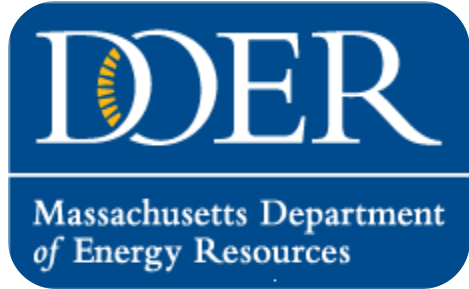


*Creating A Cleaner Energy Future For the Commonwealth*

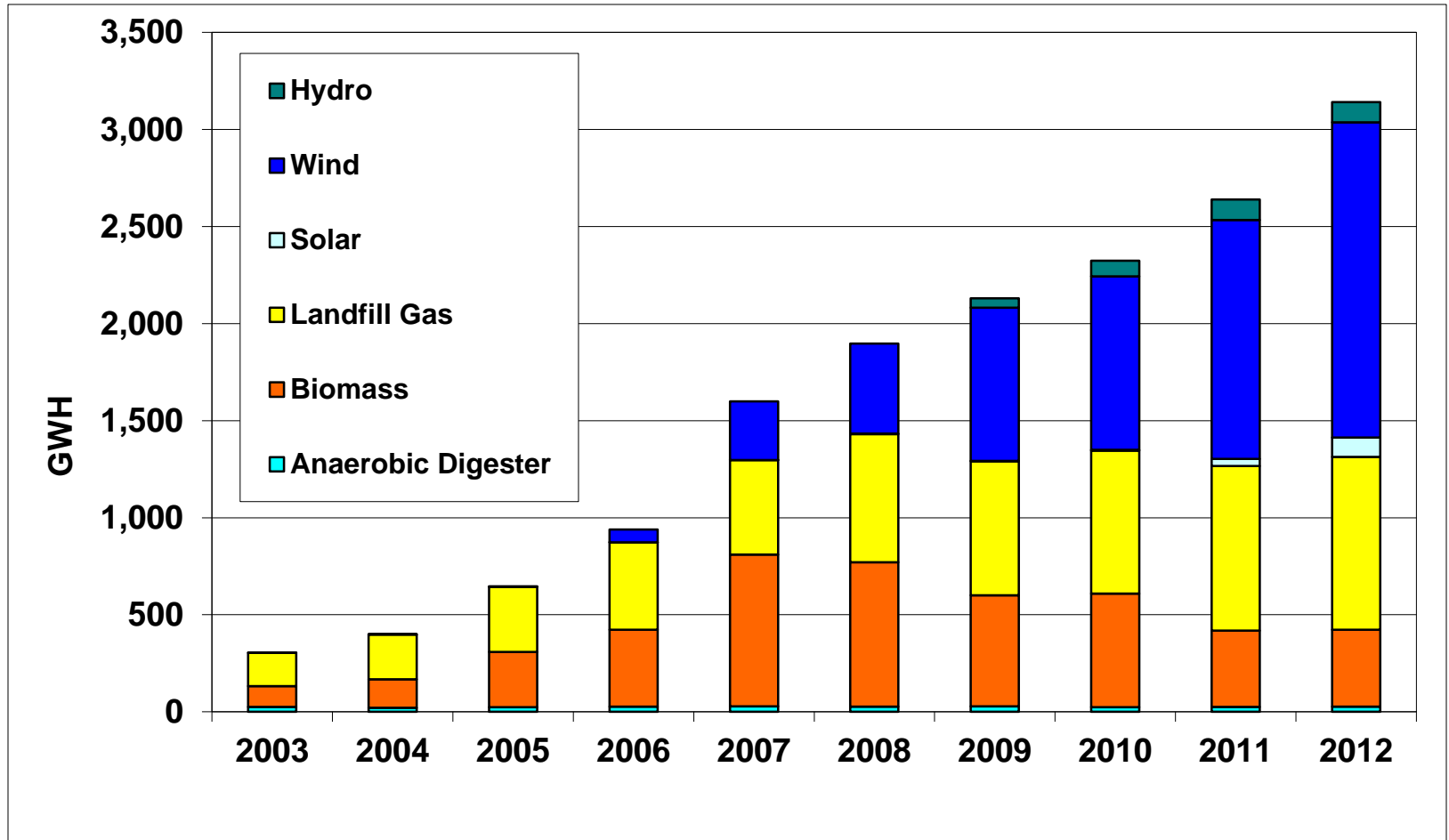


**MMA Annual Meeting**

*Boston, 1/24/14*

# **Growing Solar in MA**

# Renewable Energy Generation in MA

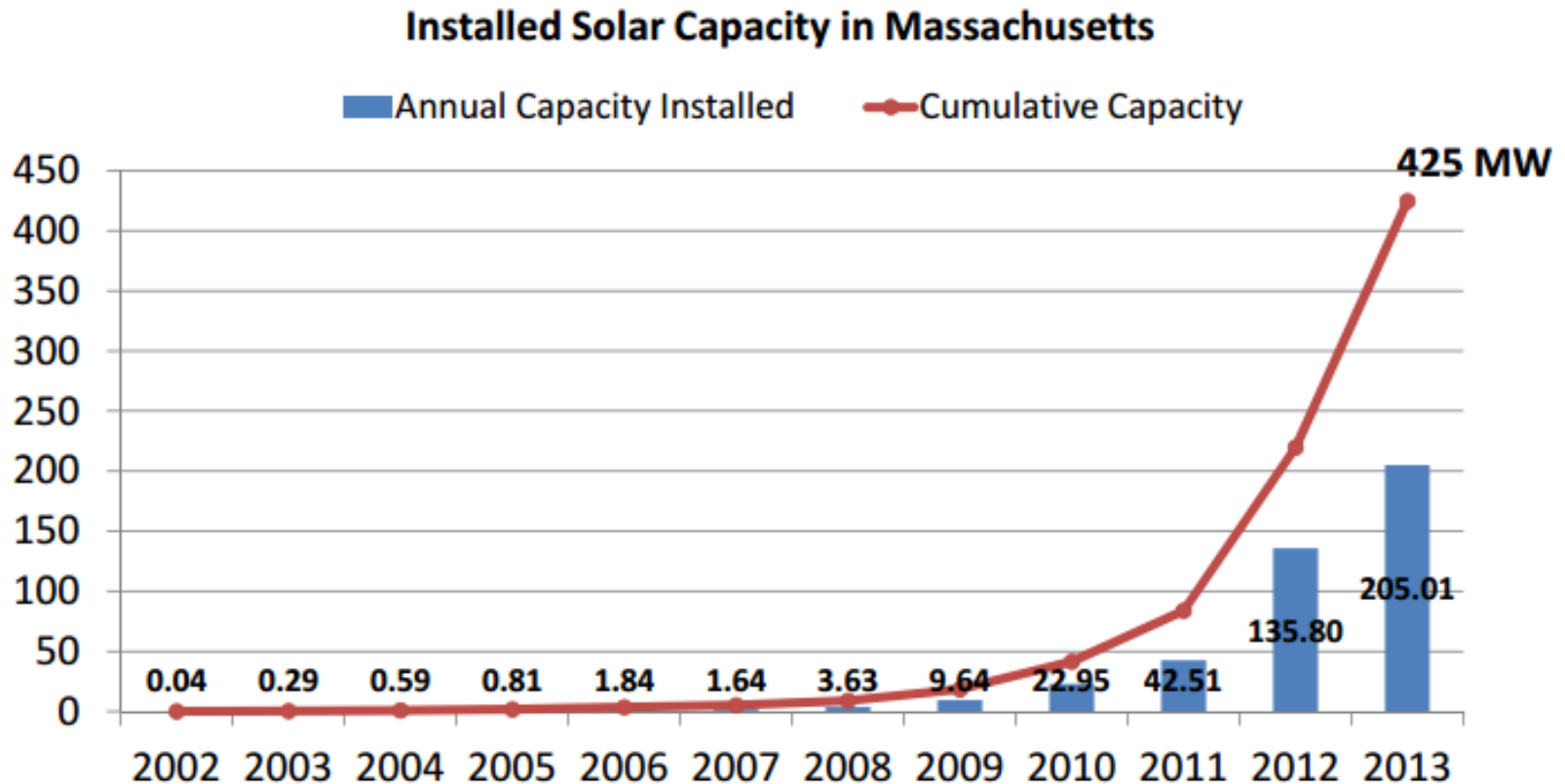


Source: [Draft 2012 Annual RPS-APS Report](#), DOER



Massachusetts Department  
