solar Energy

- Generates clean, renewable energy without emission of greenhouse gases. Reduces need for using fossil fuels and avoids the environmental impacts from mining, drilling, transporting and burning fossil fuels.
- Reduces or stabilizes electric costs.
- Low maintenance.
- Payments to landowners.

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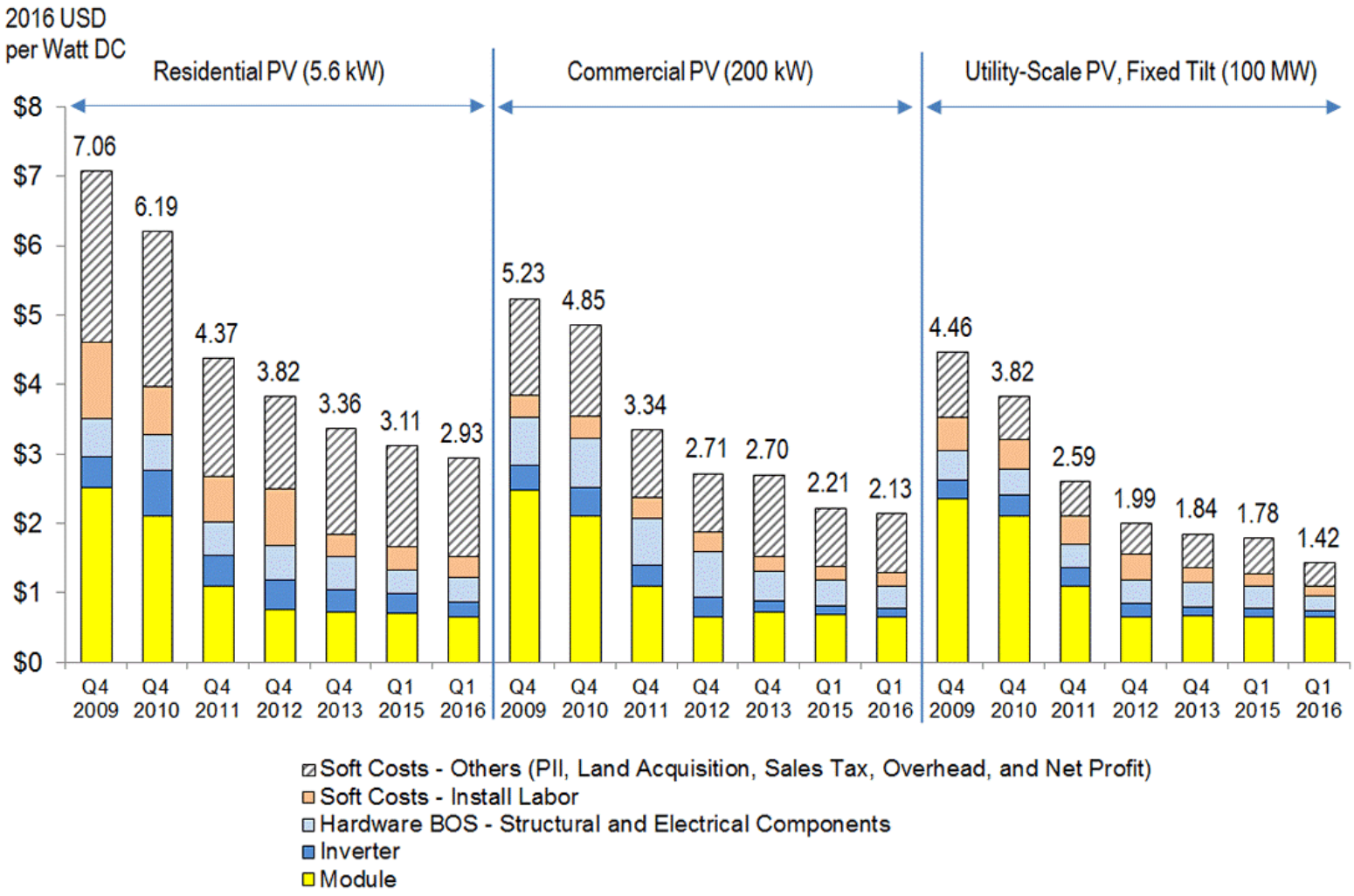
Benefits of Solar Energy

- Less susceptible to large-scale outages during storms and natural disasters
- Increased system reliability; can provide power during an outage if combined with a battery backup system.
- Infrastructure improvements.
- Jobs for solar production and installation.
- Additional tax revenue for municipalities.

