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METROPOLITAN AREA PLANNING COUNCIL

SMART GROWTH AND REGIONAL COLLABORATION

Guide to Streamlining the Solar PV Permitting Process and Developing Supportive Zoning Bylaws

Introduction

Increasing Solar Use Across Massachusetts

Since 2010, the cost of solar panels has decreased over 50%[1] while energy costs have continued to rise.[2] As a result, solar energy has become a desirable option for many homeowners, municipalities, commercial entities, and industrial facilities searching for price stability and eco-friendly energy sources. Increased use of solar energy fosters reduced carbon emissions, better air quality, greater energy resilience, and lower energy costs for consumers. However, permitting for the installation of rooftop and ground-mounted photovoltaic (PV) systems can be expensive, complex, and time-consuming; and inconsistencies among permitting processes and local regulations throughout the Commonwealth can be prohibitively challenging for installers who work in multiple communities.

The goal of this guide is to equip municipal permitting and zoning offices with best practices to facilitate and encourage the development of solar photovoltaic systems in the Commonwealth. Municipalities can implement the practices that make the most sense for their structure and capacity. Ultimately, regional consistency in PV permitting and zoning regulations will reduce the time and costs associated with solar and attract more highly-skilled developers to all parts of Massachusetts. In turn, municipal, residential, and business consumers will have more choices when considering solar energy systems and will have access to lower prices for a clean, stable form of energy for their homes and facilities.

[1] SEIA and GTM Quarterly Report Q1 2013
[2] http://www.eia.gov/forecasts/steo/report/electricity.cfm

Contributing to the Growth of Solar PV Adoption: Fraunhofer CSE's Plug and Play PV System

Fraunhofer's revolutionary Plug and Play PV System strives to simplify installation of solar PV and create more user-friendly systems, so that consumers are encouraged and empowered to install solar on their homes. Still in the demonstration phase, this effort to accelerate the deployment of residential PV will only be enhanced by cities and towns' adoption of helpful permitting and zoning measures that support solar PV expansion.

Source: http://cse.fraunhofer.org/pnp/project

Why Change Existing Solar Permitting and Zoning Policies?

Opportunities

Demand for PV systems, both ground-mounted and rooftop, is expected to rise as the price of panels continues to decrease.[3] This trend offers municipalities a tremendous opportunity to harness the social, economic, and ecological benefits of solar technology. Reducing the time, money, and effort needed to undertake and execute permitting for a solar project is a low-cost way to promote the expansion of solar energy in a community.

Cities and towns across Massachusetts have begun to recognize the importance of adopting zoning bylaws for solar so that local regulations are clearly presented and disputes are minimized. By having solar zoning bylaws in place, municipalities can create an encouraging environment and reduce siting challenges that often result from the absence of zoning specifications for solar energy systems.[4] As-of-right siting of solar installations, as modeled by the Department of Energy Resources' (DOER) Green Communities program,[5] is one important provision in solar bylaws that prohibits the requirement of special permits for renewable projects. This feature allows any installation that meets the solar overlay bylaw's requirements to receive approval, reducing uncertainty and risk. Criterion 1of the Green Communities program requires the use of As-of-Right Siting to remove barriers to

[3] SEIA and GTM Quarterly Report Q1 2013
[4] http://www.bostonglobe.com/metro/regionals/south/2013/05/04/solar-farm-projects-hit-roadblocks-some-communities-solar-projects-meet-resistance-locally/jUFUAxSZEpK4swEcCa9hPM/story.html
[5] http://www.mass.gov/eea/docs/doer/green-communities/grant-program/solar-model-bylaw.pdf and http://www.mass.gov/eea/docs/doer/green-communities/grant-program/criterion-2-guidance-2013.pdf

installation, and Criterion 2 builds on that by directing municipalities to expedite permitting processes for renewable energy systems that have been developed under as-of-right siting.

The Soft Cost Factor: Time and Money

The National Renewable Energy Laboratory (NREL) reports that soft costs are now the largest cost of a solar installation.[6] NREL defines soft costs as those that are not directly affiliated with physical construction; examples include drafting, permitting, and inspection costs. Nationally, soft costs account for 64% of residential, 52% of small commercial, and 57% of large commercial solar installation costs.[7] Permitting and inspection fees range nationally from $0 to over $2,500.[8]

In addition to application costs, permit approval time can be a significant barrier. In the United States, the 126-day average wait time to get a solar permit approved and panels installed is much longer than the average of 35 days in Germany.[9] A long wait-time from application to installation can be dissuasive to even the most ardent clean energy supporter.