of Energy Resources

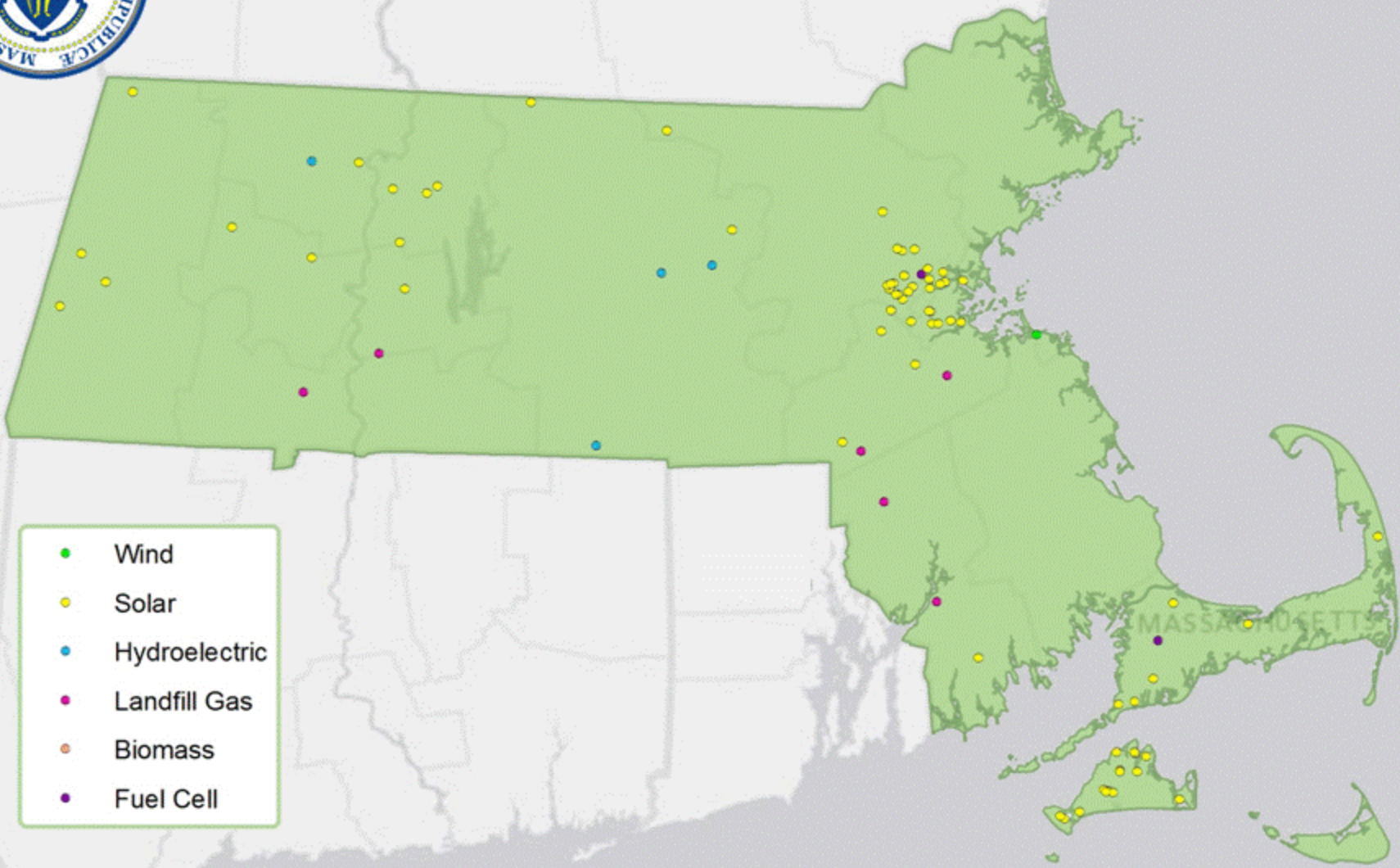
# Remarkable Solar Growth in Mass.



**In May 2013, the Patrick-Murray Administration met its 2017 goal to have 250 MW of solar power installed in Massachusetts. The Administration has set a new target of 1600 MW for 2020. The above figures represent the cumulative amount installed as of January 1, 2014.**



