



*Massachusetts Land
Conference
March 22, 2014*

COMMONWEALTH OF MASSACHUSETTS

*Deval L. Patrick, Governor
Richard K. Sullivan, Jr., Secretary
Mark Sylvia, Commissioner*

***Solar Fields and Greenfields –
State Resources for Siting
Meg Lusardi, Director
Green Communities Division***

State Policy and Legislation Creates Momentum

- **Green Communities Act (GCA)**

- RPS Class I Carve Out - Solar
- Long Term Contracts / Net Metering
- Green Communities
- All cost effective energy efficiency



- **Global Warming Solutions Act (GWSA)**

- Clean Energy and Climate Plan set GHG emission reduction limits at 25% below 1990 Baseline Levels by 2020; 80% reduction by 2050 → Renewables 4%



- **Governor Patrick's Renewable Energy Goals**

- Install 250 megawatts of solar capacity by 2017 – met in April 2013 → New goal of 1600 MW by 2020
- Install 2000 megawatts of wind capacity by 2020



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Solar is Working for the Commonwealth

- Solar is well distributed throughout the Commonwealth, with installations in 348 of 351 MA cities and towns. Over 130 municipalities are hosting solar projects on town facilities.
- Solarize Mass program has supported 9 MW of residential solar in 33 towns (another 15 towns are underway).
- Massachusetts is well ranked nationally (SEIA 2013)
 - 4th in solar capacity installed in 2013
 - 6th in cumulative installed capacity
 - 3rd in commercial installations; 5th in residential installations
 - 2nd lowest weighted average commercial installation costs
 - 4th in total solar jobs; 6th in per capita solar jobs
- Over 1800 firms in MA work primarily in the renewable energy sector, employing over 21,000 workers. Nearly 60% of renewable energy workers support the solar sector (2013 *MassCEC Jobs Report*).



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RPS Solar Carve-Out Phase II (SREC-II)

- SREC-II program will continue growth of solar PV to meet Governor's new goal of 1600 MW by 2020
- Rulemaking complete in April 2014.
- DOER has established a complementary solar loan program to support residential direct Ownership market.



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SRECII - Managed Growth

Market Sectors and SREC Factors

Market Sector		SREC Factor
A	Generation Units with a capacity ≤ 25 kW, Solar Canopies, Emergency Power Generation Units, Community Shared Solar Generation Units, low or moderate income housing units.	1.0
B	Building Mounted Generation Units, ground mounted Generation Units with a capacity > 25 kW with 67% or more of the electric output on an annual basis used by an on-site load.	0.9
C	Generation Units on Landfills or Brownfields, or Generation Units with a capacity of ≤ 650 kW with less than 67% of the electrical output on an annual basis used by an on-site load.	0.8
Managed Growth	Unit that does not meet the criteria of Market Sector A, B, or C.	0.7



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Green Communities Division - Solar Programs & Resources for Municipalities

- Four Regional Coordinators located at Mass DEP offices
- Model Bylaws
 - Green Communities Criteria 1 Bylaw
 - New Model Bylaw encompassing all solar
- Handbooks
 - Questions & Answers: Ground-Mounted Solar Photovoltaic Systems
 - The Guide to Developing Solar Photovoltaics at Massachusetts Landfill
 - Documents located under “Opportunities and Publications” on our website: www.mass.gov/energy/greencommunities
- Common message in bylaws/documents: encourage development on previously disturbed lands, discourage cutting of trees



Model Zoning and Guidance for Solar Energy System Regulation

- Responds to identified need to help communities establish solar energy regulations
- Addresses small, medium and large-scale roof and ground-mounted systems
- Reflects statutory limits on municipal ability to regulate solar energy systems
 - Chapt 40A – Solar systems may not be prohibited or unreasonably regulated; “reasonable” not defined



Model Zoning and Guidance for Solar Energy System Regulation

- *Model* bylaw provides a *framework* for local zoning – zoning is controlled at the local level
- Green commentary sections highlight questions local decision makers should consider to tailor the model to local circumstances

Example:

Commentary: As drafted, this model zoning does not require medium-scale ground mounted solar energy systems to be fenced, but this is something communities will want to consider. Regardless, many project proponents will find fencing prudent.

- Review customized bylaw with legal counsel



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Model Zoning and Guidance for Solar Energy System Regulation

- Definitions:

- Solar Energy System: A device or structural design feature, a substantial purpose of which is to provide daylight for interior lighting or provide for the collection, storage and distribution of solar energy for space heating or cooling, electricity generation, or water heating.
- Solar Energy System, Large-Scale: An Active Solar Energy System that occupies more than 40,000 square feet of surface area (equivalent to a rated nameplate capacity of about 250kW DC or greater).
- Solar Energy System, Medium-Scale: An Active Solar Energy System that occupies more than 1,750 but less than 40,000 square feet of surface area (equivalent to a rated nameplate capacity of about 10 - 250 kW DC).
- Solar Energy System, Small-Scale: An Active Solar Energy System that occupies 1,750 square feet of surface area or less (equivalent to a rated nameplate capacity of about 10 kW DC or less).



Example 1 (Use Tables):

	Residential-1 (R1)	Residential-2 (R2)	Residential-3 (R3)	Commercial (C)	Industrial (I)	Public (P)
PRINCIPAL USE						
Medium-Scale Ground-Mounted Solar Energy System	SPR	SPR	SPR	Y	Y	Y
Large-Scale Ground-Mounted Solar Energy System	SP	N	SPR	SPR	SPR	SPR

Y = Allowed
SP = Special Permit

N = Prohibited
SPR = Site Plan Review

	Residential-1 (R1)	Residential-2 (R2)	Residential-3 (R3)	Commercial (C)	Industrial (I)	Public (P)
ACCESSORY USE						
Roof-Mounted Solar Energy System	Y	Y	Y	Y	Y	Y
Small-Scale Ground-Mounted Solar Energy System	Y	Y	Y	Y	Y	Y
Medium-Scale Ground-Mounted Solar Energy System	SPR	SPR	SPR	Y	Y	Y

Y = Allowed
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Model Zoning and Guidance for Solar Energy System Regulation – Siting Preferences

- Where a solar facility is sited, as well as placement on the site, is important, particularly for large-scale ground mounted facilities.
- DOER strongly discourages locations that result in significant loss of land and natural resources, including farm and forest land, and encourages rooftop siting, as well as locations in industrial and commercial districts, or on vacant, disturbed land.
- Significant tree cutting is problematic because of the important water management, cooling, & climate benefits trees provide.



Model Zoning and Guidance for Solar Energy System Regulation – Siting Preferences

Siting Preferences – Agricultural

- Rooftops
- Non-productive, non-arable agricultural land
- Dual use of land to preserve productive farmland by continuing crop production underneath high-mounted & well spaced panels
- Use of the least productive land first to minimize the loss of productive food/crop land.

Agricultural Exemption – See Gerry!



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