

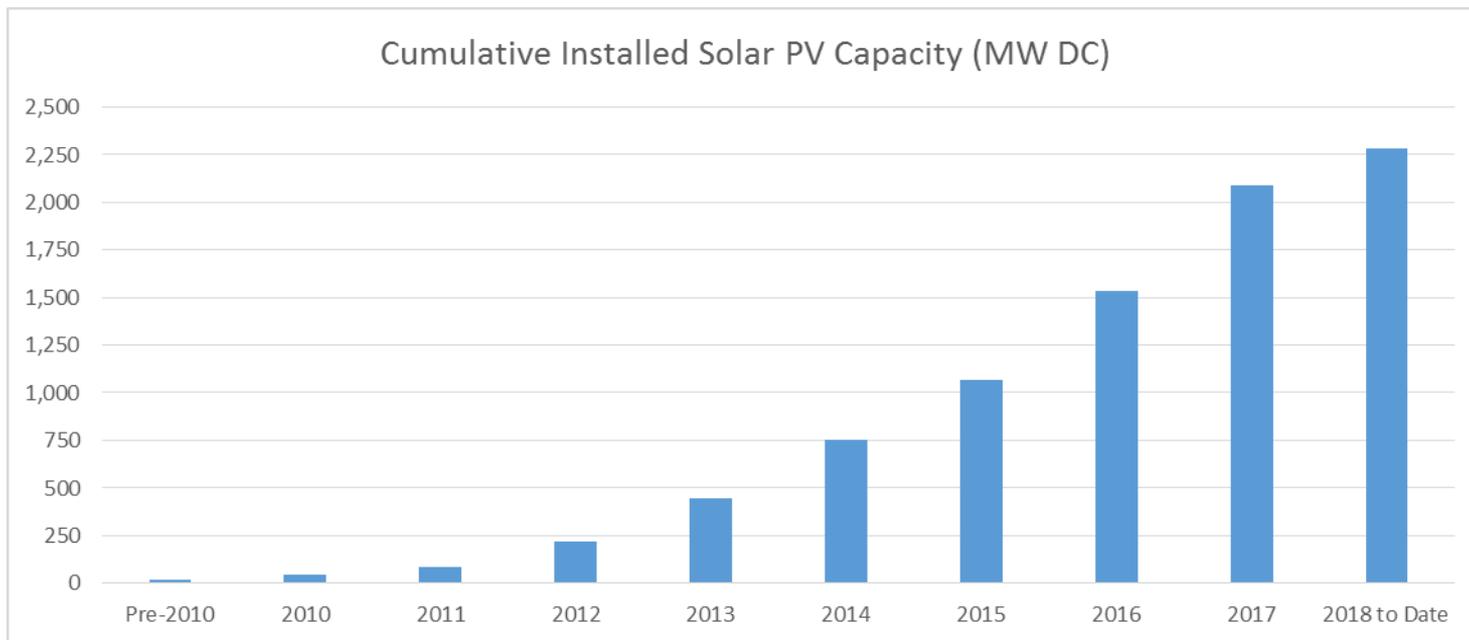


RESTRUCTURING ROUNDTABLE
Forging Sustainable Solar (and Storage) Incentives
for New England