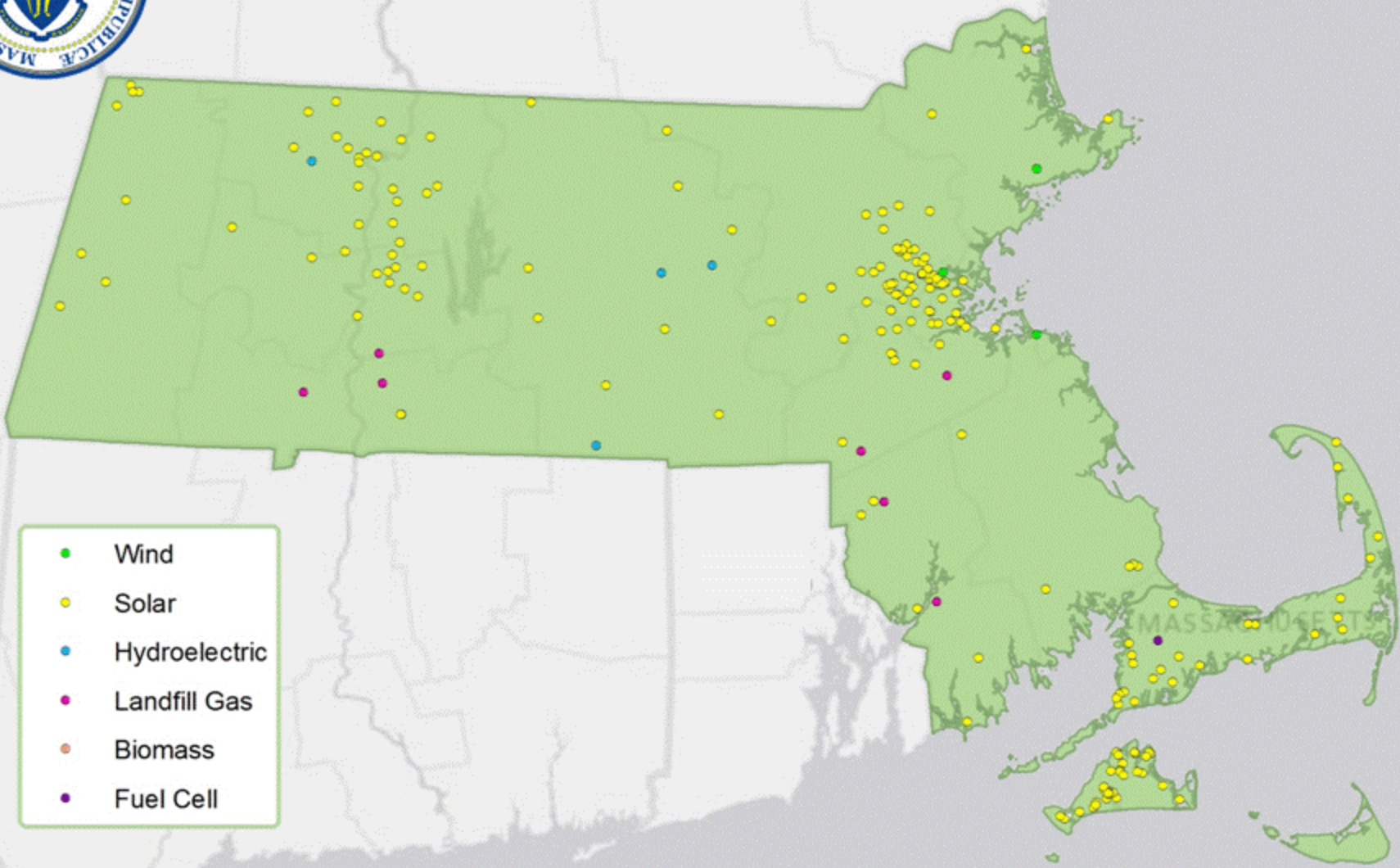
2004



- Wind
- Solar
- Hydroelectric
- Landfill Gas
- Biomass
- Fuel Cell



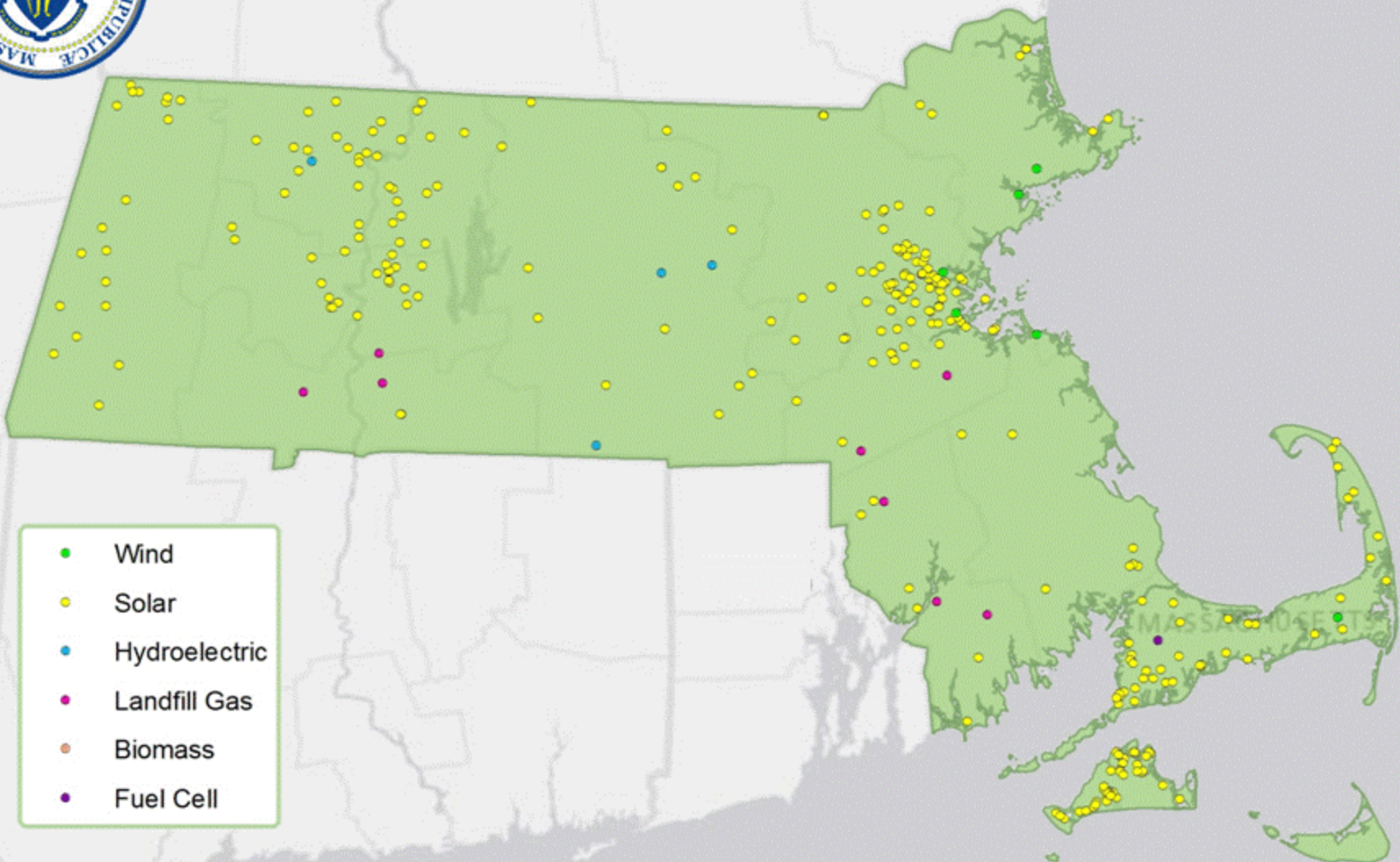
2005



- Wind
- Solar
- Hydroelectric
- Landfill Gas
- Biomass
- Fuel Cell



