

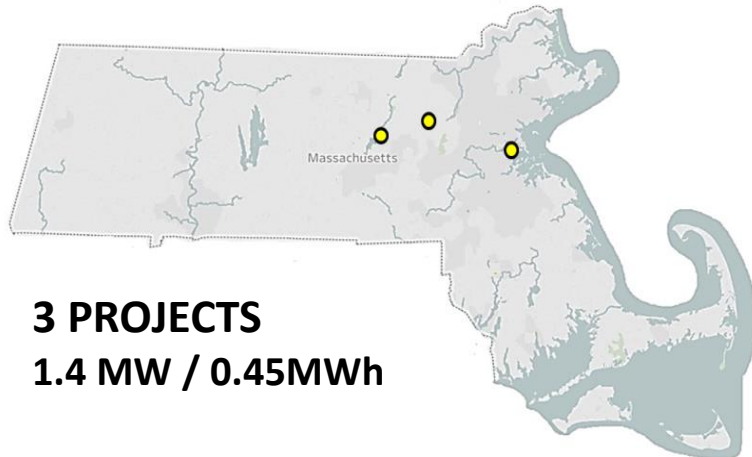
THE EVOLVING LANDSCAPE FOR ENERGY STORAGE
NASEO 2019 ANNUAL MEETING
SEPTEMBER 17, 2019

MASSACHUSETTS DEPARTMENT OF ENERGY RESOURCES
DEPUTY COMMISSIONER JOANNE MORIN

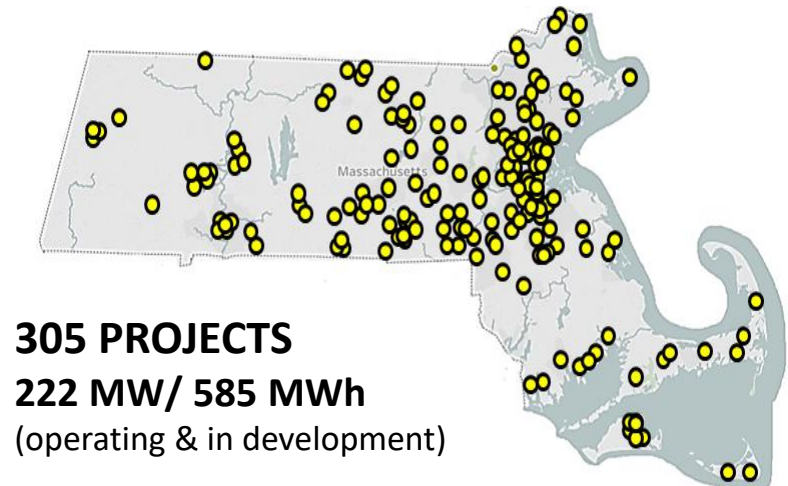
MASSACHUSETTS ENERGY STORAGE SUCCESS

Since launching our **Energy Storage Initiative** in 2015, Massachusetts has become a national leader for policies and programs for storage deployment

2015



2019



NEW SOLAR INCENTIVE PROGRAM



- **1st in the nation – solar + storage incentive**
- Launched November 2019
- Storage compensated via
 - variable adder based on ratio of storage to solar capacity
 - Duration of storage
- 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
- \$4.7 billion in cost savings to ratepayers when compared to previous solar programs