DECEMBER 14, 2018

MASSACHUSETTS DEPT. OF ENERGY RESOURCES
COMMISSIONER JUDITH F. JUDSON

NATIONAL LEADER IN SOLAR



89,000+ installed projects, 2,300+ MW DC

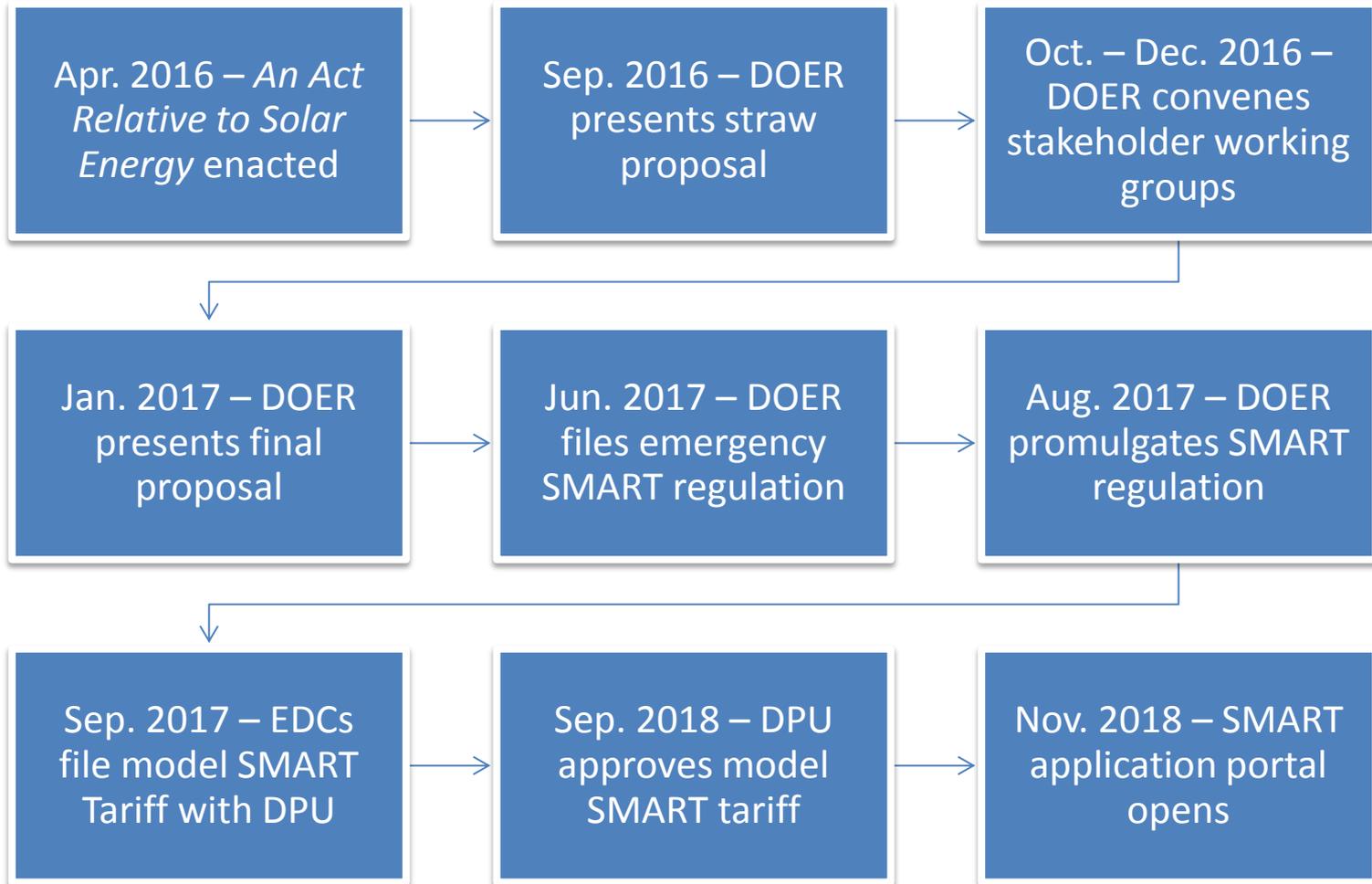
Solar in all 351 cities and towns

NEW SOLAR INCENTIVE PROGRAM



- November 26th – start date for SMART
- Long term certainty with 10 – 20 years of fixed revenue streams
- Alternative on-bill credit mechanism
- Incentives for projects on brownfields, landfills, parking lots, rooftops
- 1st in the nation – solar + storage incentive
- \$4.7 billion in cost savings to ratepayers when compared to previous solar programs