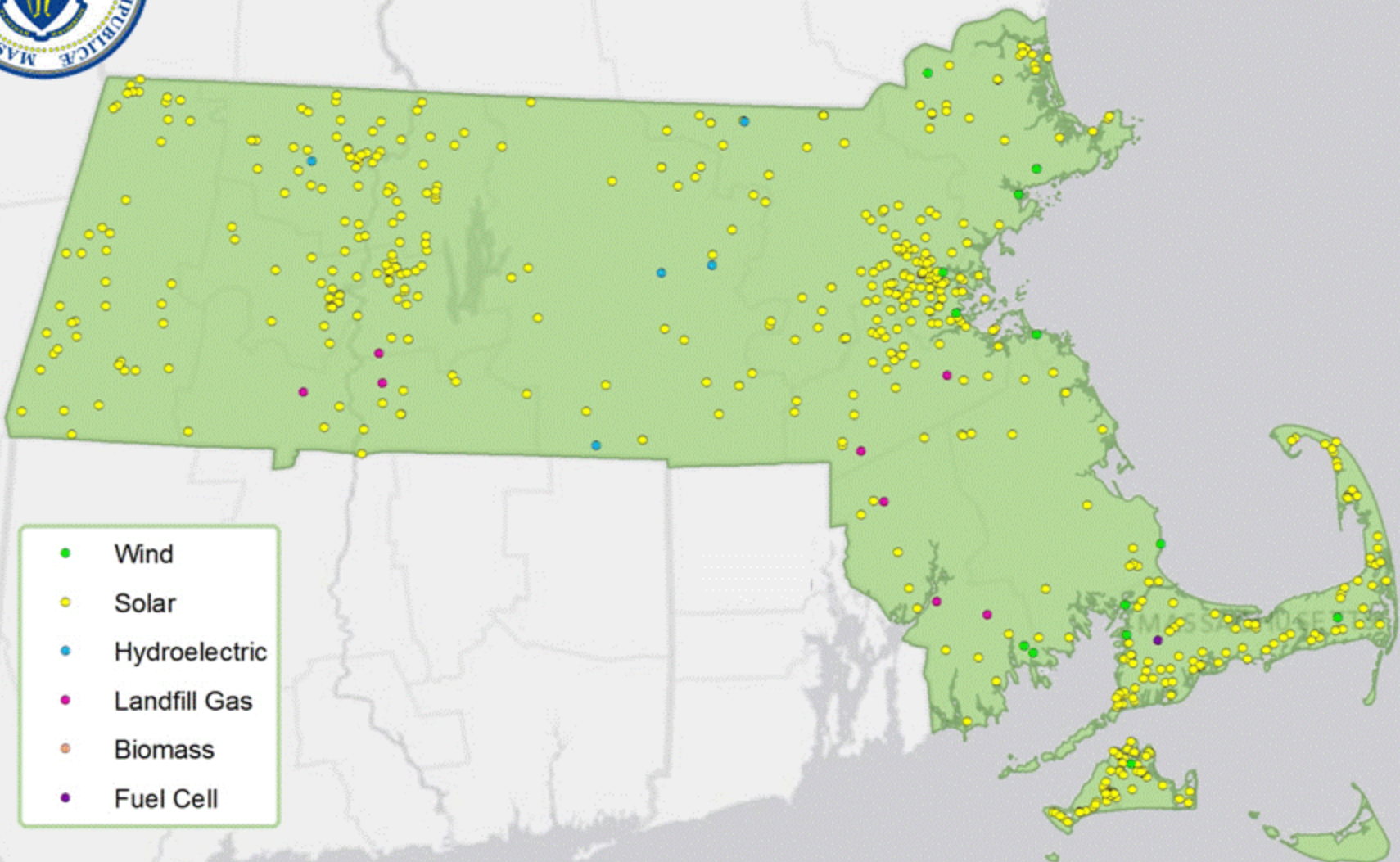
2006



- Wind
- Solar
- Hydroelectric
- Landfill Gas
- Biomass
- Fuel Cell



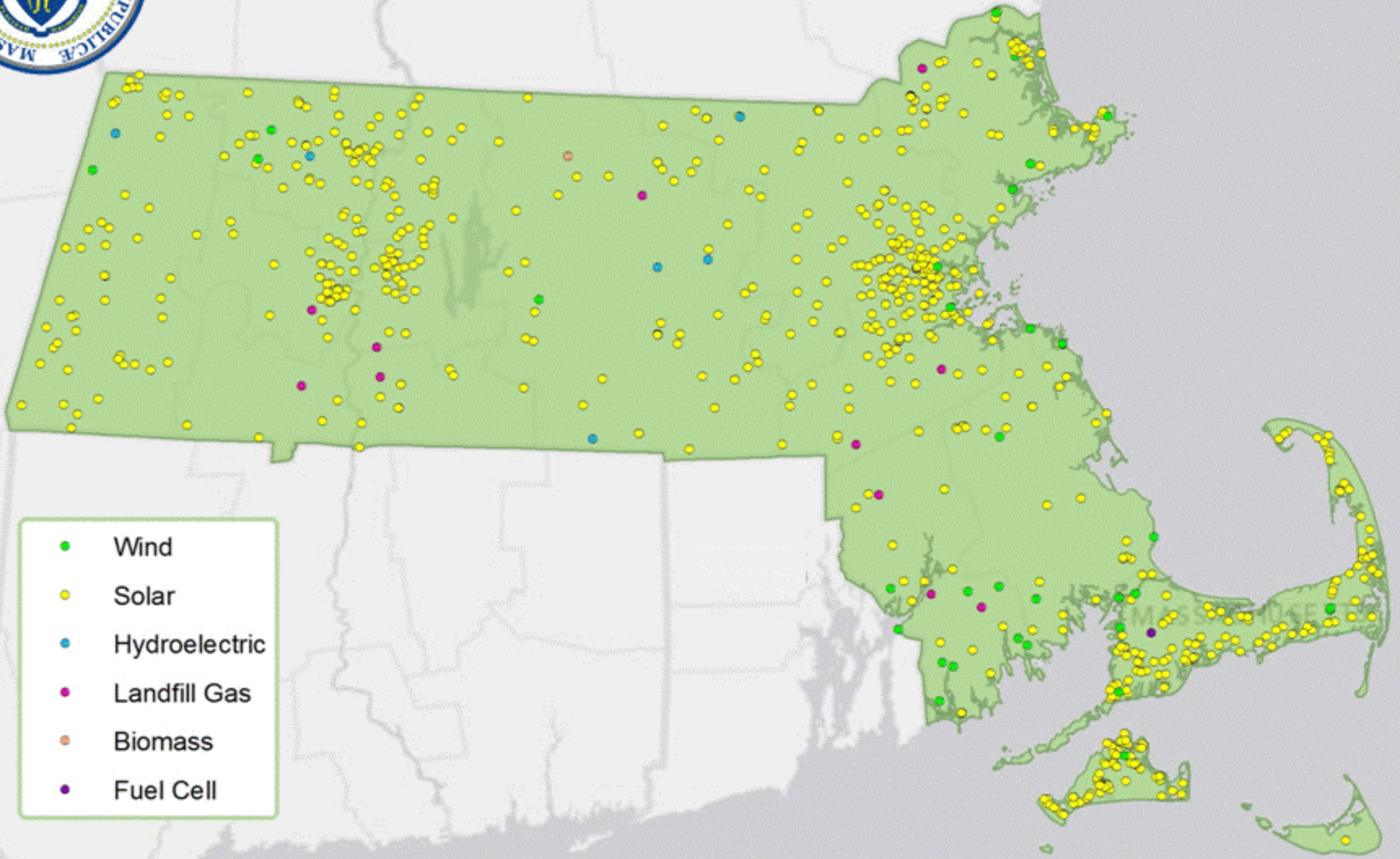
2007



- Wind
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- Fuel Cell



2008

