



MASSACHUSETTS  
CLEAN ENERGY  
CENTER®

# Advancing Commonwealth Energy Storage (ACES) Program: Initial Findings

Presented By

MassCEC Net Zero Grid Team

## OUR MISSION

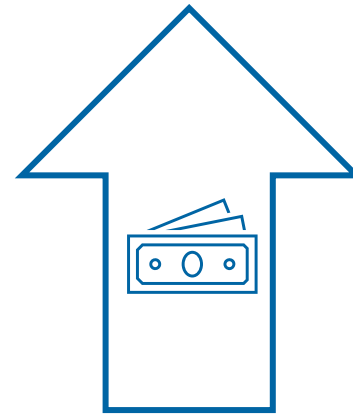
Accelerate the clean energy and climate solution innovation that is critical to meeting the Commonwealth's climate goals, advancing Massachusetts' position as an international climate leader while growing the state's clean energy economy.



# YEAR 1 SAVINGS AND REVENUES: REPORTING FROM OPERATIONAL PROJECTS

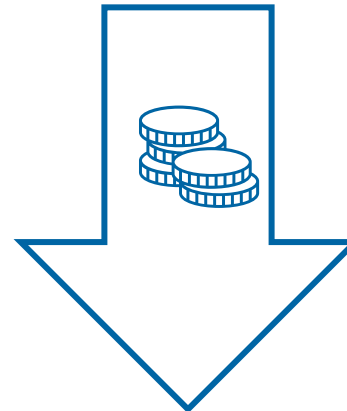
Anticipated: **\$2.06 million**

Actual: **\$2.73 million**



More \$ than expected

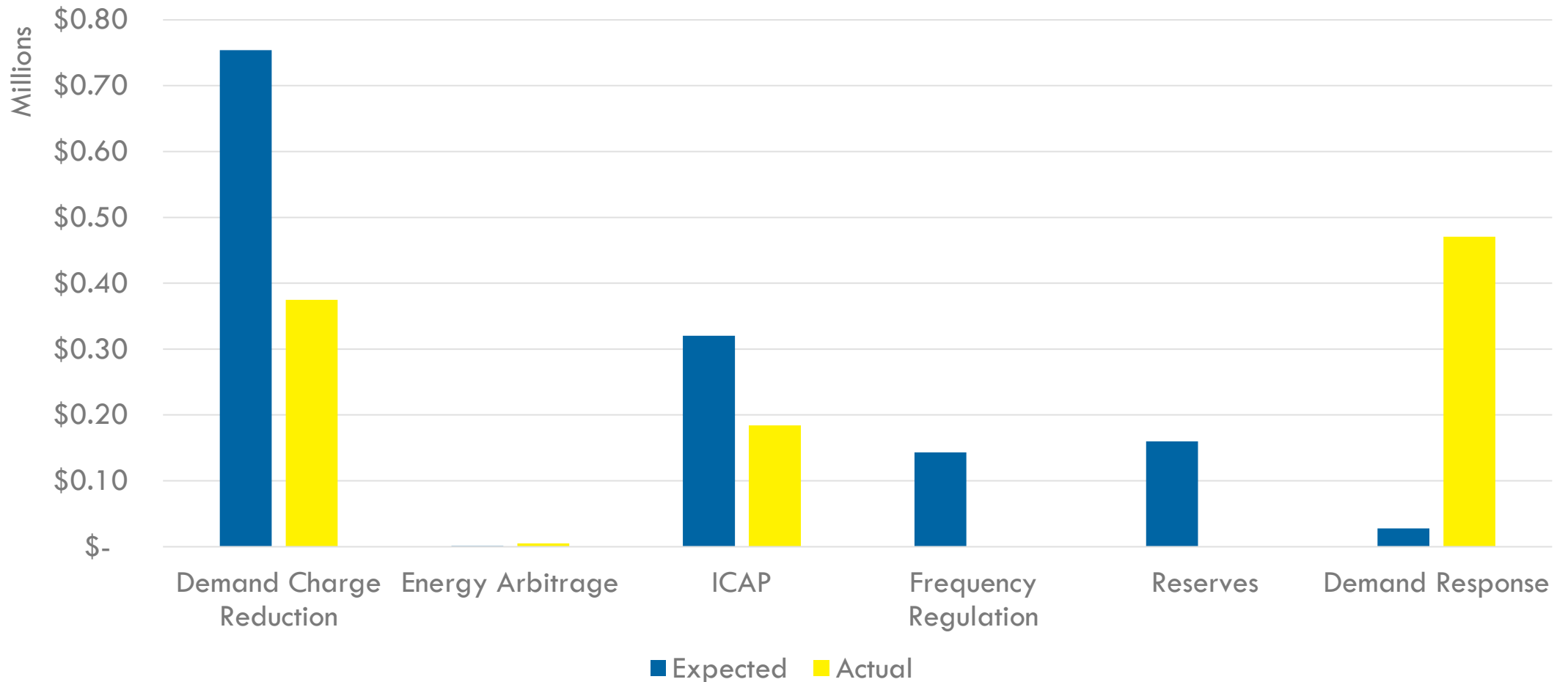
- Demand response (Connected Solutions)
- RNS fee reduction
- Energy arbitrage