Installed Solar Costs Are Decreasing



Source: NREL, http://www.nrel.gov/news/press/2016/37745

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Solar Energy in New York

- NY-Sun initiative was launched in 2012, with a goal to stimulate the marketplace and increase the number of solar PV systems across the State.
- Goal is to add more than 3 GW of installed solar capacity in the State by 2023.
- NY-Sun includes incentive programs that support solar projects for commercial and industrial companies, homes, multifamily buildings, small commercial, not-for-profit and municipal buildings.

Lower Cost and Incentives Stimulating Solar Development

- Combination of changes in the solar industry, New York State policy/legislation, and economic incentives has resulted in a surge of solar development at all scales.
- Failure to address can lead to problems:
  - Uncertainty of the regulated community
  - Inconsistent/arbitrary decision-making resulting in litigation
  - Unexpected results from application of an antiquated zoning ordinance
  - Insufficient regulatory mechanisms to address potential impacts

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The Local Government Role

- Local governments play the primary role in regulating land use and development.
  - Adoption of comprehensive plans
  - Adoption and administration of local zoning ordinances
    - Legislative Body
    - Zoning Enforcement Officer
    - Zoning Boards of Appeals
    - Planning Boards
    - Historic Preservation and Architectural Review Boards
  - Administration of the New York Uniform Fire Prevention and Building Code
  - Involved/Lead Agency under the New York State Environmental Quality Review Act (“SEQRA”)

The Local Government Role

- Zoning ordinance
  - Specific authority to adopt zoning regulations to promote solar energy use. "Such regulations shall be designed to . . . make provision for, so far as conditions may permit, the accommodation of solar energy systems and equipment and access to sunlight necessary therefor . . . ." Town Law § 263.
- "Aesthetic" considerations are recognized in New York as legitimate governmental considerations in the exercise of a municipality's police power. *People v. Stover*, 12 N.Y.2d 462 (1963).
- Historic Preservation Authority; General Municipal Law §§ 96-a and 119-dd.

The Comprehensive Plan

- Zoning regulations “shall be made in accordance with a comprehensive plan . . . .” Town Law § 263, 272-a(11).
- The Town Comprehensive Plan is a combination of the materials that identify the goals, objectives, principles, guidelines, policies, standards, devices and instruments for the growth and development of the Town.
- Does your Town have an energy plan, is renewable energy discussed?
- Should your Town amend the comprehensive plan to address solar energy?
  - *Kravetz v. Plenge*, 84 A.D.2d 422, 430, 446 (4th Dep’t 1982).
  - *Asian Americans for Equality v. Koch*, 72 N.Y.2d 121 (1988).

Factors to Consider in Developing a Solar Zoning Law

- Solar energy systems vary.

Size of Solar Energy Systems

- Residential: +/- 5 kW
- Commercial: 50 kW - 500 kW
- Industrial/Utility: 1 MW - 2 MW – 5 MW
  - Utility scale can go from 2 MW to 100 MW or more
  - New PSC Order allows for projects within the NY-Sun program to be up to 5 MW
- Impacts vary by size/type of the system, and regulation should be tailored to address those impacts.
  - More extensive review generally is required for larger systems.

Defining Solar Energy Systems

- Zoning code definitions section.
- It is critical to define those systems the community desires to permit.
  - Clearly determine what is permitted and not permitted and where
  - Apply the appropriate regulations to the system

How Are Solar Energy Systems Defined?

- System type
  - Roof-mounted
  - Ground-mounted
  - Building-integrated
- Is the energy used on-site or off-site
  - Used on-site, with some net-metering
  - Used off-site
- By size (bulk and area)
  - Footprint of the system or disturbance area
  - Acres, square feet, percentage of lot coverage, etc.
- System capacity
  - Measured in kW or MW
  - Caution: As efficiency increases, this may not be an appropriate mechanism, as higher capacity systems may take up less space.

Examples – Definitions

- New York State Model Solar Energy Law, Section 3.