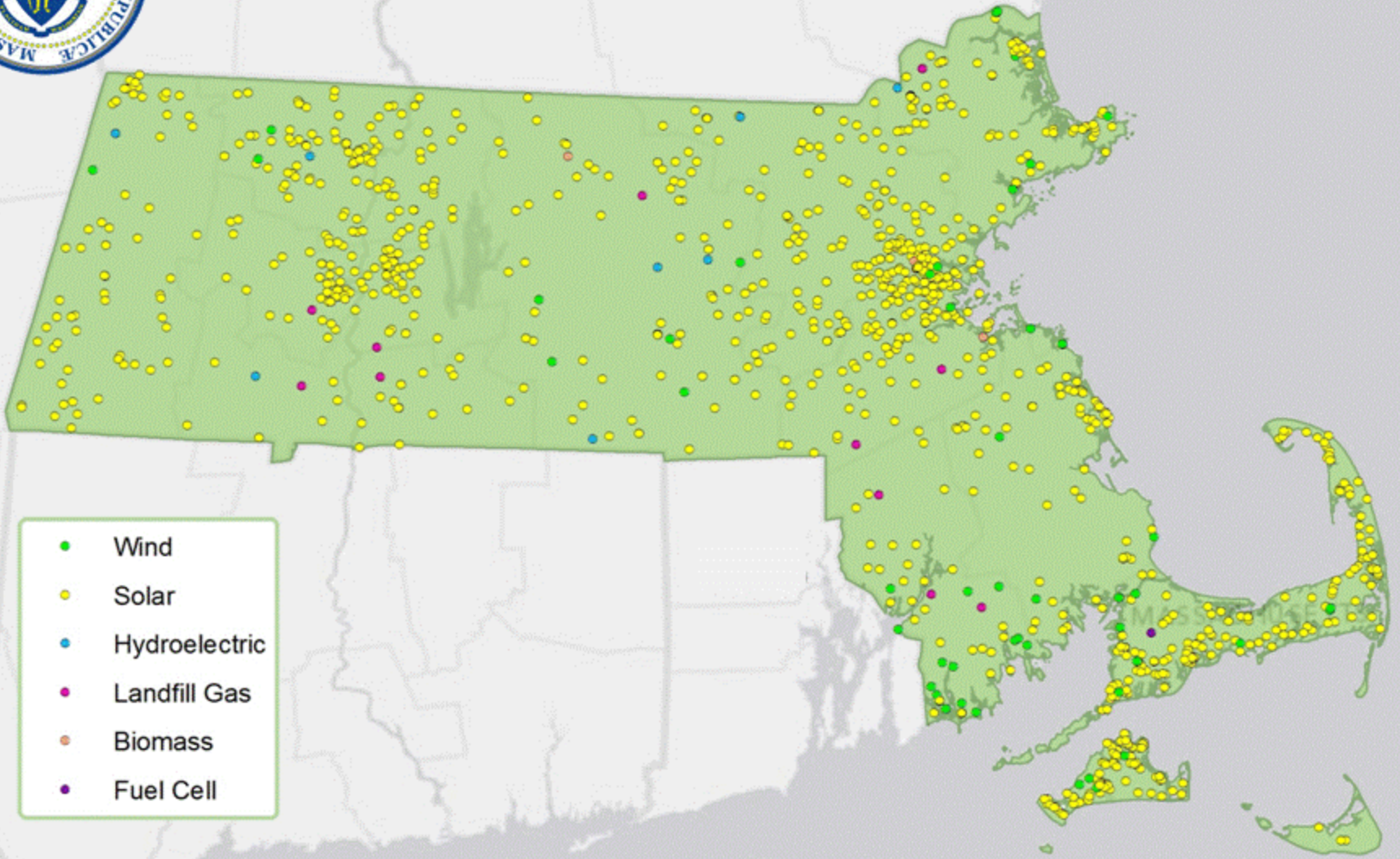


- Wind
- Solar
- Hydroelectric
- Landfill Gas
- Biomass
- Fuel Cell





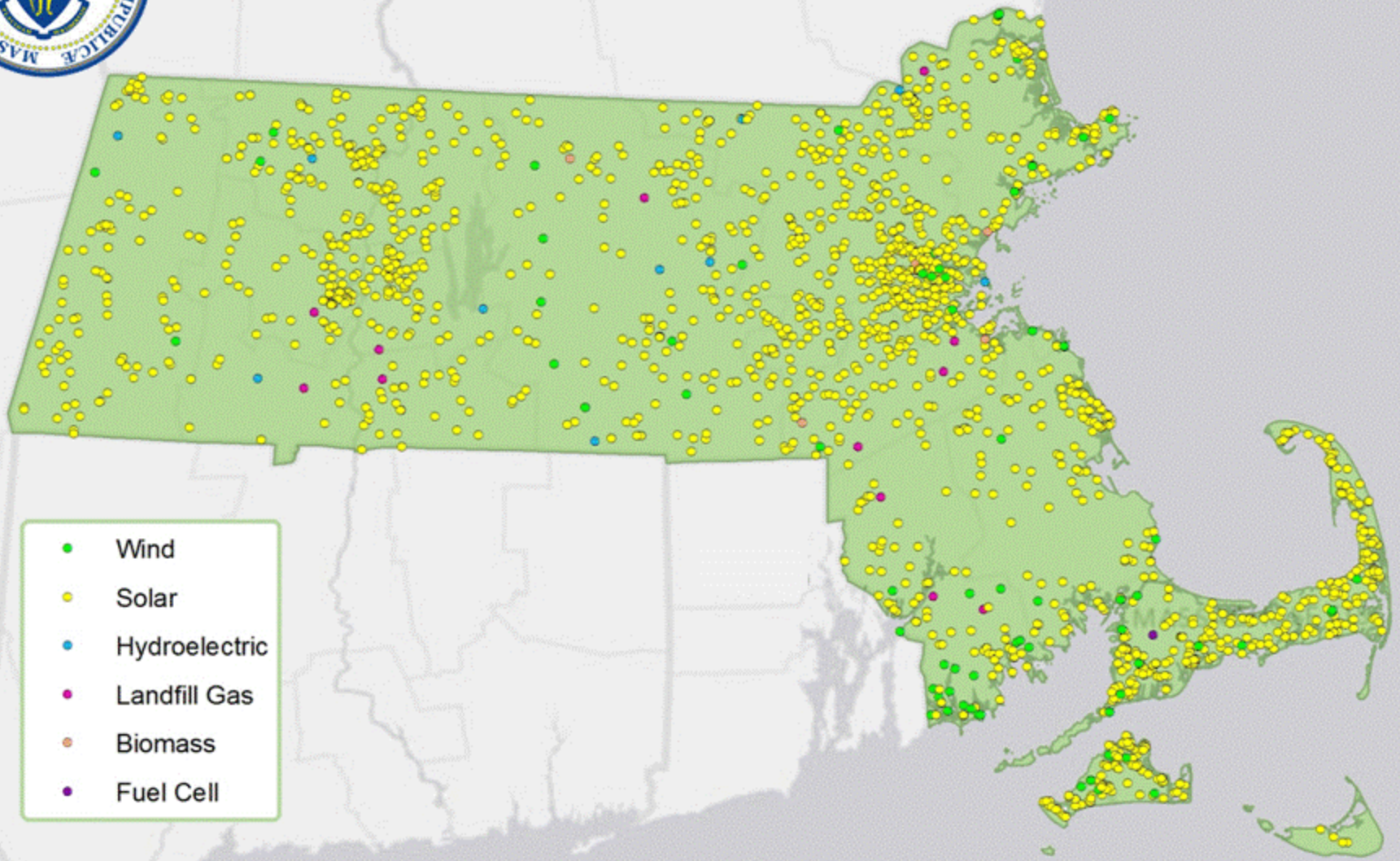
2009



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- Fuel Cell



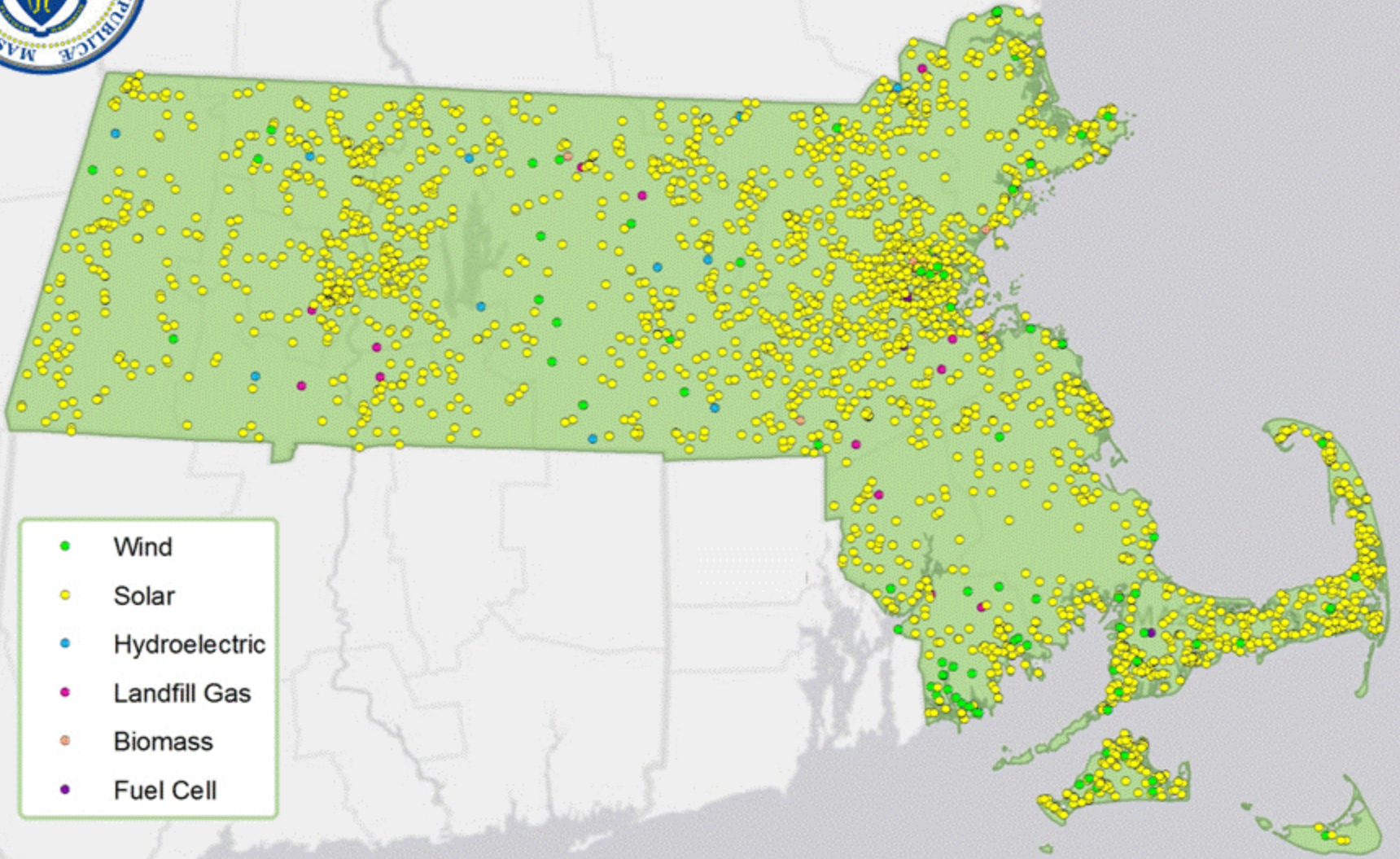