SMART IMPLEMENTATION TIMELINE



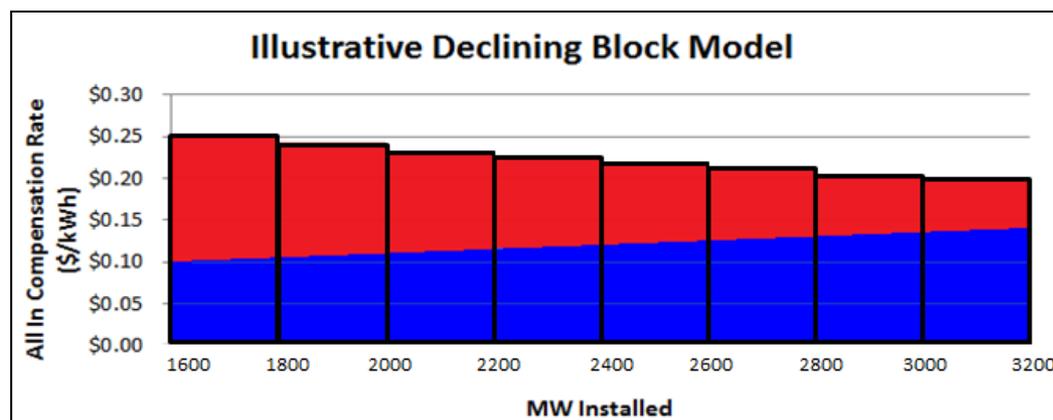
SMART INITIAL APPLICATION STATISTICS

2,850+ applications for over 640 MW of capacity submitted so far

	# of Applications	Capacity
Large: >25kW AC	474	626 MW
Small: <=25 kW AC	2,377	18 MW
TOTAL	2,851	644 MW

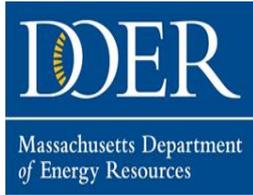
Block capacity

- Small projects: Block 1 for all service territories
- Large projects:
 - Eversource West: Waitlist
 - Unitil: Waitlist
 - National Grid: Block 7
 - Eversource East: Block 1
 - Nantucket: Block 1



Adders and Subcontractors

- Location Based
 - 62% of large projects (19% of capacity) applied for a location adder
 - i.e. rooftop, parking lot canopy, landfill, brownfield, etc.
 - 13% of large projects have subcontractors
- Off-taker Based
 - 58% of large projects (74% of capacity) applied for off-taker adders
 - i.e. community shared, low income community shared, low income property, public entity
 - Majority are Community Shared Solar facilities
- Energy Storage
 - 135 projects with approximately 70 MW/150 MWh of Energy Storage
 - More projects applied for storage adder but did not yet have signed ISA, so it is likely additional projects will add storage



