



# **NASEO: Smart Electric Power Panel**

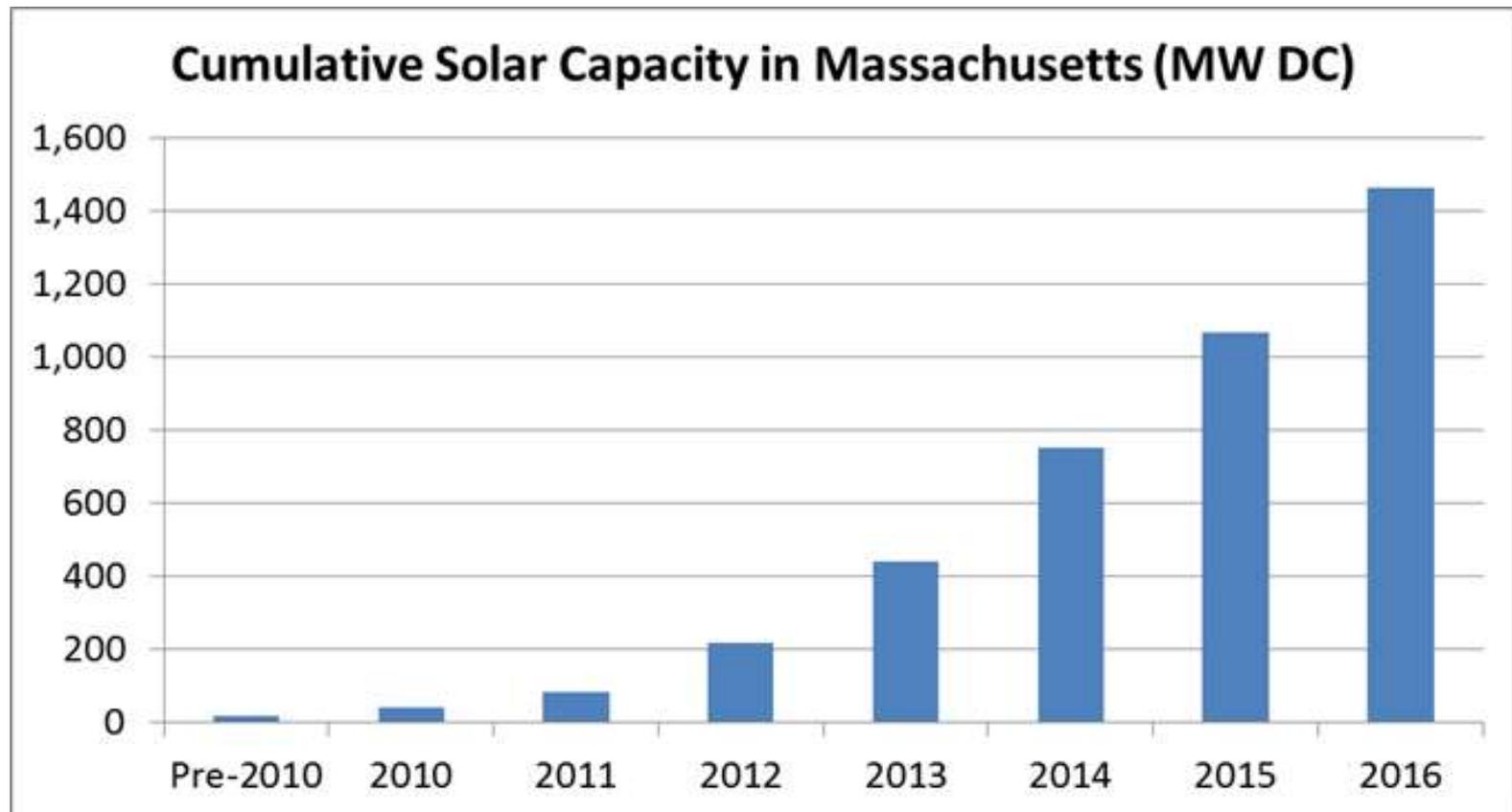
## **Solar, Storage, Demand Response and EVs**

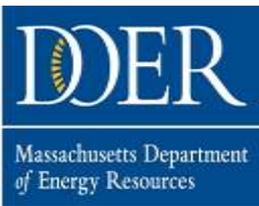
DOER Commissioner Judith Judson

2/8/2017

# Massachusetts is a National Leader in Solar

- Over 65,000 Solar Projects = 1,400 MW of Solar operating
- Another 400 MW in planning and construction





# SMART – Solar Massachusetts Renewable Target

**Governor Baker signed legislation in 2016 directing DOER to develop a new incentive program that creates a stable and equitable solar market at a reasonable cost to ratepayers.**

## **4 Major Objectives of New Program**

1. Cost Reductions for Ratepayers
2. Protect Land Conservation as Solar Deployment Grows
3. Develop an Additional Option for Solar Development when Net Metering Caps are Hit
4. Provide an Orderly Transition with Minimal Market Disruption

