

**GREEN COMMUNITIES PROGRAM**  
DEPARTMENT OF ENERGY RESOURCES

Helping Massachusetts Municipalities Create A Greener Energy Future

## Green Communities Technical Assistance Webinar

**BlueWave Consultant Team**  
BlueWave Strategies  
Conservation Services Group  
Energy and Resources Group  
Meister Consultants Group

October 20, 2009

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**GREEN COMMUNITIES PROGRAM**  
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## Webinar Agenda

- Introduction to the Team
- Overview of the Green Communities Act
- Overview of the Green Communities Program
- Technical Assistance Approach and Timeline
- Q&A Discussion

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## Green Communities Act – Ch 169 of 2008

- **Advances Energy Efficiency**
  - Increases spending for Energy Efficiency, creates Energy Efficiency Council
- **Promotes Renewable Energy**
  - Revises Renewable Portfolio Standard (RPS), MTC funds more technologies, utilities own solar, new net metering rules
- **Makes the State Greener**
  - Final approval of RGGI, Improves State Energy Building Code, Greens up state operations, creates the **Green Communities Program**

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Helping Massachusetts Municipalities Create A Greener Energy Future

### Green Communities Program

DEPARTMENT OF ENERGY RESOURCES  
Helping Massachusetts municipalities create a greener energy future

4 Serving as the hub to all Massachusetts cities and towns on all matters related to energy

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### BlueWave Team

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BlueWave Strategies works with clients as a strategic advisor and, in some cases, an equity partner to advance their clean energy projects and businesses. We also advise public agencies that want to decrease their energy costs and environmental impact through better energy policies. Our team is working with renewable energy technology ventures, utilities, public agencies, public policy makers and other energy leaders on a variety of projects that address regional and global energy challenges while growing the clean energy technology sector as an economic engine. Areas of expertise include:

- Energy Planning
- Feasibility Studies
- Siting Analysis
- Project Development, Siting and Permitting
- Stakeholder Outreach
- Capital Sourcing
- Strategic Policy and Regulatory Assistance

Meister Consultants Group, Inc. (MCG) is a Boston-based consulting firm focusing on sustainable energy policy and markets in the United States and internationally. MCG specializes in policy development and analysis, market strategy and research, program planning and management, and community-based stakeholder dialogue. MCG has advised national, state, and municipal governments on energy policy development and planning, and consulted to multi-national corporations and utilities on sustainable energy market and climate change strategy. Areas of expertise include:

- Municipal Energy Planning and Strategy
- Policy and Regulatory Assessments and Design
- Community Engagement and Change Management

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### BlueWave Team

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Conservation Services Group, Inc. (CSG) is a nonprofit corporation founded in 1984 specializing in the design, development, and delivery of innovative, results-driven energy efficiency and renewable energy programs for utility companies, public housing authorities, public agencies, and private industry. In nearly a quarter century, CSG has helped Americans make smart energy use decisions. CSG's service offerings promote energy efficiency, health and safety, building durability, compliance, recycling, and environmental responsibility in residential and commercial buildings. Areas of expertise include:

- Energy Auditing
- Implementation of Energy Saving Measures
- Comprehensive Technical Assessments
- Building Performance Contracting
- Energy Star Programs

ERS is a progressive energy engineering and consulting firm based in Haverhill, Massachusetts with additional offices in New York, Maine, and Texas. ERS serves clients regionally, nationally, and internationally; its areas of specialization include assessment and implementation of energy projects; development of analytical tools and database software systems for project energy analysis and utility program management; custom design; technology assessment; industrial process assessments; premium efficiency lighting design; and energy code compliance. Areas of expertise include:

- Energy Auditing and Feasibility Studies
- Peak Load and Demand Response Assessments
- Project Quality Assurance Consulting
- Review of Energy Performance Contracts

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### Becoming a Green Community – Why Do it?