2010



- Wind
- Solar
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- Fuel Cell



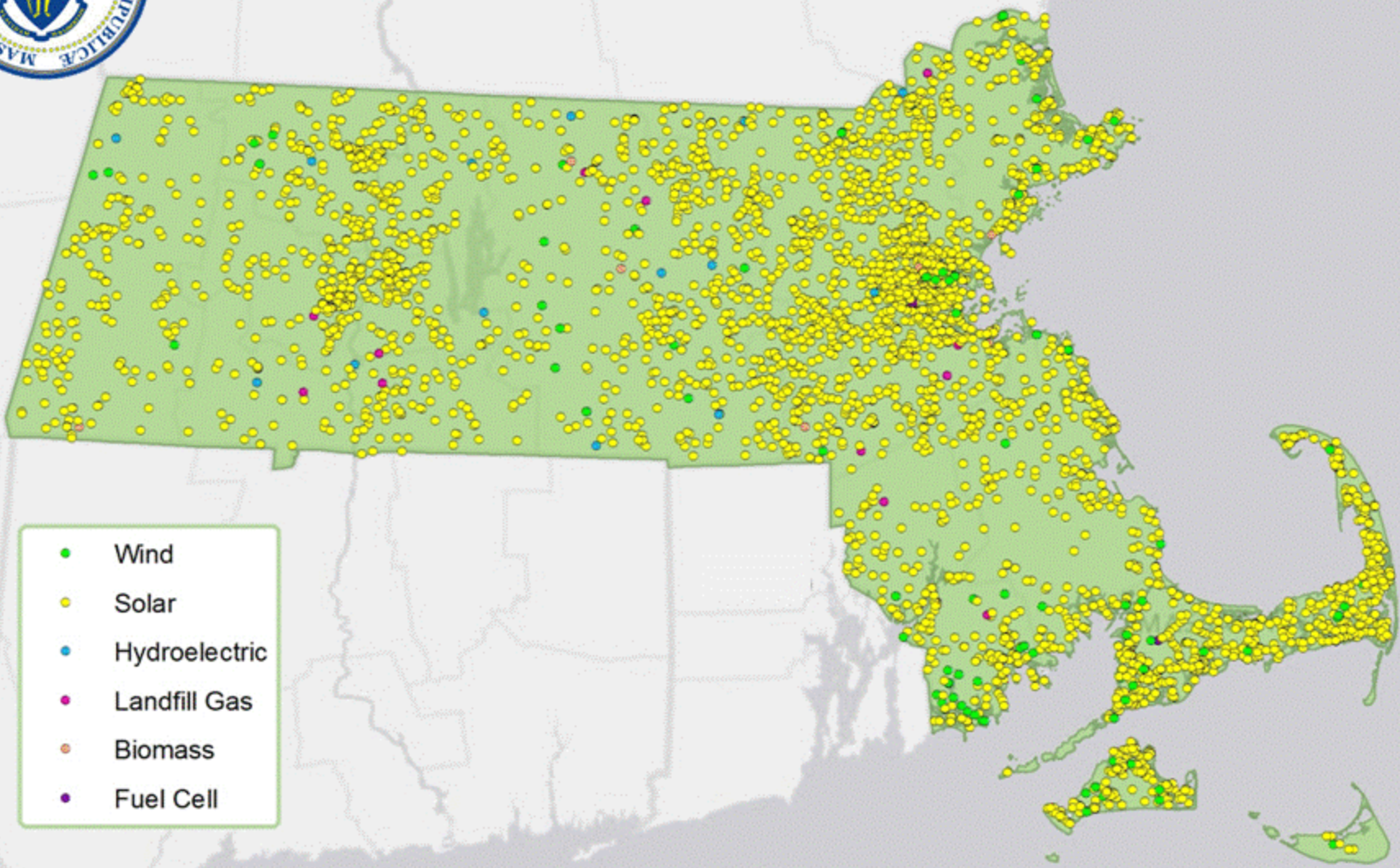
2011



- Wind
- Solar
- Hydroelectric
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- Fuel Cell