ACTIVE DEMAND REDUCTION AS PART OF ENERGY EFFICIENCY

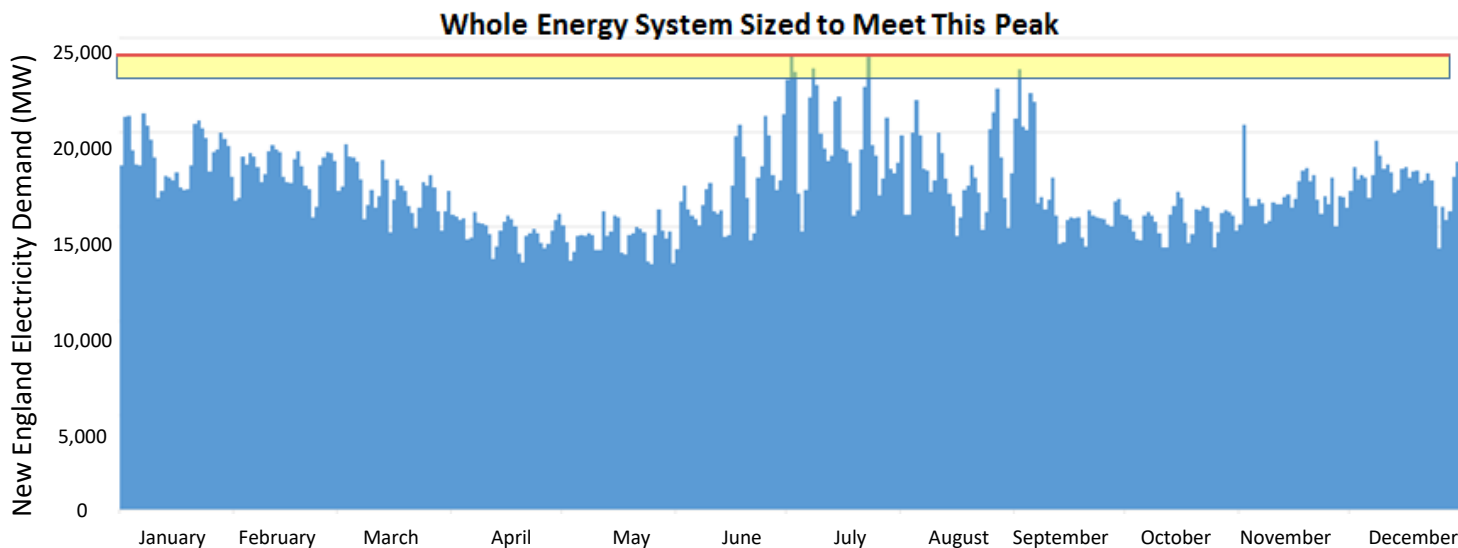
New Statewide Active Demand Reduction

Programs include residential direct load control, energy storage, C&I load curtailment

New **shareholder performance incentive** for utilities for active demand benefits

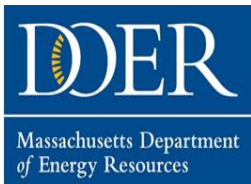
Statewide Goal	2019-2021
Summer MW Total	693
Winter MW Total	544
Active Summer MW	200
Active Winter MW	50