- Economic Benefits – save energy
- Environmental Benefits – reduce greenhouse gas emissions
- Recognition – Sustainability Leader in the Commonwealth
  - Recognized on DOER website, printed materials
  - Recognition sign placed in each community
- Grants - to become even greener

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### Green Communities Grant Program

- Provides up to \$10M annually in grants and loans to qualifying communities
  - Communities must meet all 5 criteria in order to receive a grant
- Qualification Criteria
  - Adopt as-of-right siting, in designated locations, for RE/AE generation, or RE/AE R&D, or RE/AE manufacturing
  - Adopt expedited (12 month) application/permitting process
  - Establish an energy use baseline inventory with a program to reduce baseline by 20% in 5 years
  - Purchase only fuel-efficient vehicles
  - Require all new residential construction > 3000 ft2, and new commercial and industrial real estate construction to minimize life-cycle energy costs

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### Green Communities Planning Assistance – What does it include?

- Limited number of hours available for technical assistance
- Development of an Action Plan with a timeline for Completion that includes the following:
  - A breakdown of each of the qualification criteria that a community must meet
  - Identify what has been accomplished to date
  - Identify specific tasks to be completed to meet the criteria
  - Identify the person(s) responsible for those tasks
  - Develop objectives and milestones for completing the identified tasks that will lead to the community meeting each outstanding qualification criteria
- BlueWave Team is not authorized to complete actual steps for meeting criteria – municipality must be responsible

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### Green Communities Planning Assistance – What does it include?

- BlueWave will assist with the following as appropriate:
  - Identification of the appropriate method/technology for meeting the as-of-right criteria, and identification of appropriate designated locations
  - Identification of and review of appropriate model documents
  - Identification of building, vehicle and streetlight information for performing energy baseline inventory
  - Education on the Stretch Code
  - Up to 2 presentations to Town Officials

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### As-of-Right Zoning

#### I. Adopt As-of-Right Siting

- Municipality must provide for as-of-right zoning for one (or more) of three types of Renewable Energy/Alternative Energy (RE/AE) facilities
  - RE/AE Generation
  - RE/AE Research & Development
  - RE/AE Manufacturing
- To qualify development must be
  - As of right (requiring only site plan approval, not a special permit) in specified locations (need not be town-wide)
  - Allowed in that zoning district
  - Feasible and practical in that zoning district

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### As-of-Right Zoning: Generation

- DOER will give “special consideration” to municipalities that adopt as-of-right zoning for RE/AE generation
- Zoning must allow for at least one of five types of generation
  - On-shore Wind: 600 kW in size or above
  - Off-shore Wind: 2.5 MW or above
  - Solar PV: ground-mounted system 250 kW or above
  - Biomass CHP: 5MW in a stand-alone building
  - Ocean, wave or tidal: no minimum threshold
- Generation technology chosen must be practically available and provide a realistic opportunity for generation
- Communities are expected to appropriately utilize their available renewable resources
  - e.g. wind resources of 6 meters/second or above

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### As-of-Right Zoning: Manufacturing or R&D

- Municipalities can rely on existing zoning and/or adopt new
- Use must be allowed as-of-right
  - Cannot require a special permit, variance or waiver
  - Can impose reasonable environmental performance standards (height, setback) as long as they are not so stringent as to make the use infeasible
- Bylaw or ordinance must clearly allow construction of facilities for RE/AE manufacturing or R&D
  - Guidance lists specific activities that must be allowed
- Zoning must provide a realistic opportunity to actually construct RE/AE manufacturing or R&D
  - e.g. land available for a facility of 50,000 s.f. or larger

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### Expedited Permitting

#### II. Adopt an Expedited Application and Permitting Process

- Must provide for expedited permitting for all facilities subject to as-of-right zoning
- Expedited = no more than one year from initial application to final approval
  - Can apply provisions of MGL c43D to achieve
- Municipality must have an effective enforcement mechanism
  - e.g. Constructive approval

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### Energy Use Baseline

#### III. Establish an Energy Use Baseline Inventory

- Must include all municipal:
  - Buildings
  - Vehicles
  - Street and Traffic Lights
- Must include a 20% reduction goal
- Applicable Tools include:
  - EnergyStar Portfolio Manager
  - ICLEI software
  - DOER's Energy Information Reporting System

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### Residential Stretch Code Basics

- Appendix 120.AA to 780 CMR
- Approximately 20% more efficiency than base code, and includes more 3rd party verification testing
- Applies to
  - New Construction
  - Additions
  - Renovations
- Provides *Performance* and *Prescriptive* options
  - Performance – based on HERS rating
  - Prescriptive – based on EPA ENERGY STAR Home