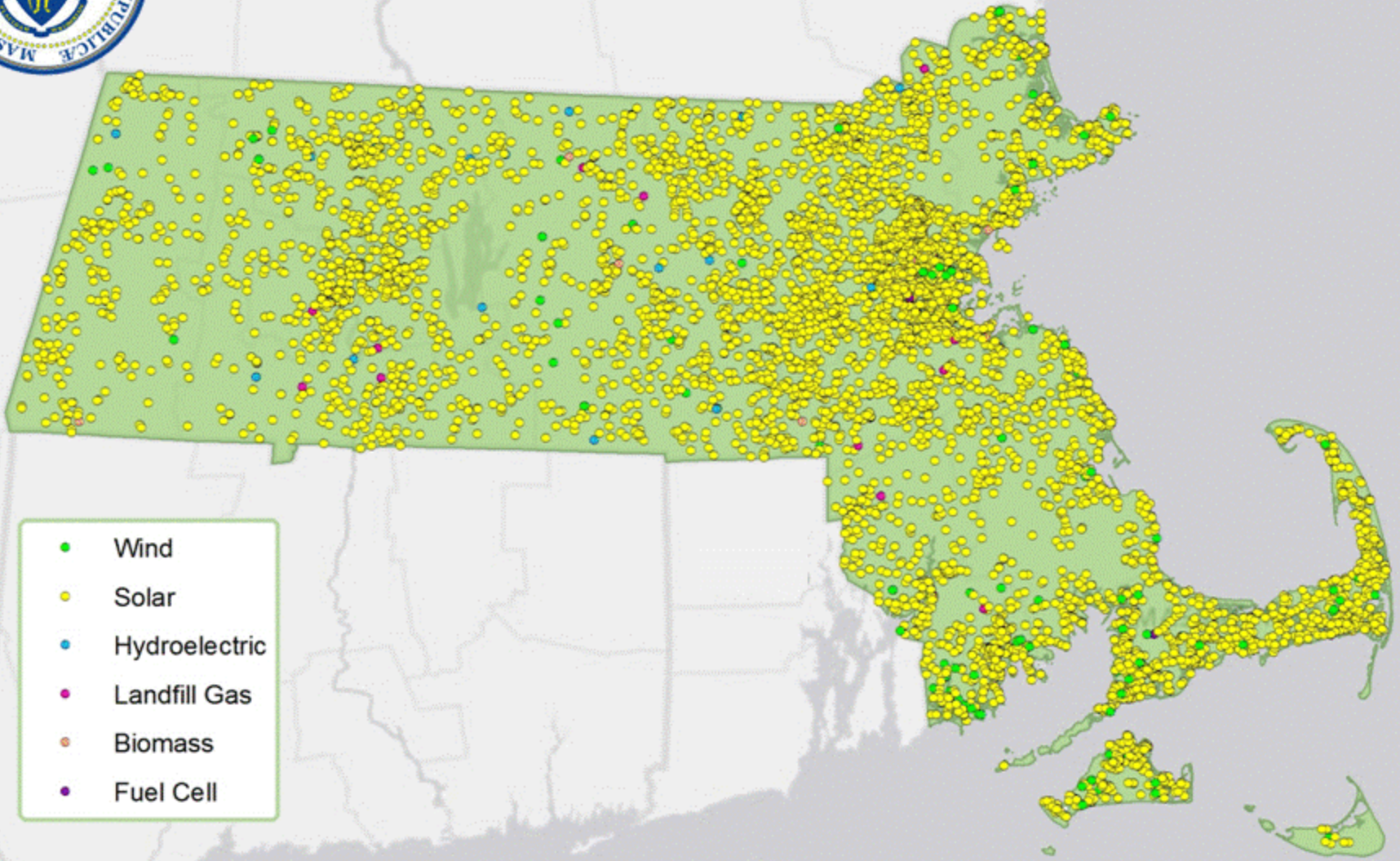
2012



- Wind
- Solar
- Hydroelectric
- Landfill Gas
- Biomass
- Fuel Cell



2013



- Wind
- Solar
- Hydroelectric
- Landfill Gas
- Biomass
- Fuel Cell

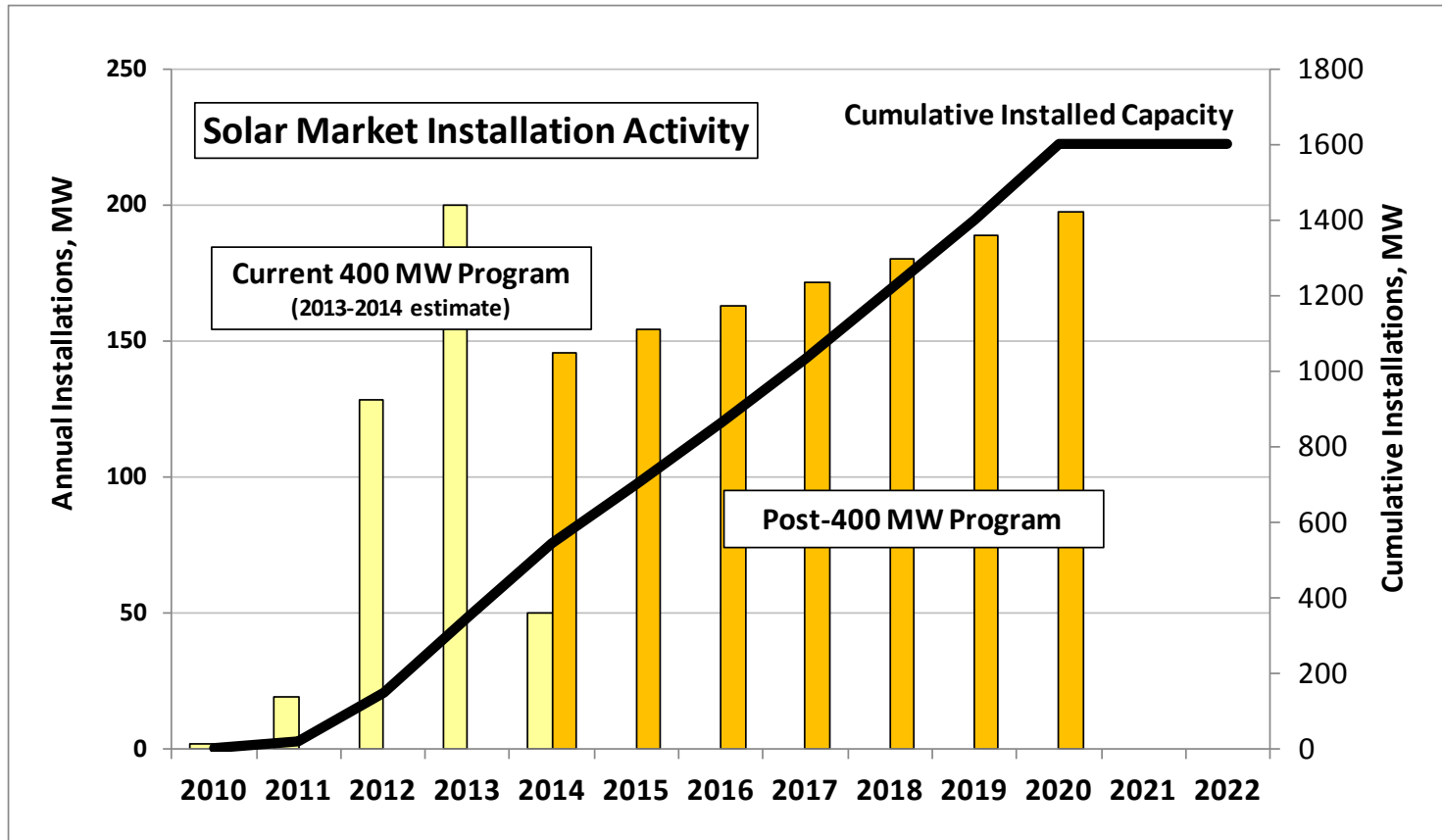
# Solar spread across the Commonwealth

- Solar is well distributed throughout MA
  - Installations in 346 of 351 MA cities/towns
  - 120+ municipalities host PV on town facilities
- **Solarize Mass** supported 9 MW of residential solar in 33 towns
  - 15 towns underway

# SunShot

- Rooftop Solar Challenge: New England Solar Cost-Reduction Partnership
  - Determine Model permitting practices across the states; encourage adoption in municipalities; potentially introduce online permitting
  - Introduce model solar zoning (this is beyond Green Communities as-of-right bylaw, this will encompass all sizes and types (building/ground) of installations)
  - Disseminate structural review guidance developed under phase I
  - Explore financing options

# Current/Projected Market Installations



- To meet Governor’s 1600 MW goal, market needs to install 140-200 MW per year between 2014 and 2020 (adjusted for final SREC-I Capacity)
- This installation rate maintains growth from 2012 installation rate, but does not sustain the accelerated market growth experienced in 2013.



# SREC-II Policy Objectives

- Provide economic support and market conditions to maintain and expand Photovoltaic (PV) installations in MA
- Control ratepayer costs
- Maintain robust, progressive growth across installation sectors and manage growth to reach 1600 MW by 2020
- Maintain competitive market of diverse PV developers, without undue burdens of entry
- Address financing barriers limiting residential and non-profit direct ownership, without compromising third-party ownership model
- Minimize regulatory complexity and maintain flexibilities to respond to changing conditions



# SREC-II: Key Design Features

- Program Cap of 1600 MW minus the capacity reached in current program (“SREC-I”) by June 30, 2014.
- Projects eligible to generate SREC-IIs for 10 years (40 quarters), with incentive declining over time through a 10-year forward schedule of Auction Prices and Alternative Compliance Payment (ACP) Rates. Units generate Class I RECs following 10 years of eligibility.
- SREC Factors differentiate financial incentives between market sectors.
- Compliance Obligation and Minimum Standard set in regulation for 2014 and 2015. Annual calculations thereafter.
  - Based on: actual and projected supply, Cumulative Installed Capacity Targets in regulation.
  - Informs next Annual Block for Managed Growth sector.

# Municipalities & SREC II

- PV development on brownfields/landfills
  - Higher SREC factor
- Residential participation facilitated
  - Financing program
  - Community Shared Solar

# Market Sectors and SREC Factors (Factors Provided in Guideline)

Market Sector		SREC Factor