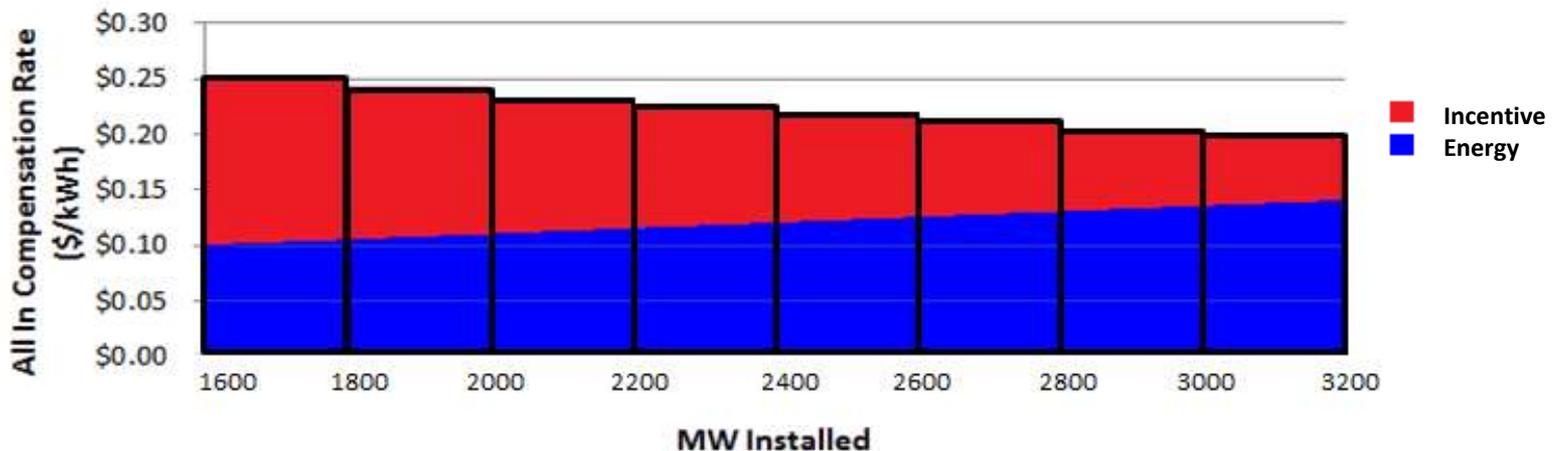
## **Robust Stakeholder Process to Develop Next Program**

- Over 40 stakeholder meetings

# SMART – Solar Massachusetts Renewable Target Design Details

- **DOER released SMART – Solar Massachusetts Renewable Target – on January 31**
  - Declining block program
  - 1600 MW program with 8 x 200 MW blocks declining by 4%
  - Developer receives 10-20 year “all in” fixed price for **long-term financing predictability**
- Doubles the amount of solar for **half the cost to ratepayers**

Illustrative Declining Block Model



# Energy Storage Initiative

- **\$10 million** initiative launched in 2015
  - *State of Charge* study
  - Demonstration projects
- Robust stakeholder engagement
- Study details:
  - Technology and market landscape
  - Comprehensive modeling of the cost and benefits of deploying storage
  - Economic use cases of specific storage applications
  - Economic development opportunities
  - Policy and program recommendations to grow storage deployment and industry in MA

***“Massachusetts will continue to lead the way on clean energy, energy efficiency, and the adoption of innovative technologies such as energy storage.”***

- Governor Baker, Feb 2016, Accord for a New Energy Future Press Event

***“Given the recent advances in energy storage technology and cost-effectiveness, it is hard to imagine a modern electric distribution system that does not include energy storage.”***

Utility stakeholder perspective

# Storage In Commodity Supply Chains



## FOOD

Warehouses  
Grocery stores  
Freezers & refrigerators



## WATER

Reservoirs  
Above-ground tanks  
Water bottles



## GASOLINE

Underground tanks  
Above-ground tanks  
Tank trucks  
Portable fuel tanks



## OIL

Above-ground tanks  
Piping



## NATURAL GAS

Depleted fields  
Aquifers  
Salt caverns  
Pipelines  
Above-ground tanks



## ELECTRICITY

Energy Storage Technologies

**Currently less than 1% of daily electricity consumption for MA**

Storage capacity more than 10% of daily consumption

The electricity market has a fast “speed of light” supply chain and the least amount of storage. This lack of storage creates a need for additional infrastructure to maintain market reliability.

# Demand Response

## Massachusetts has been ranked #1 for Energy Efficiency for 6 Years

- DOER works with our utility partners to develop aggressive Three Year Energy Savings Plans
  - The current 2016-2018 Plan prioritized demand response for the first time.
  - Utilities are demonstrating peak demand projects including:
    - Commercial - small business wifi thermostats, software and controls, thermal storage, BTM batteries, and economic curtailment
    - Residential - wifi thermostats, behavior, and BTM batteries
- DOER has a \$4.5 Million Peak Demand Reduction Grant Program
  - Projects funded through this grant program will utilize a broad range of technologies including:
    - Battery storage at the substation, commercial and residential levels
    - Thermal storage
    - Device controls for residential and commercial customers
    - Off-peak charging for electric vehicles

# Electric Vehicles

**Massachusetts has a goal of 300,000 ZEVs by 2025**

## **Massachusetts Offers Rebates – Electric Vehicles (MOR-EV)**

Up to \$2,500 rebate for eligible electric vehicles

## **MassEVIP: Workplace Charging**

- Grant program for employers to install electric charging stations

## **Plug In America Pilot**

- Partnership with New England states to host public and employer sponsored EV test drive events

## **Electric School Bus Pilot**

- DOER awarded grants to 4 Massachusetts school districts to purchase an electric school bus and charger



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# Thank You!