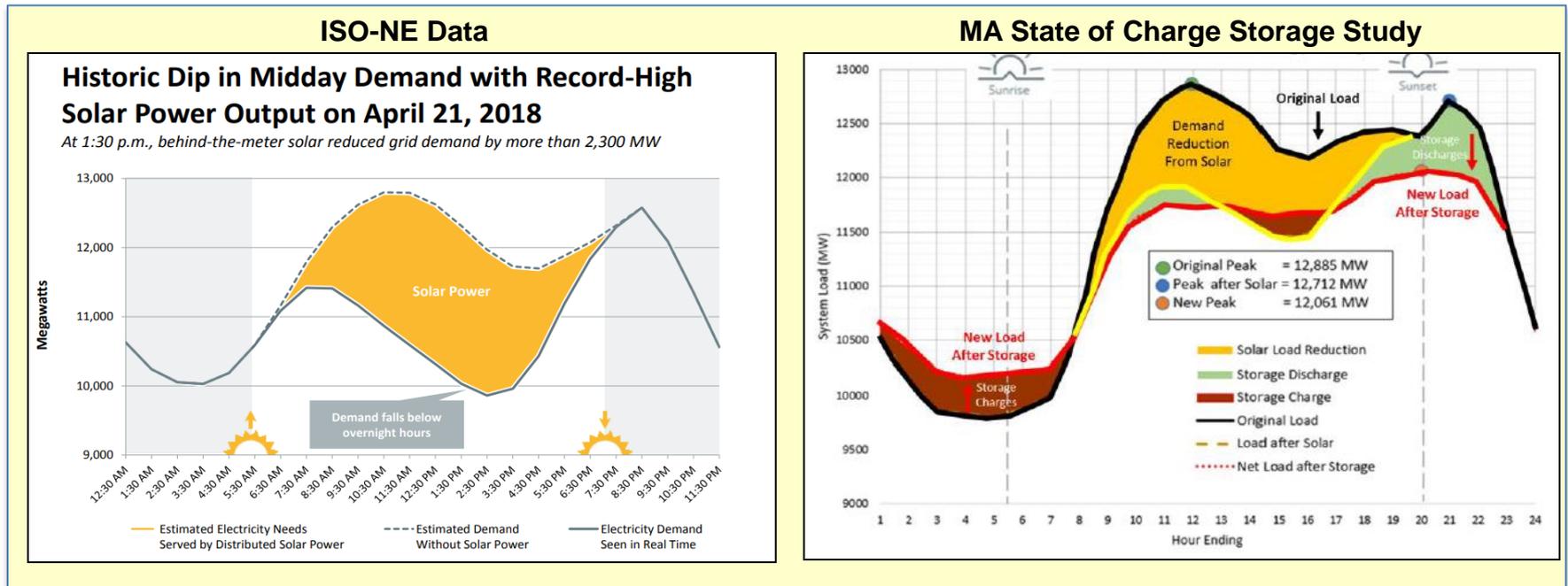
SMART NEXT STEPS

- Post-information on project queue order
- Begin discussion with stakeholders on 400 MW Program Review
 - Land use
 - Project diversity
 - Geographic Diversity and Block availability
 - Accessibility of program to low income and environmental justice communities
 - Other administrative fixes
- Pending proceedings at DPU
 - Utility compliance tariffs, SMART cost recovery
 - DPU 17-146
 - Net-metering and capacity rights for solar projects paired with storage

OTHER SOLAR POLICY ISSUES

Challenges Associated with High Solar Penetration – “Duck Curve”

- After SMART is completed, over 4,000 MW of solar in MA
- MA has peak load of approximately 12,000 MW and minimum daytime load of approximately 6,000 MW
 - By 2022/2023, solar may meet 1/3 of peak load and 2/3 of min daytime load