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### Residential Stretch Code Options

Construction Type	Performance	Prescriptive
New Homes	HERS (65 or 70)	N/A
Additions	HERS (65 or 70)	Energy Star Homes Builders Option Package (BOP)
Renovations	HERS (80 or 85)	Energy Star Homes Builders Option Package (BOP)

- ENERGY STAR Homes “Thermal Bypass Checklist” also required

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### HERS Rating

- Analysis of a home by independent 3<sup>rd</sup> party
- Raters must be certified by RESNET
- Rating procedure:
  - Plans review
  - Onsite visual inspections of energy features/systems
  - Verification testing

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### Commercial Stretch Code Provisions

- Applicable to New Buildings Over 5,000 sq. ft.
- Performance Options for All Buildings
  - Requires Building Modeling
  - Must Perform 20% Better than ASHRAE-90.1 2007 Compliant Building Model
- Prescriptive Option for Most Buildings
  - Between 5,000 and 100,000 sq. ft.

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### Commercial Stretch Code Provisions

- Prescriptive Option Details
  - New Buildings Institute Core Performance Basis
  - Prescriptive Options Address:
    - Heating and Cooling Equipment
    - Improved Lighting Efficiency (Lighting Power Density)
    - Electric Needs Addressed by On-Site Renewables
  - Utility Program Incentives Available to Minimize Costs of Higher Efficiency Projects

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### Stretch Code

- Upcoming Workshops Specifically on Stretch Code
  - November 19<sup>th</sup>
  - December 10<sup>th</sup>
- DOER sponsored Code/Stretch Code training
- DOER Webinar on Stretch Code available at:
- [www.mass.gov/doer/greencommunities](http://www.mass.gov/doer/greencommunities)

Then select Green Communities on the right and then Green Communities Program. The link is on the right hand side.

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### Resources: Green Communities Toolkit

- DOER Green Communities website  
[www.mass.gov/energy/greencommunities](http://www.mass.gov/energy/greencommunities)
- Model as-of-right bylaw for Large Scale PV  
[http://www.mass.gov/Eoeea/docs/doer/gca/Solar\\_Model\\_Bylaw%20FINAL%20Sept%2009.doc](http://www.mass.gov/Eoeea/docs/doer/gca/Solar_Model_Bylaw%20FINAL%20Sept%2009.doc)
- Model as-of-right bylaw for Wind  
<http://www.mass.gov/Eoeea/docs/doer/gca/gc-model-wind-bylaw-mar-10-2009.pdf>
- Guidance and Model Outline for 20% Energy Reduction Plan  
<http://www.mass.gov/Eoeea/docs/doer/gca/GUIDANCE%20FOR%20ENERGY%20REDUCTION%20PLAN%20SEPT%2009.doc>
- Guidance and Model Policy for Purchasing only Fuel Efficient Vehicles  
<http://www.mass.gov/Eoeea/docs/doer/gca/GUIDANCE%20FOR%20GFCV%20POLICY%20SEPT%2009.doc>
- Energy Code Webinar  
<http://www.mass.gov/Eoeea/docs/doer/gca/MA%20stretch%20code%20Wed19%20webinar.pdf>

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### Southeast Communities



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### Group Assignments

- Group 1: Cape Regional Consortium, Fairhaven, Hanover, Pembroke, New Bedford
- Group 2: Carver, Dedham, Hanson, Kingston, Milton, Plymouth, Provincetown
- Group 3: Cohasset, Easton, Harwich, Lakeville, Marshfield, Quincy, Rockland, Scituate, Tisbury, Truro, and West Tisbury

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### Timeline for Group Assistance

- October 20th - Introductory webinar
- November 19th & December 10th
  - Life-Cycle Cost Minimization (Stretch Code) Workshops
- All work must be completed by June 30, 2010

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### Timeline for Direct Technical Assistance

- Each community has been assigned a member of the BlueWave team providing direct technical assistance:
- Group 1
  - Initial Contact in October
  - Final plans completed in February
- Group 2
  - Initial Contact in December
  - Final plans completed in April
- Group 3
  - Initial Contact in March
  - Final plans completed in June

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### Thank you!

**Contact Information**

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QUESTIONS?

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