Streamlining and shortening the permitting process will not only reduce the time that homeowners and developers wait for a permit, but it will also reduce the time that municipal employees spend on administering the permitting process. U.S. municipalities spend an average of 14.5 hours reading and approving each solar installation permit while German municipalities spend an average of 20 minutes.[10]

Small Changes, Big Impact

The Department of Energy Resources' Green Communities program requires expedited permitting[11] to enable interested parties to install renewable energy generation systems, including PV systems, from start to finish in less than 1 year. However, governments across the state and country have utilized best practices to reduce that time from one year to less than 60 days.[12] For example, the Town of Harvard was able to reduce the steps needed for

[6] http://www.nrel.gov/news/press/2013/5306.html
[7] http://www.midwestenergynews.com/2013/12/04/soft-costs-grow-as-portion-of-the-price-for-solar-power/
[8] http://energy.gov/sites/prod/files/2014/01/f6/sunshot_webinar_20130226.pdf
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[10] http://emp.lbl.gov/sites/all/files/german-us-pv-price-ppt.pdf
[11] http://www.mass.gov/eea/docs/doer/green-communities/grant-program/criterion-2-guidance-2013.pdf
[12] http://projectpermit.org/wp-content/uploads/2013/04/Expanded-Best-Practices-7.23.13_VSI.pdf

permitting by consolidating two required documents, the electrical permit application and the building permit application, into one form.[13]

Municipalities have the opportunity to make a big impact on the solar market by simplifying the solar permitting process. With cheaper and easier permitting procedures, a greater number of qualified solar installers will be able to participate in meeting solar demand. This will provide homeowners, municipalities, and commercial and industrial facilities with greater choice and decrease the time before installation can begin.

Best Practices to Encourage Solar Development in Massachusetts

1. Conduct a Permitting and Zoning Bylaws Audit

Conduct an audit of your municipality's zoning regulations and permitting procedures to identify inconsistencies and inefficiencies in the permitting process and to eliminate excessive reviews and inspections of PV systems. Processes that do little to ensure public health and wellbeing should be eliminated. A streamlined process will reduce unnecessary costs and expedite permit issuance.

Questions to Ask in an Audit of Zoning Bylaws

Asking questions during the audit such as "can a person unfamiliar with the permitting process easily understand the types of documents required to apply?" or "is solar permitting information listed on our website easy to find?" can help to expose parts of the process that are unclear or unnecessarily complex.

[13] http://www.mass.gov/eea/docs/doer/renewables/solar/recommended-model-permitting.pdf

2. Develop/Amend Solar Zoning Bylaws to Expedite PV Installations

As Solar PV installations have seen tremendous growth over the last few years, it is important to ensure that these systems can continue expansion and are supported in local regulations throughout Massachusetts. Municipalities can encourage the adoption of solar energy systems by setting in place bylaws that help eliminate barriers and reduce uncertainties in zoning requirements. Zoning Bylaws and Ordinances are the most appropriate mechanism for regulating solar PV, because solar energy systems are recognized as a type of land use. This statutory language can be found in Chapter 40A.

Updating Zoning Bylaws: Easton, MA

The Town of Easton's Planning and Zoning Board examined its zoning bylaws and determined it would need to update its bylaws in order to allow ground-mounted solar facilities at certain sites. The Board held several Zoning Subcommittee meetings and a public hearing beginning in the Spring of 2011, and by May of 2011, the updates to the zoning bylaws were approved at Town Meeting.

Source: http://www.easton.ma.us/departments/planning_and_community_development/click_here.php

Solar Zoning Bylaws: Cambridge, Saugus, and Framingham

These municipalities have developed zoning bylaws that encourage solar PV installations at the local level by providing guidelines to ease the planning and development of new projects.

City of Cambridge (population > 105,000):
http://www.cambridgema.gov/~/media/Files/CDD/ZoningDevel/Ordinance/zo_article22_1359.ashx

Town of Saugus (population > 26,000):
http://www.saugus-ma.gov/Pages/FV1-0002421A/FV1-0004CF7D/Econ%20Deve%20Saugus%20solar%20overlay%20district%202-26-14%20%283%29.pdf

Town of Framingham (population > 68,000):
http://www.framinghamma.gov/DocumentCenter/View/15505 (p. 61)

DOER published a model zoning document in December 2014. This document updates the Department's effort to supply municipalities with a template from which they can

adopt new bylaws to make solar PV regulations more clear and aligned with other municipalities across the state. The "Model As-of-Right Zoning Bylaw: Allowing Use of Large-Scale Ground-Mounted Solar Photovoltaic Installations"[14] and "Policy Guidance for Regulating Solar Energy Systems"[15] guides apply to all solar energy systems at various scales.