BUILDING INTEGRATED PHOTOVOLTAIC SYSTEM: A combination of photovoltaic building components integrated into any building envelope system such as vertical facades including glass and other facade material, semitransparent skylight systems, roofing materials, and shading over windows.

GROUND-MOUNTED SOLAR ENERGY SYSTEM: A Solar Energy System that is anchored to the ground and attached to a pole or other mounting system, detached from any other structure for the primary purpose of producing electricity for onsite consumption.

LARGE-SCALE SOLAR ENERGY SYSTEM: A Solar Energy System that is ground-mounted and produces energy primarily for the purpose of offsite sale or consumption.

ROOF-MOUNTED SOLAR ENERGY SYSTEM: A solar panel system located on the roof of any legally permitted building or structure for the purpose of producing electricity for onsite or offsite consumption.

Applicability

- New York State Model Solar Energy Law, Section 4.

"The requirements of this law shall apply to all Solar Energy Systems installed or modified after its effective date, excluding general maintenance and repair and Building-Integrated Photovoltaic Systems."

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Appropriate Siting

- Once the systems are defined, the community must decide the zoning districts in which each system is permitted/excluded.
  - Residential
  - Agricultural
  - Commercial
  - Industrial
- This could be done by adding the defined system to the permitted uses in each district (principal use, accessory use/structure, special use) and adjusting the bulk/area restrictions for such systems OR
- By including it as a supplemental regulation in the solar zoning law itself.

Appropriate Siting – Model Solar Energy Law

- Building-Integrated PV systems are exempt.
- Roof-mounted systems permitted as an accessory use in **all zoning districts** when attached to lawfully permitted principal and accessory structures.
- Ground-mounted solar energy systems that use electricity on-site are permitted as an accessory structure in **select zoning districts**.
- Large-scale solar energy systems are permitted through the issuance of a special use permit within **select zoning districts**.

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Development Standards

- Require applicants to meet standards for solar energy systems prior to approval.
- Vary according to system type and size.
  - Height requirements
  - Solar panel tilt or angle requirements
  - Equipment placement
  - Color requirements
  - Visibility restrictions
  - Setbacks
  - Placement in rear or side yards
  - Screening
  - Blending with surroundings
  - Noise
  - Glare

Levels of Review

- Typically the level of review required for uses increases as impacts from the use increase.
- Site Plan Review. Town Law § 274-a(1): “[A] rendering, drawing, or sketch prepared to specifications and containing necessary elements, as set forth in the applicable zoning ordinance . . . which shows the arrangement, layout, and design of the proposed use . . . .”
- Special Use Permit. Town Law § 274-b(1): “[A]uthorization of a particular land use which is permitted . . . subject to requirements imposed by such zoning ordinance . . . to assure that the proposed use is in harmony with such zoning ordinance . . . and will not adversely affect the neighborhood if such requirements are met.”
- Variances
- Building Permits

Review for Building-Integrated Solar

- Lower impact. Part of building components. Similar to installing a roof or side of a building.
- No independent footprint. Less visual impacts.
- Part of the principal use.
- Building permit only; compliance with Uniform Code.

Review for Small- or Medium-Scale Solar

- Some may not require additional review. Residential/Commercial rooftop solar. Building permit only.
- New York State Unified Solar Permit – may exempt from zoning review if the system qualifies.
  - 12 kW or less and roof-mounted.
  - Requires submittal of site plan and an electrical diagram.
  - Must be adopted by local legislation.
  - May be eligible for grant funding to implement the new procedures.
- Others that have a footprint may require further review: site plan review/abbreviated site plan review. Could also provide for administrative review by ZEO; permitted if it meets the bulk and area requirements.

Large-scale Solar Energy Systems

- More comprehensive review may be required
  - Site plan
  - Special use permit
- Decommissioning requirement
  - Caution: Communities may be on shaky ground requiring a decommissioning plan or security.