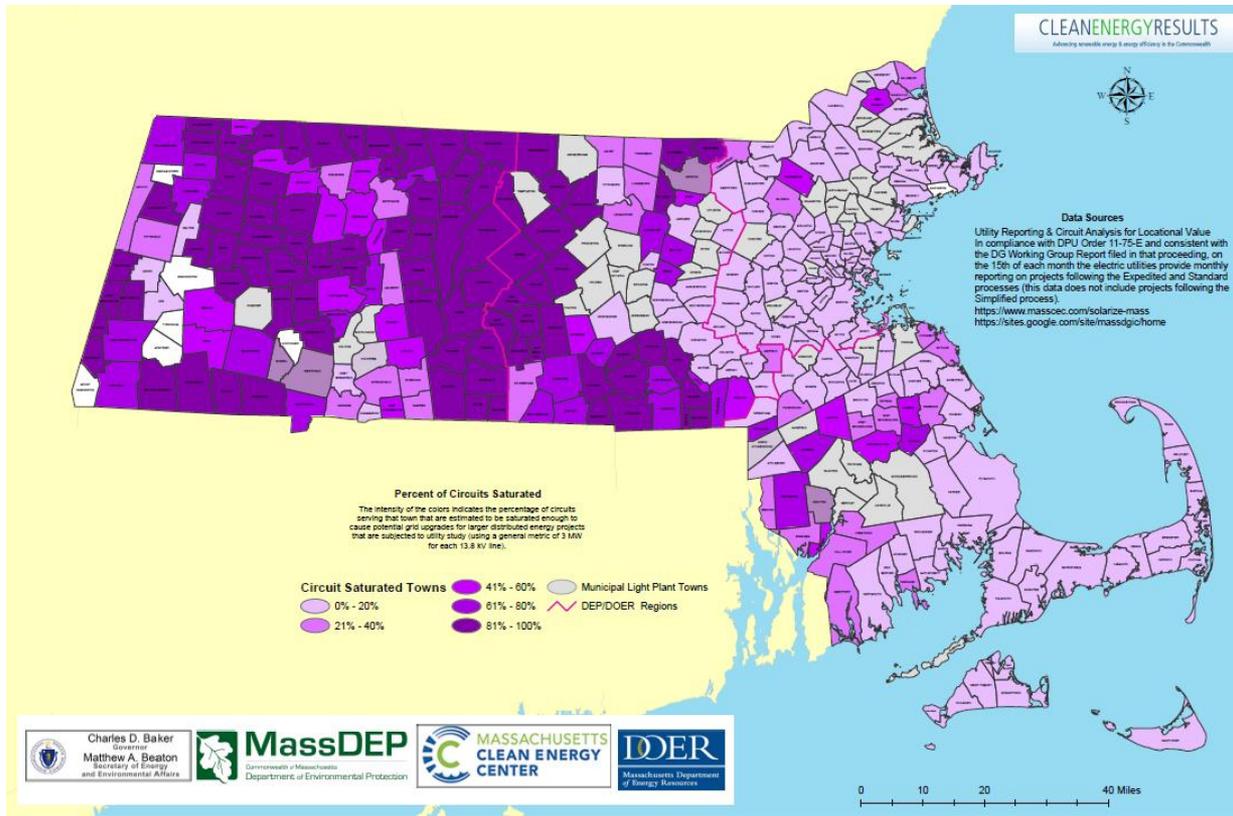


Pairing of solar and storage will continue to be an important objective

OTHER SOLAR POLICY ISSUES

Challenges Associated with High Solar Penetration - Interconnection

- Nearly all solar in MA is connected to distribution system, which is reaching saturation points in certain areas
- Interconnection costs and timelines have become significant challenges for continued solar development

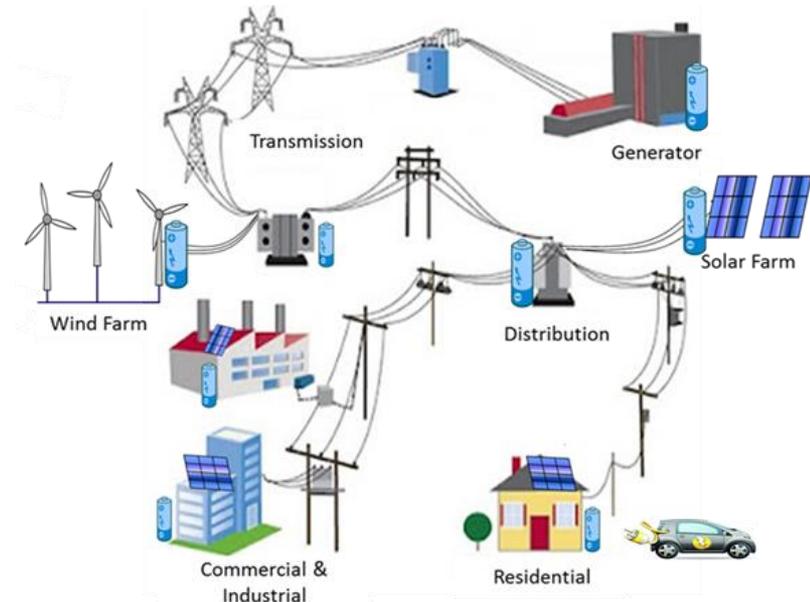


PAIRING SOLAR WITH STORAGE

- *State of Charge* report found that solar paired with storage results in many benefits, including:
 - Increasing on-site consumption
 - Reducing reverse power flow
 - Mitigating distribution system upgrade costs
 - Shifting solar energy production to peak
 - Frequency/voltage regulation
 - Improved power quality
- Future programs should continue to promote solar + storage to make solar more dispatchable and improve its ability to address new peak periods, interconnection costs, and reduce on-site load

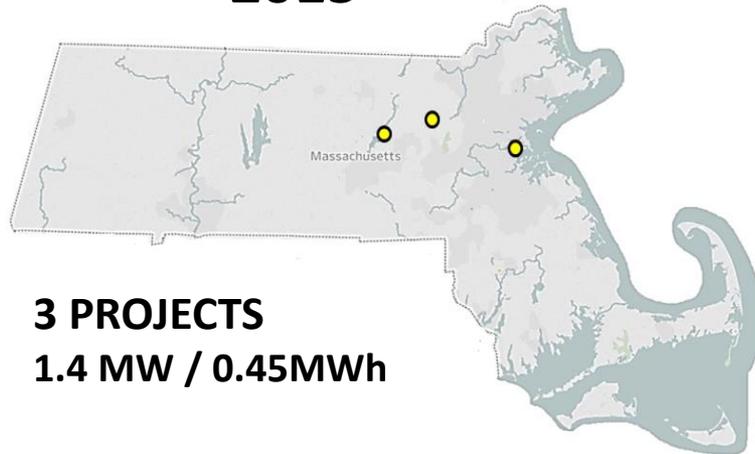
POLICY SUPPORT FOR ENERGY STORAGE

- **Over \$60 million in grants for demonstration projects**
 - Energy Storage Initiative
 - Clean Energy Resiliency Initiative
 - Peak Demand Reduction Grants
- **Storage adder in SMART program**
- **DPU approval of utility owned storage investments**
- **Inclusion in Green Communities Program**
- **Inclusion in 2019-2021 three-year EE plan**
- **Clean Peak Standard**