\$200/kW-summer with 5-year contract available to Energy Storage



In 2015 :
The top 1% of Hours accounted for 8% of MA Spend on Electricity

Top 10% of Hours accounted for 40% of Electricity Spend



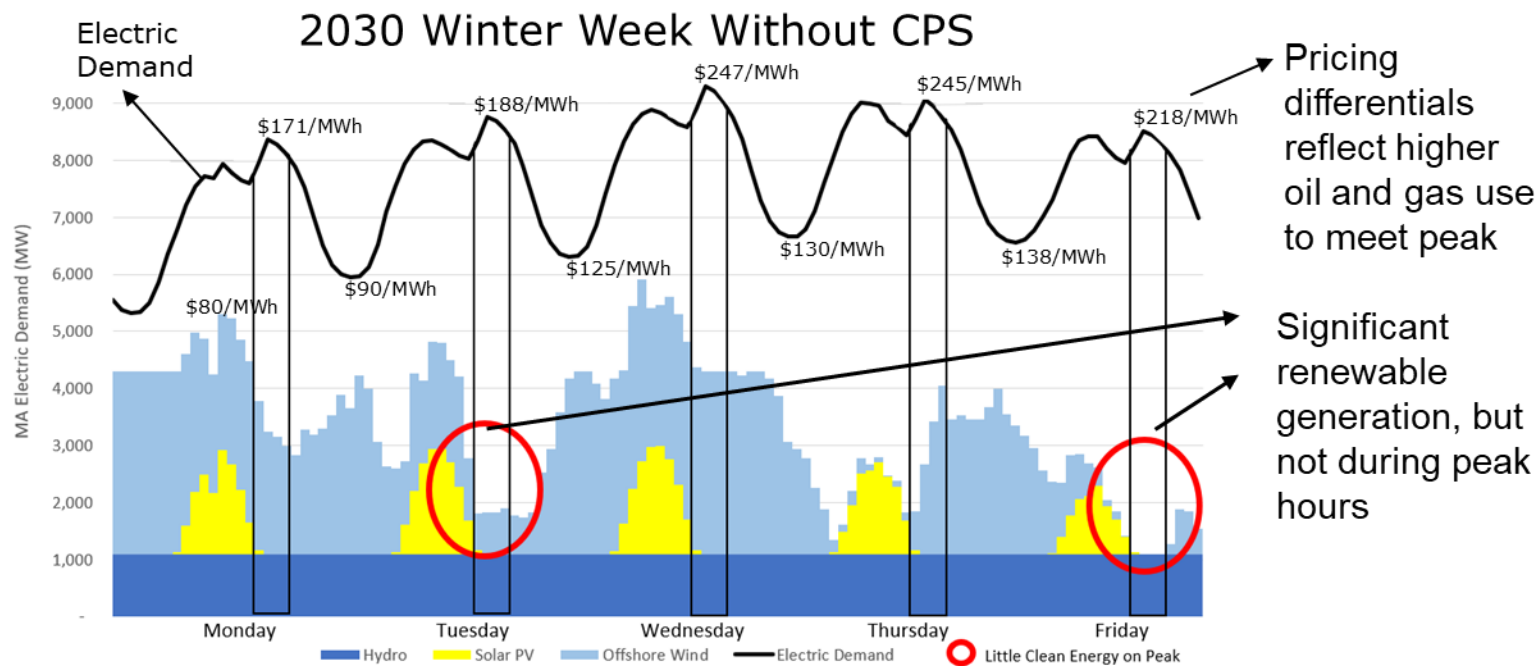
CLEAN PEAK STANDARD

2018 legislation tasked DOER with establishing a Clean Peak Standard (CPS)

- First in the nation program of its kind
- CPS incentivizes use of clean technologies – storage, renewables, demand response – during times when costs and emissions are at their highest
- Current MA RPS are designed to increase clean energy without regard to when it is delivered to the grid

STATUS QUO CHALLENGE TO RESOLVE

- By 2030, Massachusetts will have a substantial clean energy, however generation will not necessarily coincide with peak demands. The highest cost and emissions hours are not being addressed.
- Massachusetts will remain dependent on gas and oil generation to meet our peak demand, resulting in high costs and emissions, despite our substantial investment in clean energy resources



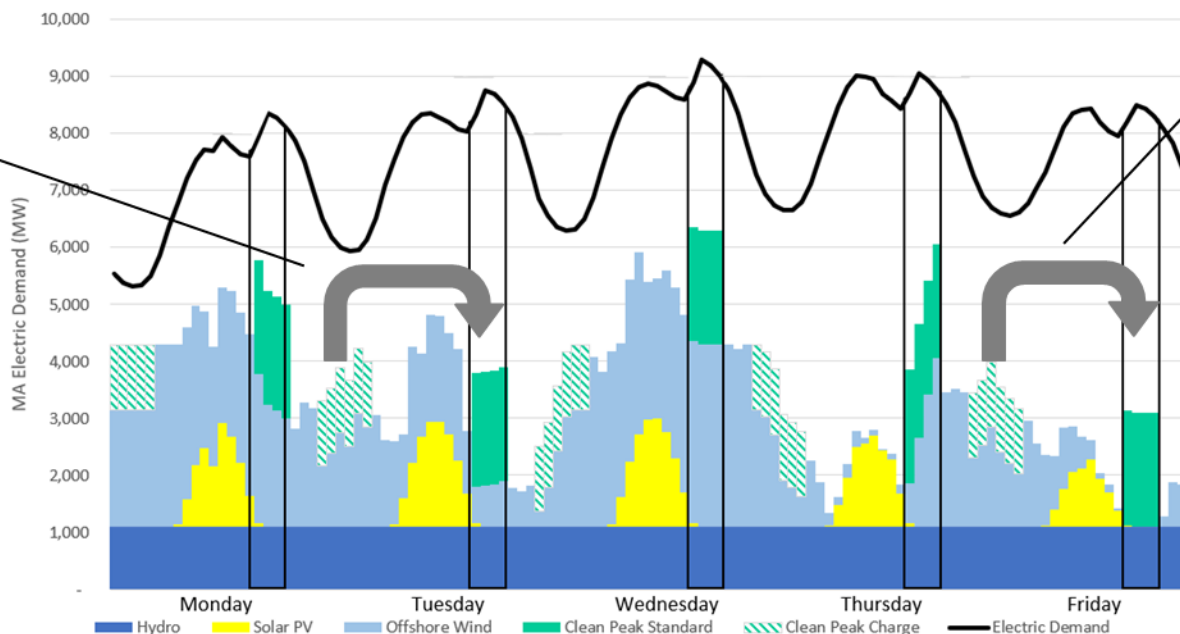
Production profile for 1,090 MW Hydro, 3,200 MW Offshore Wind, 5,000 MW Solar PV

