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**Legislative Update: Massachusetts Bill  
Promoting Climate Change Adaptation, Environmental and  
Natural Resource Protection and Investment in  
Recreational Assets and Opportunity**

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Boston, Massachusetts**

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ENVIRO-  
POLICY

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# SOURCES OF ENVIRONMENTAL POLICY



# RESOURCE AND SUPPLY



# ECONOMICS



# ENVIRONMENT



# POLITICAL LEADERSHIP



# The Policy of Change – Climate Change?

- **POLICY CHANGES AND PRIORITIES ENSURE:**

- Sustainability
- Safety
- Continuation of fuel supply
- Affordability of regional energy sources

- **RESOURCES PROTECTED:**

- Natural
- Historic
- Aesthetic
- Encouraging local and renewable energy resources



# RESOURCE OPPORTUNITIES – [To date]

- **Solar production:** potential is significant for both small and large projects
- **Mid-scale wind:** significant remaining potential for projects under 5MW for community wind and installations with collocated commercial load
- **Biomass:** a lower cost option for many and a local source; sustainability
- **Combined Heat & Power:** District Energy Systems (DES)

# WHAT'S THE RUSH: *THE WORLD WILL END IN 12 YEARS . . . .*

- Chose whom to believe
  - AOC – Climate change has sounded the death knell, we didn't listen, now we are doomed, reverse 300+ years of industrialization in a dozen years
  - DJT –Climate change was a hoax concocted by Chinese businessmen

# THE MASSACHUSETTS RESPONSE

- *An Act Promoting Climate Change Adaptation, Environmental and Natural Resource Protection and Investment in Recreational Assets and Opportunity*
- \$2.4 billion in capital allocations for investments in safeguarding residents, municipalities and businesses from the impacts of climate change, protecting environmental resources, and improving recreational opportunities
- Critical environmental investments at the state and local levels and will put into law essential components of Governor Baker's Executive Order 569 establishing an integrated strategy for climate change adaptation across the Commonwealth

# EXECUTIVE ORDER 569

- What it Does: Established an integrated strategy for climate change adaptation across the Commonwealth
- What EO 569 included:
  - [Municipal Vulnerability Preparedness grant program](#)
  - [Statewide Hazard Mitigation and Adaptation Plan](#)
- The Senate Bill essentially codifies and further funds these programs

# Wanna be an MVP –

- [*Sorry, Not everyone gets a trophy*]
- The program delivered by state-certified MVP providers
- Uses a standardized toolkit for assessing vulnerability and developing strategies, and the best available statewide climate projections and data.
- Upon successful completion of the program, municipalities will be designated as a “Municipal Vulnerability Preparedness (MVP) program community,” which may lead to increased standing in future funding opportunities

# State Hazard Mitigation and Adaptation Plan

- INTEGRATED PLAN

- ***Hazard mitigation*** - The effort to reduce loss of life and property by lessening the impact of disasters.
- ***Climate adaptation*** - The adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

## Core of the plan

***Resilience***: The ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner.

# SHMCAP Component Parts

- Identify Climate Change Projections
- Identify Risks and Vulnerabilities Massachusetts Faces
- Identify Current Capabilities and Adaptability
- Develop a “*Living Plan*”

# Climate Change Projections for Massachusetts

- Changes in precipitation
  - \* Inland flooding \* drought \* landslide
- Sea level rise
  - \* Coastal Flooding \* Coastal Erosions \* Tsunami
- Rising Temperatures
  - \* Extreme temperatures \* Wildfires \* Invasive species
- Extreme weather

Snowmagaden



# Climate Action – Where the Dollars Go \$\$\$

- To respond to and prepare for extreme weather, sea level rise, inland flooding and other climate impacts
- To continue supporting communities around the Commonwealth and the environmental stewardship work they do
- To support environmental programs at the Massachusetts Department of Environmental Protection and other agencies ranging from air and water quality monitoring to hazardous waste cleanup and the restoration of rivers, wetlands, streams, and lakes

