Next Generation Energy Efficiency

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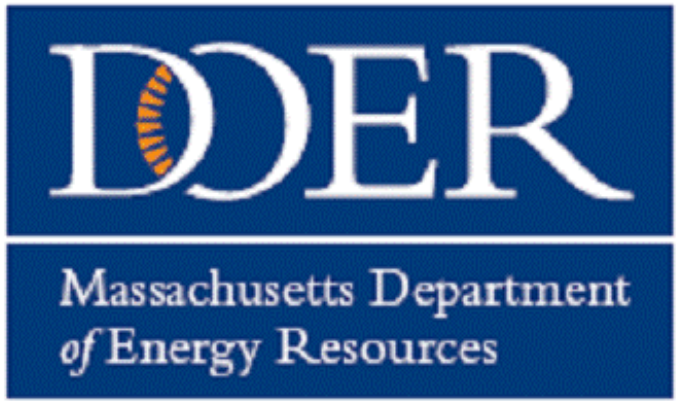
March 8, 2017



Massachusetts Energy Approach

1. Reduce and **stabilize the rising cost** of energy for consumers
2. Continue the Commonwealth's commitment to a **clean energy future**
   - GWSA GHG reductions: 25% by 2020 and 80% by 2050 (1990 baseline)
3. Ensure that we have a **safe, reliable, and resilient** energy infrastructure