CLEAN PEAK AS A SOLUTION

- The CPS will send a market signal to clean energy generation to invest in storage technologies to deliver energy to load users to reduce demand during peak periods, thereby reducing the emissions and costs associated with these periods

2030 Winter Week With CPS

Opportunity to shift clean energy to peak periods through storage



CPS shifted wind energy generated overnight when prices and demand are lower to evening peak when demand is high

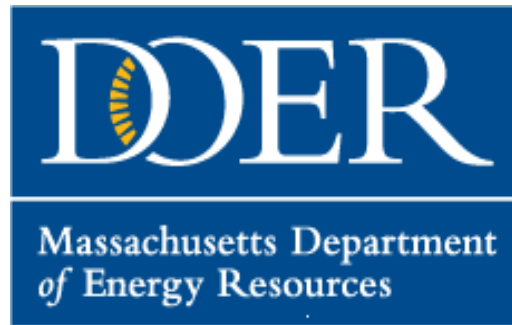
Production profile for 1,090 MW Hydro, 3,200 MW Offshore Wind, 5,000 MW Solar PV

BACKGROUND: PROGRAM STRUCTURE

- The CPS program structure is consistent with DOER's other portfolio standards
 - Qualified **Clean Peak Resources** are eligible to generate **Clean Peak Energy Certificates (CPECs)** during **Seasonal Peak Periods**
 - Multipliers align CPEC generation with policy objectives
 - The **minimum standard obligation** is applied to all retail electricity suppliers and is set as a percentage of total retail sales
 - Annual obligation on suppliers must increase by at least 0.25% per year, by statute
 - Retail load served under contracts executed prior to 1/1/19 is exempt from obligation
 - **Alternative Compliance Payment** rate creates a cost cap and helps establish market value for CPECs

ELIGIBLE RESOURCES: PROJECT ELIGIBILITY CRITERIA

- Four types of eligible resources:
 1. **New RPS Class I** eligible resources in operation on or after 1/1/19
 2. **Existing RPS Class I / Class II resources that are paired with a Qualified Energy Storage System**
 3. **Qualified Energy Storage Systems** operating to primarily store and discharge renewable energy
 4. **Demand Response Resources**
- Resources must be interconnected with the Distribution System or Transmission System in the Commonwealth of Massachusetts. Resources interconnected with the Transmission System must be delivered to the Commonwealth of Massachusetts
- Resource performance must be directly measurable and verifiable



**FOR FURTHER INFORMATION ON THE CLEAN PEAK
STANDARD**

**[HTTPS://WWW.MASS.GOV/SERVICE-DETAILS/CLEAN-
PEAK-ENERGY-STANDARD](https://www.mass.gov/service-details/clean-peak-energy-standard)**

**[HTTPS://WWW.MASS.GOV/FILES/DOCUMENTS/2019/08/07/DRAFT%20C
PS%20REG%20SUMMARY%20PRESENTATION%208.6.PDF](https://www.mass.gov/files/documents/2019/08/07/draft%20CPS%20REG%20SUMMARY%20PRESENTATION%208.6.pdf)**

THANK YOU