The State of Solar Energy Conscious Land Use
An Analysis of How Zoning Regulations Influence the Future of Solar Energy in Connecticut
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Encouraging Solar is State Policy

Public Act 78-314 Encouraged the use of solar energy through zoning

• The legislation did not mandate the use of solar energy

Changes in Energy Economics & Climate Change Heighten Solar Benefits

• The economics of Renewable energy have dramatically improved since 1978
• Awareness of the Role of Petroleum in Climate Change has also increased
• Connecticut requires Class 1 renewables to meet 40% of the state’s electricity by 2030 – PA 18-50

Have Connecticut’s Municipalities Promoted Solar Energy Use?

What is the Current State of Solar Conscious Land Use Regulations?
Installed Costs- Nearly 2/3rds Less than 2010

Where is PV Solar Installed?

16,035 Solar PV installations in CT with 491 MW name plate capacity.

Source: Connecticut Public Utility Regulatory Authority, January 2019

Connecticut Towns

Solar Installations in Connecticut as of January 2019

Source: Connecticut Public Utility Regulatory Authority, January 2019
The State of Solar Conscious Zoning

A Comprehensive Review of the State’s zoning has been Completed

• It Reveals Significant Shortfalls in local efforts to Promote Solar

The Success of Solar Energy Systems is inextricably tied to Zoning.

• Towns Lack guidance on appropriate regulatory approaches
• In many cases, zoning regulations create obstacles to its use

Specific Findings from this study are presented

• Recommendations for encouraging solar are provided
• Best practices are identified
What is a Solar Energy System?

Only 26 Municipalities have defined a Solar Energy System

• Lacking Definitions, most Municipalities take a Case by Case Approach

There are many types of solar energy systems

• Most definitions focus on Small Scale Solar (24):
  • Ground Mounted Solar Energy Systems
  • Roof Mounted Solar Energy Systems
  • Pole-Mounted Solar Energy Systems
• Few Regulate Large Scale Solar Energy Systems (13)
  • Large Scale Systems = Solar Farms & Industrial uses
What Rules Govern Solar Energy Systems?

• Most Common Controls are as follows:
  • Compliance with Setback Standards: 82 of 93
  • Limit Locations of Ground Mounted Systems: 43 of 93
  • Define Solar Energy Systems as Structures: 39 of 93
  • Height Limits for Ground Mounted Systems: 29 of 93
  • Limit Locations of Roof Mounted Systems: 28 of 93
  • Screening for Ground Mounted Systems: 17 of 93
  • Systems to meet Building Coverage Standards: 12 of 93
  • Removal of System after ceasing operations: 10 of 93
  • Solar Access Reviews: 8 of 93
Zoning Regulations Governing Solar Installations in Connecticut: 2019

- No regulations, 74
- Define Ground Location, 43
- Meet Setbacks, 82
- Definitions, 39
- Ground Mount Height Limits, 29
- Define Roof Location, 28
- No regulations, 74
- Other, 47
- Bldg Coverage, 12
- System Removal, 10
- Solar Access Review, 8
- Screening, 17
Incentives for Solar Energy Systems?

• Most Common Incentives:

  • Approve Roof Mounted Solar by Zoning Permit: 79 of 93
  • Exempt Solar from Building Height Limits: 35 of 93
  • Provide Solar Energy Districts for Large Scale Solar: 13 of 93
  • Offer Flexible Setback Requirements: 9 of 93
  • Provide Solar Access Protections: 6 of 93
  • Approve Roof Mounted Solar by Building Permit: 4 of 93
Large Scale Solar Systems – Why so Few?

- Thirteen Municipalities Regulate Large Scale Solar Energy Systems
  - These are variously defined as generating 100 KW, 250 KW or an unspecified amount feeding electricity to the utility grid

- CT Siting Council has Exclusive Authority over Grid Connected Systems
  - Municipalities play an advisory role
  - Council must consider views of municipalities
  - Zoning for large scale systems can be an important negotiating tool

- Connecticut Municipalities Need to be Aware of Emerging Trends
  - State focuses on large scale solar energy use
  - Forewarned is to be forearmed over loss of forest and farmland.
What Additional Incentives are Needed?

- Model Zoning regulations needed:
  - Standard Definitions for Solar Energy Systems
  - Exempt Solar from certain restrictions:
    - Flexible Setbacks for ground mounted solar
    - Standard procedures for screening ground mounted solar
  - Minimize Special Permit & Site Plan approvals
    - Focus on zoning or building permit approvals
      - Minimize Commission workload
        - Depends on precise guidance for Zoning Enforcement Officer
  - Use Solar Access Reviews
    - Solar energy development requires solar access protection
Conclusions – Where Goes Our Solar Future?

• Land Use Decisions Enable Solar Use
  • Building & Street Orientations – enables Solar
  • Right Sized Housing Reduces Energy Loads
  • Solar Access Protections are Critical
    • Influenced by zoning height & setback restrictions
    • Supported through zoning review procedures
    • Enabled by solar easements in new developments
    • Created by incentives - Planned Solar conscious development

• Planning & Zoning Commissions are Gatekeepers for Solar Age
Key Resources

  - Massachusetts Executive Office of Energy and Environmental Affairs
  - American Planning Association
- **Integrating Solar into Local Development Regulations (2012)**
  - American Planning Association
- **Solar Community Engagement Strategies for Planners (2012)**
  - American Planning Association
  - Connecticut’s Clean Energy Finance and Investment Authority (CEFIA)
- **Connecticut Solar Regulations Package (2019)**
  - Western Connecticut Council of Governments
Questions?

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