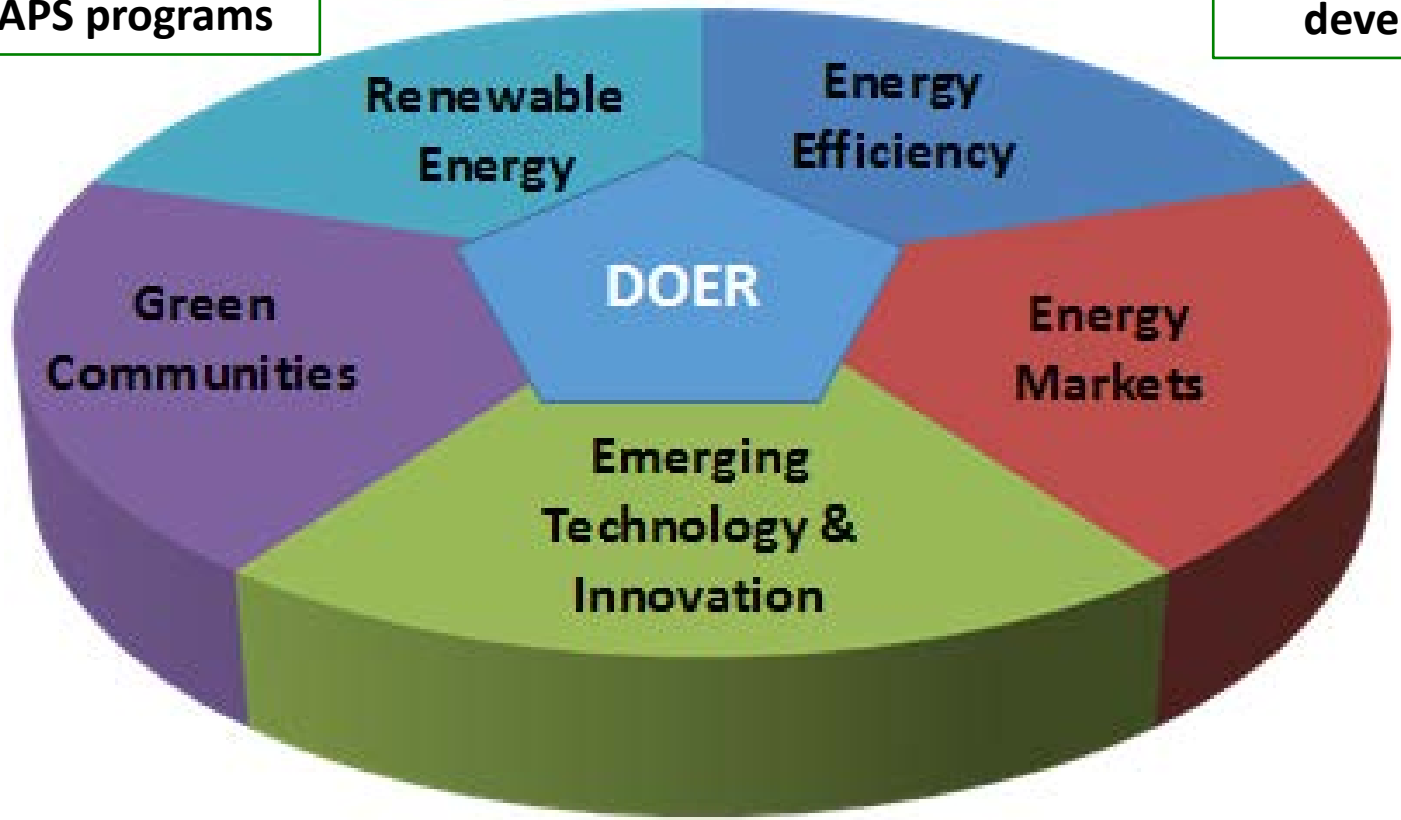
DOER Purpose and Organization

Creating a Clean, Affordable and Resilient Energy Future

Massachusetts Department of Energy Resources

Develops policies and manages RPS/APS programs

Chairs EEAC and supports innovation and development of EE



Supports cities and towns with grants, technical assistance

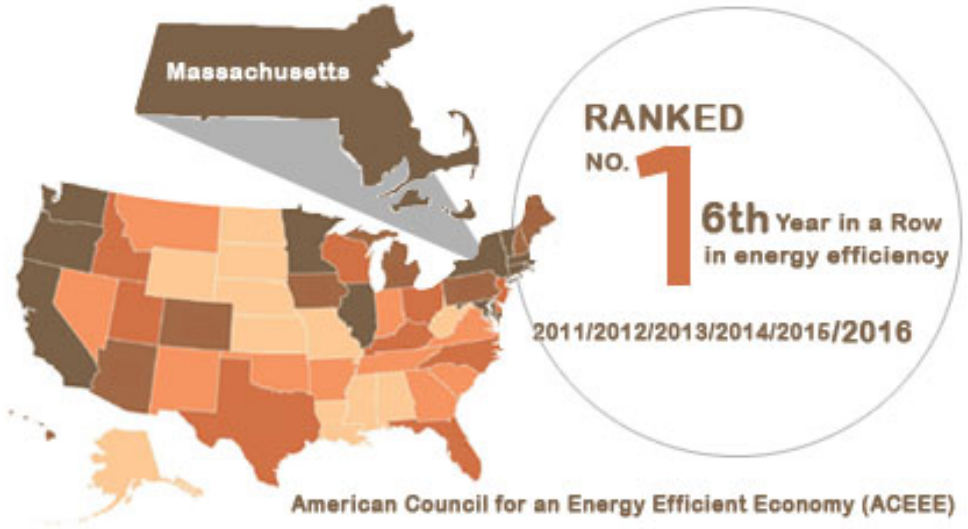
Tracks industry trends, develops policy for energy supply & security

Smart Grid, Storage, EVs

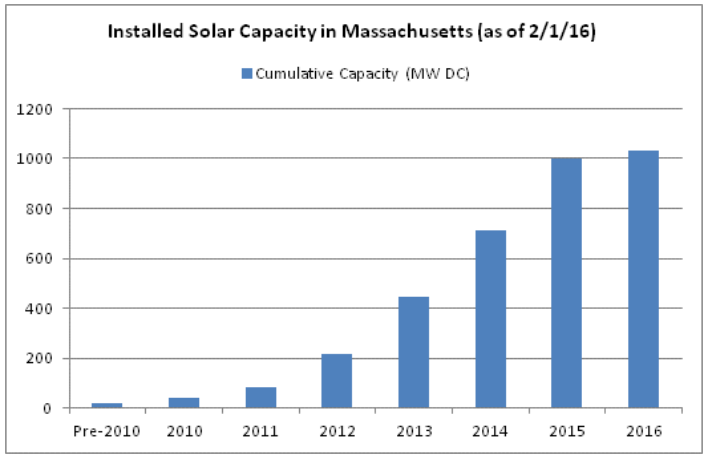
Here Now: Massachusetts is an Energy Efficiency Leader

- Mass Save® -- big savings, robust incentives, statewide programs
- "Traditional" passive energy efficiency
- 2016-2018 Plans have the most aggressive energy efficiency goals in U.S.
  - Will deliver $8 billion in economic, environmental and energy benefits
- 69,000 jobs and growing
- Continually innovating

From Twitter @MassSave 9/27/16



Here Now: Renewable Energy and EVs are growing fast



- Solar – on roofs and in large arrays
- Electric / renewable end use technologies – cold climate heat pumps, ground source heat pumps, biomass
- Electric vehicles and charging stations
- "Internet of Things" – controllability throughout the home/building