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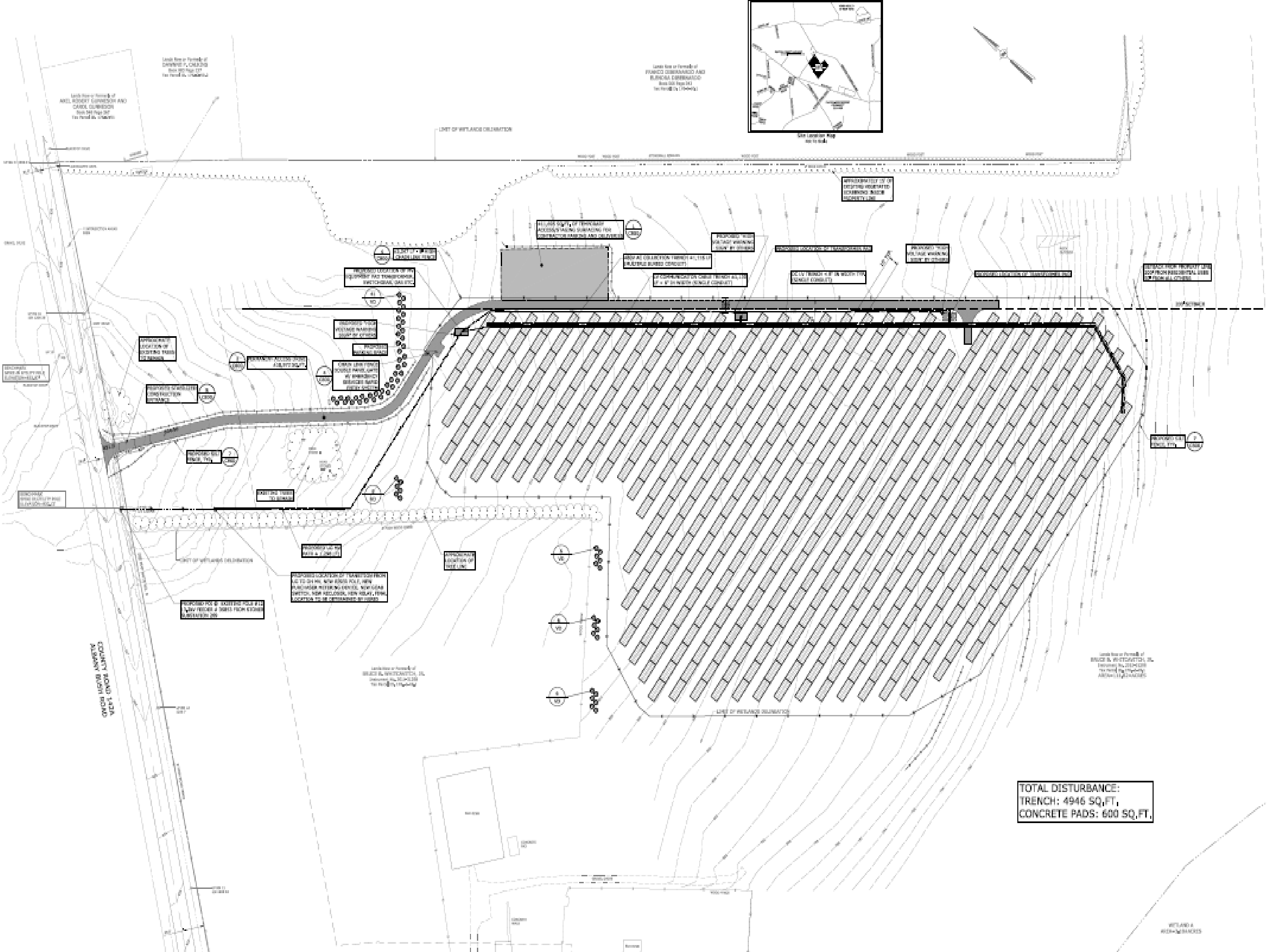