# Dollars for the “NEW WEATHER”

- Protecting coastal and inland communities by:
  - \$290 million will be used to fund improvements and repairs to dams and seawalls and to implement diverse coastal resiliency strategies
  - \$75 million will provide planning and action grants to communities through the Municipal Vulnerability Preparedness (MVP) Program
  - \$100 million will be invested in implementing the Commonwealth’s Integrated State Hazard Mitigation and Climate Adaptation Plan

# Municipalities & Environmental Stewardship

- \$405 million for community investment grant programs for municipalities, regional planning agencies and other eligible entities
- \$35 million for tree planting and forest land protection programs
- \$55 million for the Massachusetts Department of Transportation's Complete Streets Program which provides funding to communities to provide safe and accessible options for all travel modes - walking, biking, transit and vehicles

# Betting the House for a Better Home

- Ensures high-quality access to outdoor recreational opportunities
  - \$665 million to enable investment in deferred maintenance and recreational resource stewardship across state government
  - \$25 million for the expansion and interconnection of trails through the MassTrails program
  - \$400 million for Department of Conservation and Recreation recreational facilities across the Commonwealth

# MORE MONEY FOR EXISTING PROGRAMS

- \$474 million to support environmental programs at the Massachusetts Department of Environmental Protection and other agencies
  - Air and water quality monitoring
  - Hazardous waste cleanup
  - Restoration of rivers, wetlands, streams, and lakes.
  - Additional \$60 million for the Commonwealth's Clean Water Trust to continue its strong partnership with cities and towns in developing water infrastructure projects

# Next Generation Energy Practice

- Demand side reductions
  - LEED
  - Performance Contracting
  - New Work & School Policy
- Generation side Improvements
  - Renewables
  - Clean fossil technologies with improved emissions profiles
  - Electrification {but what if grid fuel source is still 80 carbon]}
- Multimodal and Shared Transportation

# WHERE MUNICIPALS CAN LOOK

## LOCAL CLIMATE ACTION EXAMPLES

- Solar photovoltaic (PV)
- Combined heat and power (CHP) or cogeneration systems
- Microgrids - [Islanded and non-islanded]
- Wind turbines
- Micro turbines
- Back-up generators
- Energy storage – *{love and marriage love and marriage}*
- Electric and shared vehicle space – Zip cars of the future

# UTOPIAN GENERATION – THE MICROGRID

## Microgrid Platform Technology

*“Microgrid”* means an integrated energy system consisting of interconnected loads and distributed energy resources with clearly defined electrical boundaries that acts as a single controllable entity with respect to the transmission or distribution grid and can connect and disconnect from the transmission or distribution grid to enable it to operate in parallel with the grid or in an intentional island mode



# UTOPIAN GENERATION – THE CHALLENGES

## **Microgrids Present Platform Hurdles**

- Regulatory structure under which microgrids would operate
- How operation of microgrids would conform with current utility requirements to provide safe and adequate service
- Technical and regulatory aspects of how a microgrid will be interconnected to the grid
- Adequacy of a microgrid system to operate in emergency situations
- Funding mechanisms to pay for development, operation, and maintenance of microgrids, including cost benefit analysis

# MUNICIPAL PARTNERSHIPS IN ENERGY – GETTING THERE

- Performance Contracting with *Generation Components*
  - Solar
  - Biomass
- Sale/Lease of Surplus Real Property for Generation Facility Siting
  - Landfills
  - Brownfields
  - Open Space
- Co-location of bio-mass and existing WRRFs
- Solid Waste to Energy/Fuels/RNG
- Community Choice Aggregation

# MUNICIPAL PARTNERSHIPS IN ENERGY – WHERE IS THE GREEN IN GREEN

- Lease payment to municipality
- Host Community Payments to municipality
- Royalty for sale of energy-offtake
- Environmental Attributes – RECs, Monetized value of Tax Credits
- TIFs/PILOTS
- Development Impact Fees



# Summary and Takeaways

- Policy has shifted to anticipate and address Climate Change
- Massachusetts' approach is integrated
  - Integrate adaptation and response
  - Integrate state and community
  - Integrate key stakeholders
- Pay to Play – Grant and loan participation depends on you
- Something old/something new
  - New money in old programs
  - New programs with funding source
- With knowledge there is power \* **RENEWABLE POWER**

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