From the BBC

From nest

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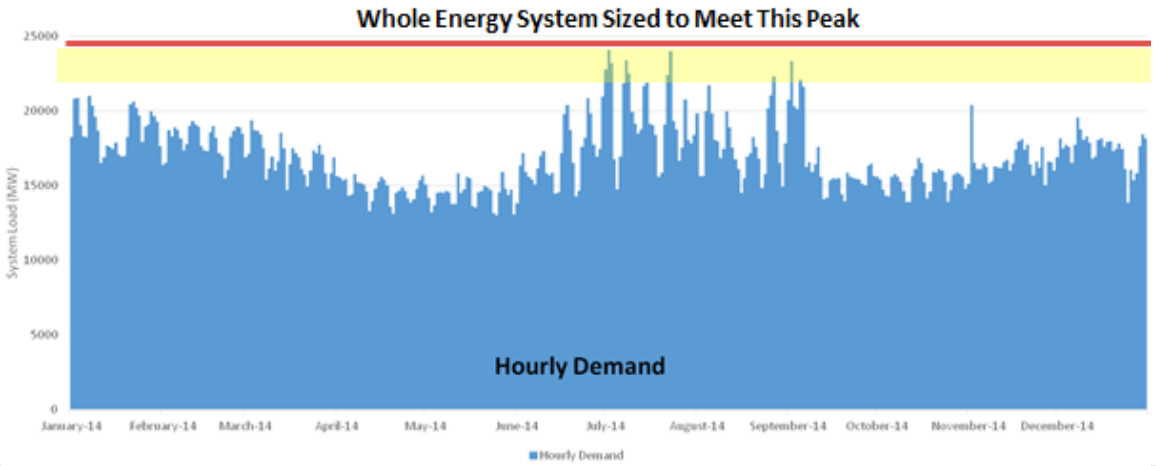
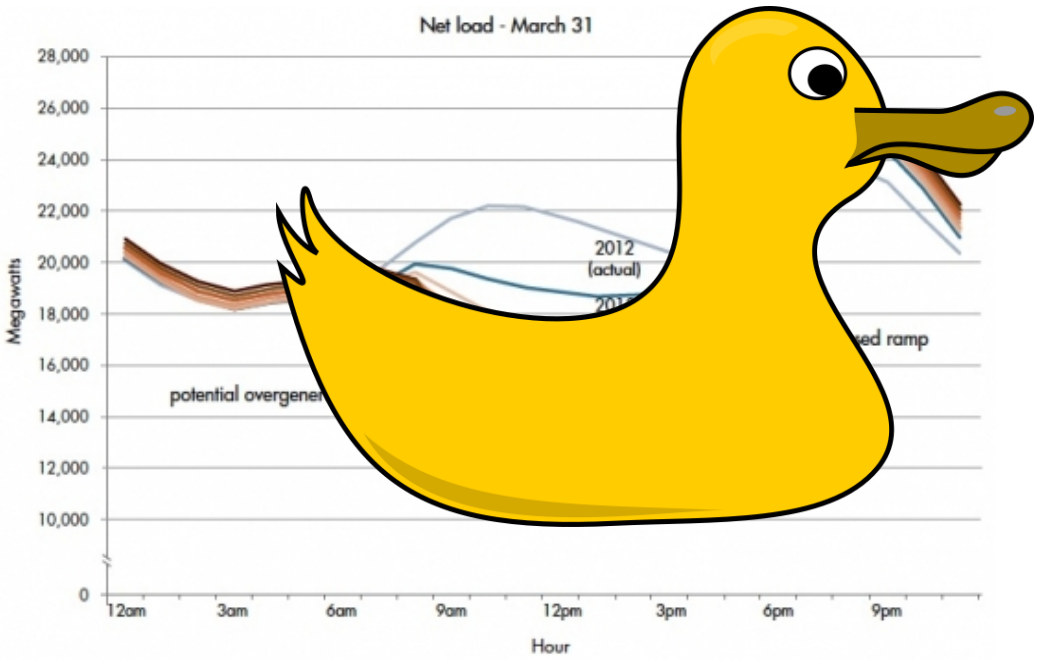
Coming Soon…

New stresses on the system potentially add cost, change requirements of “efficiency”

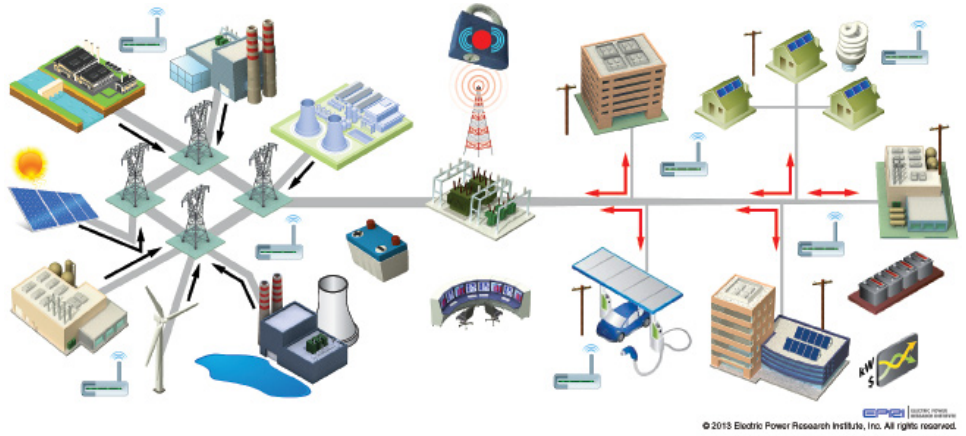
- The dreaded duck curve!
- Lower use, but higher peak demand
- A multidirectional grid