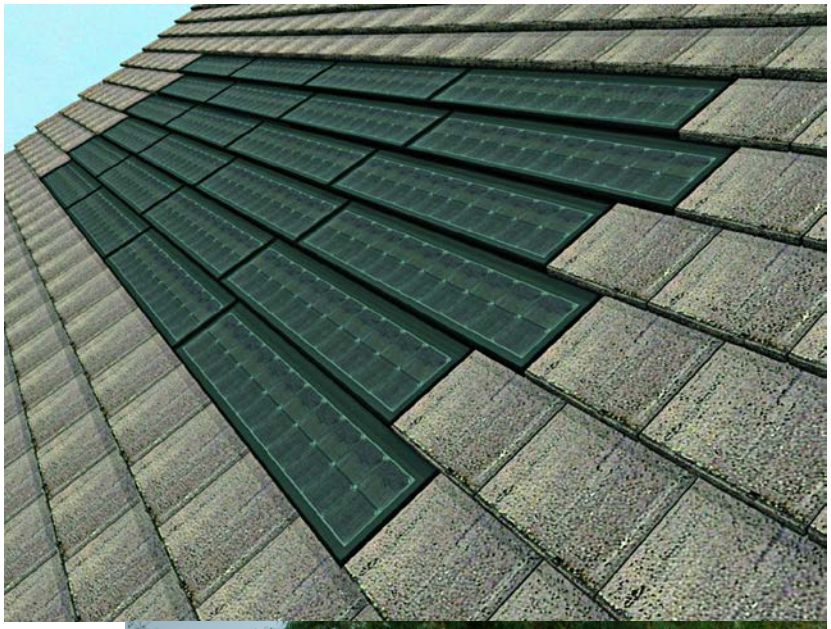
LIMIT OF WETLANDS DELINEATION
EXISTING TREES TO REMAIN
TOTAL DISTURBANCE:
TRENCH: 4946 SQ,FT,
CONCRETE PADS: 600 SQ,FT,

SEQRA Considerations

- Discretionary determinations by an agency require SEQRA review.
- Type II applicability
- Limitation on discretionary determinations may obviate the SEQRA process for certain uses.
  - Type II action: "official acts of a ministerial nature involving no exercise of discretion" 6 N.Y.C.R.R. § 617.5(c)(19).
- Municipalities may add to the Type II list, so long as it will not have a significant adverse impact on the environment and is not a Type I action. 6 N.Y.C.R.R. § 617.5(b).
- Proposed SEQRA amendments will add to the Type II list:
  - Installation of 5 MW or less of solar energy on a landfill or brownfield site, waste-water treatment facilities, site zoned for industrial use, or installation of 5 MW or less of solar canopies at or above residential and commercial parking facilities.
  - Installation of 5 MW or less of solar energy on an existing structure that is not on the National or State Register of Historic Places or located within a historic district.

Solar in Historic Districts

- In communities with historic districts, solar installations would be reviewed by the local board just like any other proposed changes or alterations, utilizing the local criteria or design guidelines.
- The goal would be to ensure that solar is installed, able to function, and is integrated into buildings without harm to character.
- Local commission may adopt guidelines for solar installation to assist property owners.
  - Placement on rear
  - Use of building-integrated solar
  - Flat-roof placement
- Newer technology to integrate solar into building materials.
  - Solar shingles/tiles
- Town Board may exempt certain solar energy systems from review.



Limitations on Municipal Regulation of Solar Energy – Public Utility Uses

- New York case law has circumscribed municipal power to regulate public utility/essential services.
- Where not permitted, and a use variance application is required, the ability of a community to effectively "zone out" utility-scale solar energy is in question.
- *Consolidated Edison Co. of New York, Inc. v. Hoffman*, 43 N.Y.2d 598 (1978) – a lesser showing is required for a public utility use variance. This dealt with an expansion of an existing facility.
- *Cellular Telephone Co. v. Rosenberg*, 82 N.Y.2d 364, 372 (1993) applied the *Con Ed.* analysis to siting of new facilities, and applied the lesser showing to cellular telephone companies.
- No court has specifically applied this to solar facilities, but case law has approved of its application to wind facilities. *West Beekmantown Neighborhood Assoc. v. ZBA of Beekmantown*, 53 A.D.3d 954 (3d Dep't 2008); *Wind Power Ethics Group (WPEG) v. Zoning Bd. of Appeals of Town of Cape Vincent*, 60 A.D.3d 1282 (4th Dep't 2009).
- Generation of electricity has long been considered an essential service; it is regulated by the PSC; need may be shown by State policy of encouraging renewable energy and the need to achieve State renewable energy goals.

Limitations on Municipal Regulation of Solar Energy – Some Utility-Scale Solar

- Article 10 of the Public Service Law
  - Requires a “major electric generating facility” (25 MW or more) to obtain a certificate of environmental compatibility and public need authorizing construction.
  - Vests the NY State Board on Electric Generation Siting and the Environment (Siting Board) with the authority to issue the certificate.
  - Procedural components of local laws are preempted.
  - However, substantive requirements are not, and must be adhered to, unless the Siting Board determines the requirements are “unreasonably burdensome.”
  - Municipal participation in the process is provided for by the regulations.