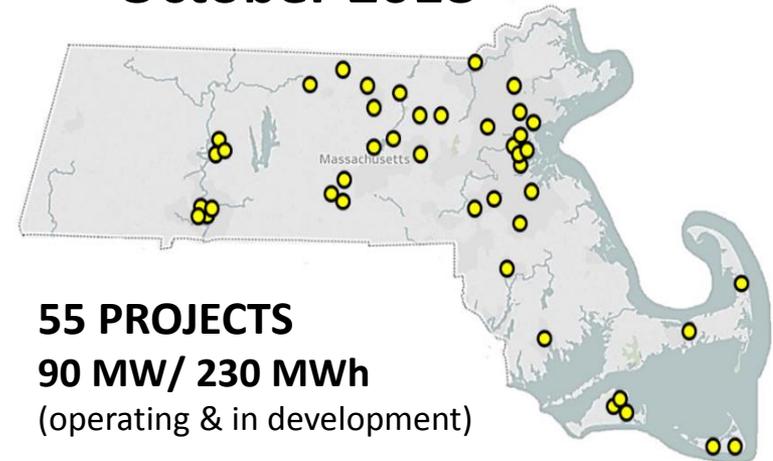
MASSACHUSETTS ENERGY STORAGE SUCCESS

2015



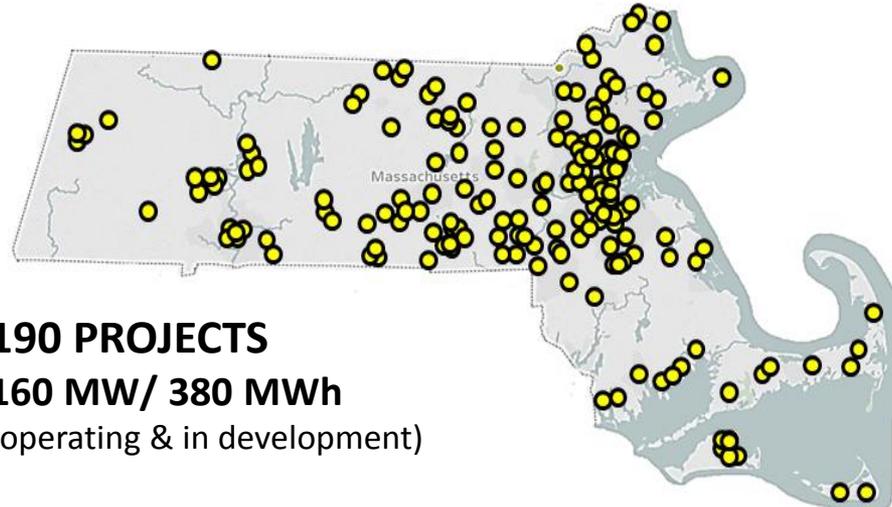
3 PROJECTS
1.4 MW / 0.45MWh

October 2018

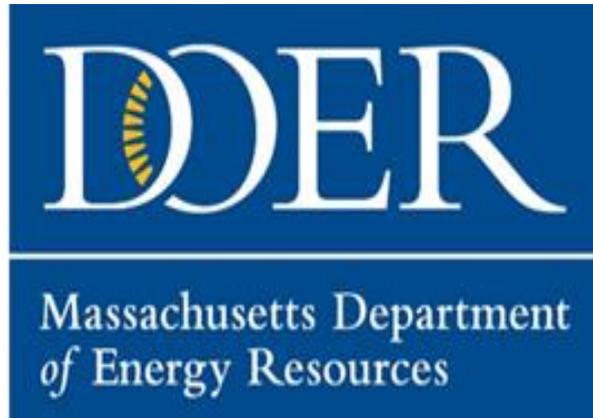


55 PROJECTS
90 MW / 230 MWh
(operating & in development)

December 2018 with launch of SMART



190 PROJECTS
160 MW / 380 MWh
(operating & in development)



THANK YOU