A	Residential, Parking Canopy, Emergency Power Generation, Community Shared Solar, or any Unit with a capacity $\leq$ 25 kW.	1.0
B	Building Mounted, or ground mounted Unit 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	Landfill or Brownfield, or a Unit with a capacity of $\leq$ 500 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

SREC Factors subject to evaluation in 2016/2017, to accommodate market/policy changes.

# Residential Direct Ownership

## ACP-funded Support Program

- DOER estimates that a robust residential direct ownership market would need to be supported by \$20-50 million in loans annually at the start of the program, and \$300-600 million cumulatively through 2020. This volume represents a significant opportunity for the financing/banking industry.
- DOER plans to announce, in parallel with the SREC-II rulemaking, a financing support program using ACP funds. Final development of the program will be done in coordination with stakeholder input, including direct discussions with the banking industry.
- DOER anticipates using approximately \$30 million of ACP funds for this purpose. Leveraging funds will be important, along with strategies to enable banking sector to sustain lending as ACP support is diminished.
- MassCEC will maintain CommSolar II rebate program through the development of the financing program.



# SREC-II and Net Metering

- Most non-residential solar projects depend on the net metering credit incentive, along with SREC revenue
- MA market is non-uniform in the availability and value of Net Metering credits by utility territory
- DOER is cognizant of Net Metering caps being reached and impact on solar (and other renewables) economic feasibility
  - DOER currently has no policy stance on the raising of the NM caps
  - DOER has commissioned an analysis on NM policy

# SREC-II Anticipated Rulemaking Process

- RPS Class I regulation revisions for SREC-II started on January 3, 2014
- Rulemaking includes a Public Hearing on January 24, followed by review by Joint Committee on TUE
- DOER projects rule to be promulgated before the end of Q1 2014



# Solar is Working for the Commonwealth

- Residential solar PV prices dropped 28 percent in Massachusetts in 2012 – second biggest drop in the nation in 2012.
- Governor’s goal of installing 250 MW by 2017 met four years early; new goal of 1600 MW by 2020.
- Massachusetts is well ranked nationally (SEIA 2012)
  - 6<sup>th</sup> in solar capacity installed in 2012
  - 7<sup>th</sup> in cumulative installed capacity
  - 3<sup>rd</sup> in commercial installations; 6<sup>th</sup> in residential installations
  - 2<sup>nd</sup> lowest weighted average commercial installation costs
  - 4<sup>th</sup> in total solar jobs; 8<sup>th</sup> 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*).



# Thank you!

**Bram Claeys**

Deputy Director

Renewable & Alternative Energy Division

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Massachusetts Department  
of Energy Resources