Limitations on Municipal Regulation of Solar Energy – Agricultural Use

- County-adopted, State-certified Agricultural Districts – N.Y. Agriculture and Markets Law ("AML") Article 25-AA
- AML § 305-a(1)(a): "Local governments, when exercising their powers to enact and administer comprehensive plans and local laws, ordinances, rules or regulations, shall exercise these powers in such manner as may realize the policy and goals set forth in this article, and ***shall not unreasonably restrict or regulate farm operations within agricultural districts*** in contravention of the purposes of this article unless it can be shown that the public health or safety is threatened." (emphasis added)
- A "farm operation" is defined as "the land and on-farm buildings, equipment . . . and practices which contribute to the production, preparation and marketing of crops, livestock and livestock products as a commercial enterprise . . . ." AML § 301(11).

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Limitations on Municipal Regulation of Solar Energy – Agricultural Use

- The opinion of the Commissioner of the Department of Agriculture and Markets is accorded deference. *Town of Lysander v. Hafner*, 96 N.Y.2d 558 (2001).
- A local law, or the administration of the same, that "unreasonably restricts" a farm operation is unenforceable. *Inter-Lakes Health, Inc. v. Town of Ticonderoga Town Bd.*, 13 A.D.3d 846 (3d Dep't 2004).
- The Department has issued guidelines for review of local laws for solar energy facilities used in connection with a farm operation.

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Limitations on Municipal Regulation of Solar Energy – Agricultural Use

- "The Department . . . considers solar devices that do not exceed 110% of the farm's anticipated electrical needs to be on-farm equipment [or building]."
- Special use permits not required.
- Streamlined site plan review permitted.
  - Sketch plan
  - Copies of plans or drawings prepared by the manufacturer.
  - Narrative of the intended use.
  - Building Permit/Uniform Code Compliance
- Type II action under SEQRA.

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Potential Impacts – Use of Agricultural Land

- Loss of prime farmland to large-scale solar.
- Conversion of farmland.
  - NY crop land and pasture land have been declining in many areas.

- How are communities addressing this impact?

Potential Impacts – Tree Loss

- Tree clearing
  - Preference for areas where minimal tree removal required
  - Limit the amount of clearing that can be done
  - Limit the size of tree that can be cleared
- Larger-scale projects may need waivers.
- Tree replacement
- Site plan/special use conditions
  - Use of existing vegetation as screening/buffering

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Potential Impacts – Glare and Glint/Visual

- What is the difference between glare and glint?

GLARE: A continuous source of excessive brightness, relative to diffused lighting. This is not a direct reflection of the sun, but rather a reflection of the bright sky around the sun. Glare is significantly less intense than glint.

GLINT: A momentary flash of light that may be produced as a direct reflection of the sun on a solar collection system.

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Potential Impacts – Glare and Glint/Visual

- Require a glare/glint visual analysis.
- SEQRA analysis.
- Examine the technology
  - Matte finish
  - Non-reflective (anti-glare coatings)
  - Designed to capture solar energy, not reflect it
- Impact on receptors
  - Screening; trees, berm, etc.
- Airports/private landing strips
- Photo simulations or elevations
  - All uses have visual impacts; what standard should solar have to meet?

Potential Impacts - Noise

- Inverters/transformers make noise
- Require a noise rating with the application
- Noise aggregation
- Distance to sensitive receptors
- SEQRA analysis
- Mitigation
  - Location away from receptors
  - Centrally locate inverters/transformers

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Potential Impacts - Subdivisions

- Based on incentives and evolving regulations by the PSC, developers may seek to keep a “project” under 5 MW to qualify.
- One larger “project” may be deemed separate projects by, among other things, locating 5 MW on separate parcels, owned by separate LLCs with separate points of interconnection.
- Subdivision requests may be reduced due to high project threshold.
- Flag lots
- Issues
  - Is your community’s subdivision code up to date?
  - Creation of flag lots
  - Creation of nonconforming lots
  - Solar exemptions, under certain circumstances

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QUESTIONS?

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