



# Massachusetts Municipal Association Annual Meeting

January, 2015



# **Going Green: Getting Energy Efficiency Right**

**Town of Mashpee, MA**

Tom Mayo  
Assistant Town Manager

# Agenda

- Mashpee Energy Committee
  - Mission
  - Approach
  - Partners
    - Cape Light Compact
    - Commonwealth of MA - Green Communities Division
- Three pronged approach to energy management
  - Power supply rates and consumer advocacy
  - Energy efficiency
  - Renewable energy
- Successes
- Challenges
- Questions

# Mashpee Energy Committee

- Three person working group  
(Town Manager, Asst. Town Manager and DPW Director)
- Sets energy mission and related goals with Selectmen
- Identifies priorities
- Manages energy related projects



# Partner



- **Cape Light Compact**

- Regional energy aggregator consisting of all 15 Cape Cod and 6 Martha's Vineyard towns and 2 counties
- 1997 MA Restructuring Act authorizes towns and cities to aggregate customers to **purchase power supply** and to **administer rate payer funded energy efficiency programs**
- 1998 Spring and Fall Town Meeting votes
- 1998 Towns form Cape Light Compact, Execute Intergovernmental Agreements
- Assistant Town Manager (member of Mashpee Energy Committee) is representative on CLC Governing Board

# Partner



- **Commonwealth of Massachusetts**
  - Department of Energy Resources**
  - Green Communities Division**
- Product of 2008 legislation “Green Community Act”
- Provides funding for designated “Green Communities” to implement approved energy efficiency measures
- Mashpee designated a Green Community in the inaugural class of 2010
- Received over \$170,000 for efficiency upgrades in first year of program

# Energy Management Three Pronged Approach

- Power supply rates and consumer advocacy
- Energy efficiency
- Renewable energy



# Power supply rates and consumer advocacy



- **Cape Light Compact**

- Power supply rates
  - Regular procurement of power aimed at lowest rates and best terms
    - General ratepayer accounts
    - Municipal government accounts
- Consumer Advocacy
  - \$20M rate increase for residential customers prevented due to Compact intervention in NSTAR DPU case
  - Compact staff participating in several DPU working groups and proceedings
  - \$111M in shared savings from NSTAR DPU case regarding long-term renewable energy contracts
  - \$5.7M in savings on distribution rates through preventing allocation of NSTAR Green costs
  - \$25M in savings from sale of Canal Plant



# Energy Efficiency

On-going efforts to continually upgrade our energy infrastructure

## Types of projects include:

- ✓ Energy Efficiency Audits
- ✓ Energy Management Systems
- ✓ HVAC Upgrades
- ✓ Lighting Upgrades



# Energy Efficiency

## Funding Sources

- **Cape Light Compact**
  - **Municipal Customers Eligible for 100%** – The Compact offers 100% incentive for all *cost effective* measures for public projects up to \$150,000 (and beyond with Governing Board approval).
    - *Cape Light Compact Energy Efficiency Plan as filed with the Department of Public Utilities*
  - Since 2010, the Town of Mashpee has received over \$800,000 in funds saving over 600,000 kWh annually.



# Energy Efficiency

## Funding Sources

- **Green Communities**
  - Designated a Green Community in 2010
  - Received initial funding in the amount of \$170,000 for *qualifying* efficiency projects
  - Continue to apply for annual funding for additional efficiency projects



# Energy Efficiency

## Funding Sources

- **Town of Mashpee**
  - Capital Needs Bond – Issued Fiscal Year 2012
  - Projects identified in 2010 Capital Needs Assessment
  - Needs Assessment highlighted, among other projects, energy efficiency needs



# Renewable Energy

- ✓ 1.83 MW of ground mounted solar
- ✓ 350 kW of roof mounted solar, across 4 buildings
- ✓ 2 vertical axis wind turbines
- Total renewable generation equal to approximately 2,800,000 kWhs annually
- This amount of renewable power is equal to approximately 90% of the total municipal electric load
- All via Power Purchase Agreements – No up front municipal costs, flat rates for length of contract and buy out options starting at 10 years

# Renewable Energy



Closed Landfill  
1.83 MW



Heritage Park  
Windspires  
3 kW



Mashpee High School  
300 kW



Mashpee COA  
10 kW



Mashpee DPW  
10 kW



Mashpee Library  
21 kW

# Successes

- ✓ Regional Energy Aggregation
- ✓ State Green Community program
- ✓ Power Purchase Agreements for renewable projects

## Key to all of our successes

Motivated people...Voters, Selectmen, Staff, Partners

# Challenges

- ✓ Permitting renewable energy projects (large number of permits required from several different agencies that don't always have the same goals)
- ✓ Utility role in developing renewable energy projects (Difficulties meeting deadlines, lack of consequences, difficult to get Utility to prioritize)
- ✓ Timing is everything...As we were pursuing our single, 1.83 MW landfill project, a regional energy cooperative was pursuing projects covering landfills in many Cape Towns developing over 28 MW of solar...this stretched the Utility's capabilities
- ✓ Attorney General challenges to the legality of municipal energy aggregation funding through electric rates...i.e. fee vs. illegal tax question
- ✓ Energy Efficiency Program limits – current cost effectiveness models, including school building assessments, disallow certain large ticket items, such as window replacement. As low hanging fruit such as lighting and HVAC upgrades are completed, these expensive though important projects need to be addressed.



# Mashpee Energy Management Summary

- Maintaining cost certainty via Power Purchase Agreements / power supply procurement and consumer advocacy
- Averaging over 100,000 kwh reduction in use every year for five years via efficiency measures
- Generating power equal to 90% of municipal load in renewable energy
- 4 existing PPA projects provide stable, low energy prices for length of PPA
- Town buy out of 4 PPA projects as early as 2024

***“Generation is up and usage is down...just the way we like it”***

# Thank You



# Questions?