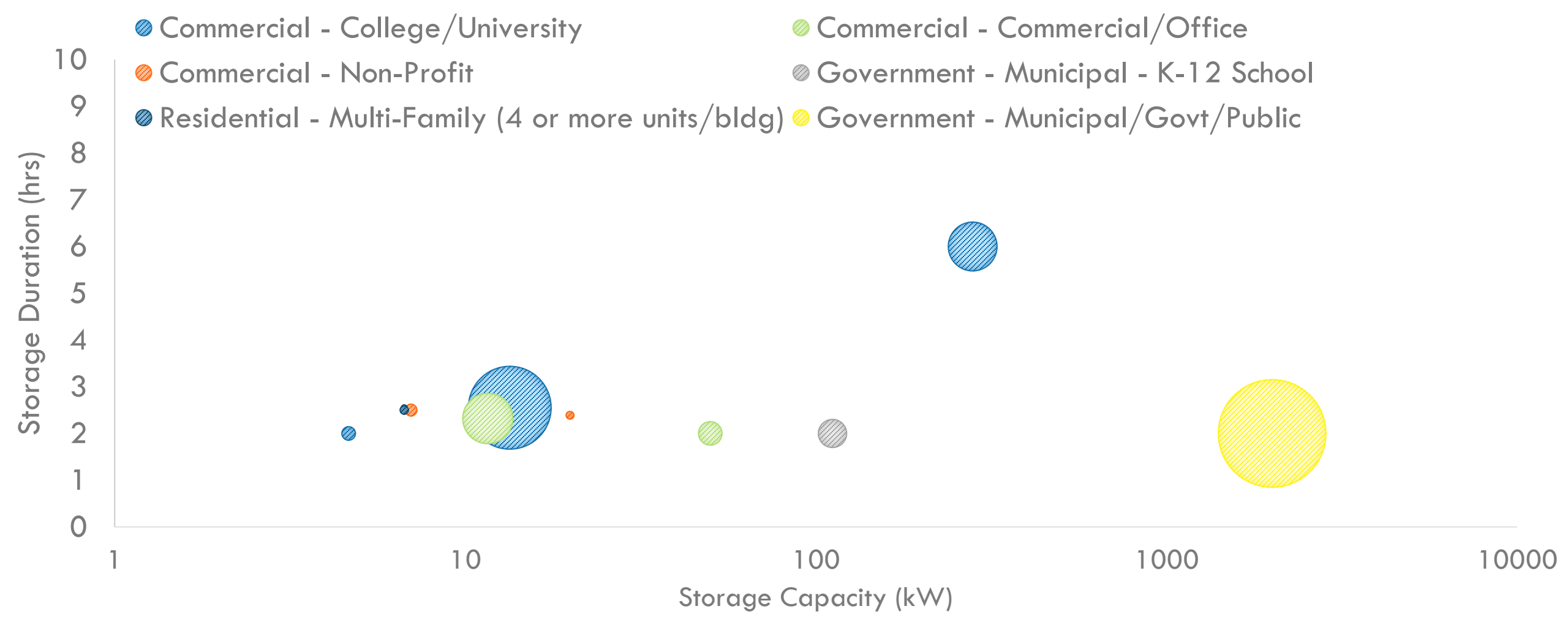


Less \$ than expected

- Frequency regulation
- Demand charge reduction
- ICAP tag reduction

# ACES: ANTICIPATED VS. ACTUAL REVENUES FOR BEHIND-THE-METER PROJECTS





# SOLAR + STORAGE

C&I, Large Residential, and Public Projects in SMART

# FREQUENCY REGULATION CHALLENGES

Several awarded projects proposed participating in the **ISO-NE Frequency Regulation Market**.

However, **no awarded projects** have pursued this revenue stream in practice.

One ACES awardee found that market participation was **technically feasible, but financially unattractive**.

Upfront costs associated with market participation and compliance too high compared to projected revenue

- ISO-NE requires hardware & software for real-time control and dispatch registration fees, and market participation fees costs (est. \$27,000-\$30,000)
- Significant issue for smaller systems
- Outlined in ISO-NE Operating Procedures (OP-14 and OP-18)

Additionally, the hourly commitment associated with participation could interfere with other revenue streams.

# DEMAND CHARGE REDUCTION OPPORTUNITIES

**Effective price signals** and **visibility on system data** are required for storage to reduce demand during system-wide peaks, resulting in host site savings and ratepayer benefits

**Front-of-the-meter, standalone** systems are still rare except in municipal lighting plant territory. For **behind-the-meter** systems, rate design is key.

ACES project success enabled by:

- Host site's unique rate design - charged based on coincident demand during regional peak hour
- Discharge strategy – informed by forecasting based on historical data on system peaks

Peer sites often unable to pursue savings:

- Charged based on non-coincident, facility peak demand during 9 – 13 hour weekday windows
- Systems unable to reduce demand effectively across many hours