Top 1% of Hours accounts for 8% of MA Spend on Electricity
Top 10% of Hours accounts for 40% of Electricity Spend



From CA Energy Commission



How can policy address this future?

Incentivizing innovation:

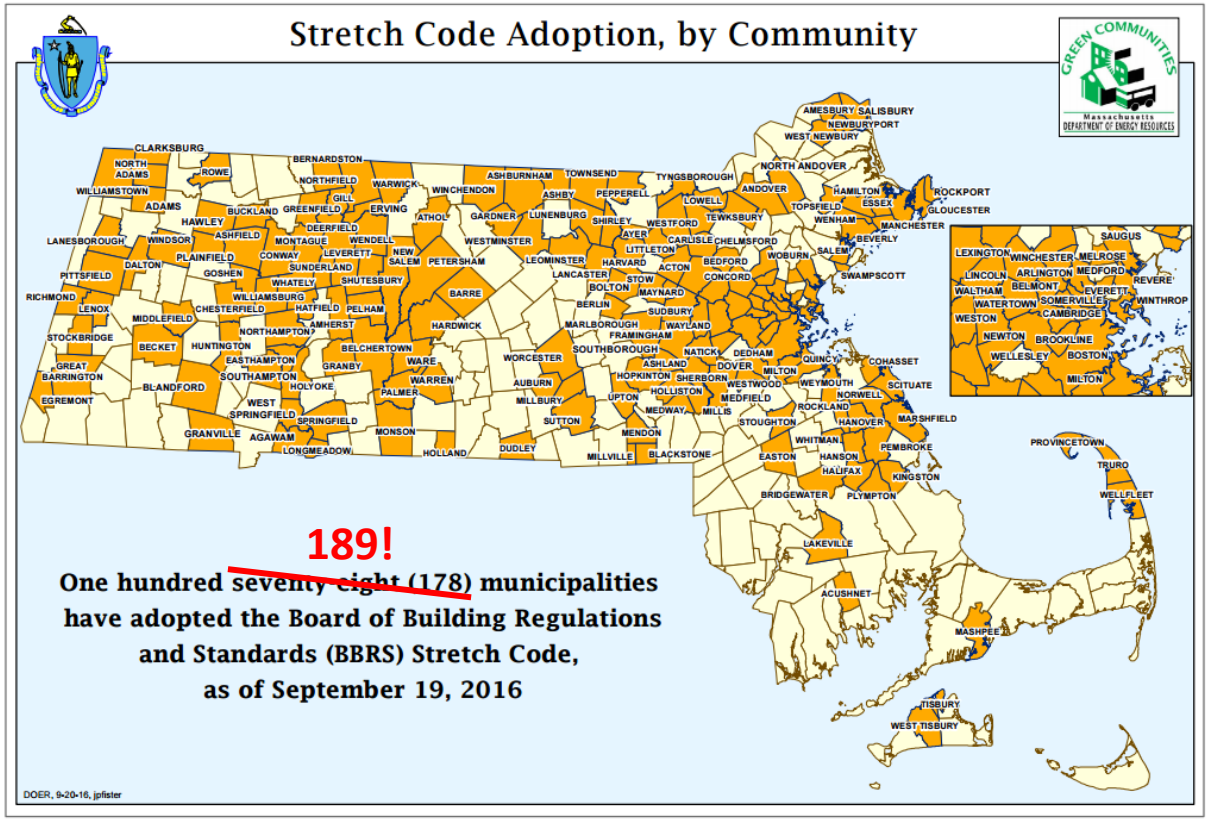
- MA EE programs are testing the integration of peak demand and energy efficiency – incentivizing load management as well as overall consumption
- New programs and policies spur battery storage and measures for resiliency
- DOER supporting innovation
  - Residential contractor pilot
  - Rapid streetlight conversions
  - New technologies & program models

From greentechmedia

From Ice Bear

How can policy address this future?

- Building energy codes recognizing the convergence of efficiency and renewables
- Stretch code rewards integrated design - over half the cities and towns in MA
- MA amendment to the base code for “solar ready roofs”
- Zero Energy, Passive and other low-energy / high performance buildings



Thank you!

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