The model zoning language should be adjusted to meet the needs of each municipality, and the draft language should be reviewed by municipal counsel before formal adoption.

3. Provide Permitting Checklists

Provide a clear checklist to guide site owners, solar installers, and other participants through the solar PV permitting process. This will reduce errors and inefficiencies while minimizing permit submission and approval time. Additionally, a checklist can reduce the amount of time that permitting staff must spend on fielding questions from applicants, which may free up time for them to handle other tasks.

Permitting Checklists: Harvard, MA

In addition to making relevant permitting information available online in the form of a PDF, the town of Harvard, MA, includes an application checklist and estimated timeline as part of its solar building permit application.

Source: http://www.harvard.ma.us/Pages/HarvardMA_Building/Solar%20Permit%20Application.pdf

4. Utilize Narrow Inspection Time Windows

To promote the health and safety of the community, municipalities typically require the inspection of solar installations. Post-installation inspection windows can be as long as 8 hours, leading to frustration from site owners and developers who must wait on site, often missing other employment opportunities and increasing labor costs. Require

[14] http://www.mass.gov/eea/docs/doer/green-communities/grant-program/model-solar-zoning.pdf
[15] http://www.mass.gov/eea/docs/doer/green-communities/grant-program/model-solar-zoning-guidance.pdf

inspections to occur within a narrow timeframe, for example within a 2 to 3 hour block, in order to reduce both consumer and contractor costs.

Limited Inspection Time Windows: San Jose, CA

The City of San Jose, California, schedules post-installation inspections within a 2-hour time block to increase productivity and decrease wait time for contractors.

Source: http://sanjoseca.gov/DocumentCenter/View/21882

5. Develop a Permitting Website

Build a website dedicated to solar permitting. A dedicated website can create an easily accessible space for developers and homeowners to find up-to-date resources, track the progress of permits, and increase their understanding of the process. Hosting permitting materials online allows applicants to begin the permitting process at home or in the office, saving time and costly trips to permitting offices. Moreover, online materials further diminish the time that municipal staff must spend fielding questions in-person.

Permitting Websites: Cambridge, MA

On its Community Development Department website, the City of Cambridge posted a comprehensive guide to solar permitting. This PDF walks applicants through each step of the online permitting process with screen-shot visualizations and narrative text. The Cambridge solar permitting brochure contains an application checklist, a guide on how to identify whether your installation will require a special permit, and examples of what required reports and documents should include.

Source: http://www.cambridgema.gov/cdd/~/media/382D911FDEB34A1DAE5D15D8B893E66A.ashx

6. Offer Online Permitting

Allow the submission, payment, review, and printing of applications to reside online in order to eliminate the burden of travel to permit offices and ensure consistency in application format. A standardized online template lessens opportunities for user error and expedites turnaround time.

Online Permitting: Boston, MA

In addition to posting a comprehensive handbook for solar permitting on its website, Boston offers short-form building permits for residential buildings with three or fewer units; this process can be completed entirely online and has a same-day turnaround. Commercial and industrial facilities and residential buildings with more than three units can have their permits processed online usually in no more than seven days.

Source: https://www.cityofboston.gov/images_documents/SolarPermittingBrochureHZEv4_tcm3-37565.pdf

7. Explore Options for Permitting Fees

Permitting fees are a significant part of the cost associated with installing a solar PV system. In order to create a solar market that is more attractive to site owners and developers, municipalities should consider ways in which they can reduce permitting costs. For example, they could:

- **Eliminate permitting fees** for solar development. This option increases the accessibility of solar by removing a cost barrier. Note that it also reduces revenue gained in the permitting process.
- **Cap permitting costs** to allow residents greater flexibility in choosing the size of their solar system. Residents may choose to install a larger system without increased costs due to permitting.
- **Tie the permitting fee directly to the processing time.** List a clear pricing schedule for varying system sizes and consider creating a separate fee schedule for expedited permitting if resources allow.
- **Base the permit fee on PV installer labor costs,** creating an easy-to-use and transparent system by which fees are calculated. For example,

permitting offices may choose to charge a permitting fee equal to a percentage of the labor costs associated with installing the PV system.

Permitting Fees: Canton, MA

The town of Canton, MA, sets their photovoltaic permitting fee at $50 plus 2% of the value of the installation labor. The electrical inspector reserves the right to establish a fair market value of work or request to view the contract in order to calculate the appropriate permitting fee. Choosing to utilize a hybrid fee structure gives Canton the flexibility to retain a minimum level of revenue from permitting while creating a fee schedule that logically scales with the size of the PV system.

Source: http://www.town.canton.ma.us/189/Fee-Schedules

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