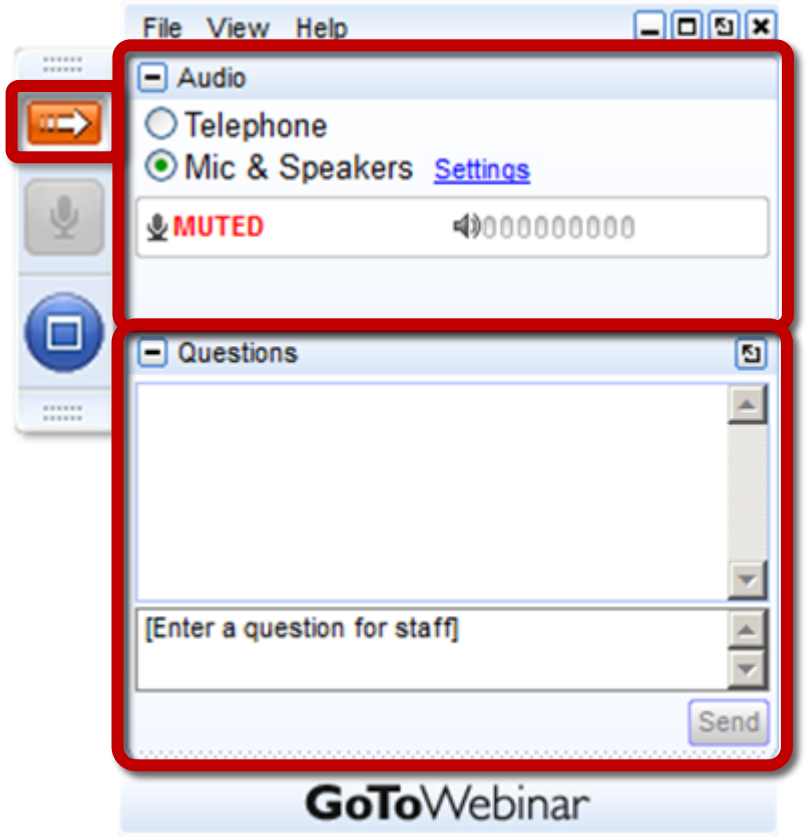
Energy Storage Policy Best Practices from New England

August 26, 2021

WEBINAR LOGISTICS



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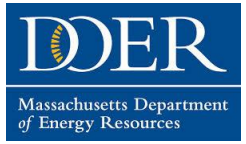

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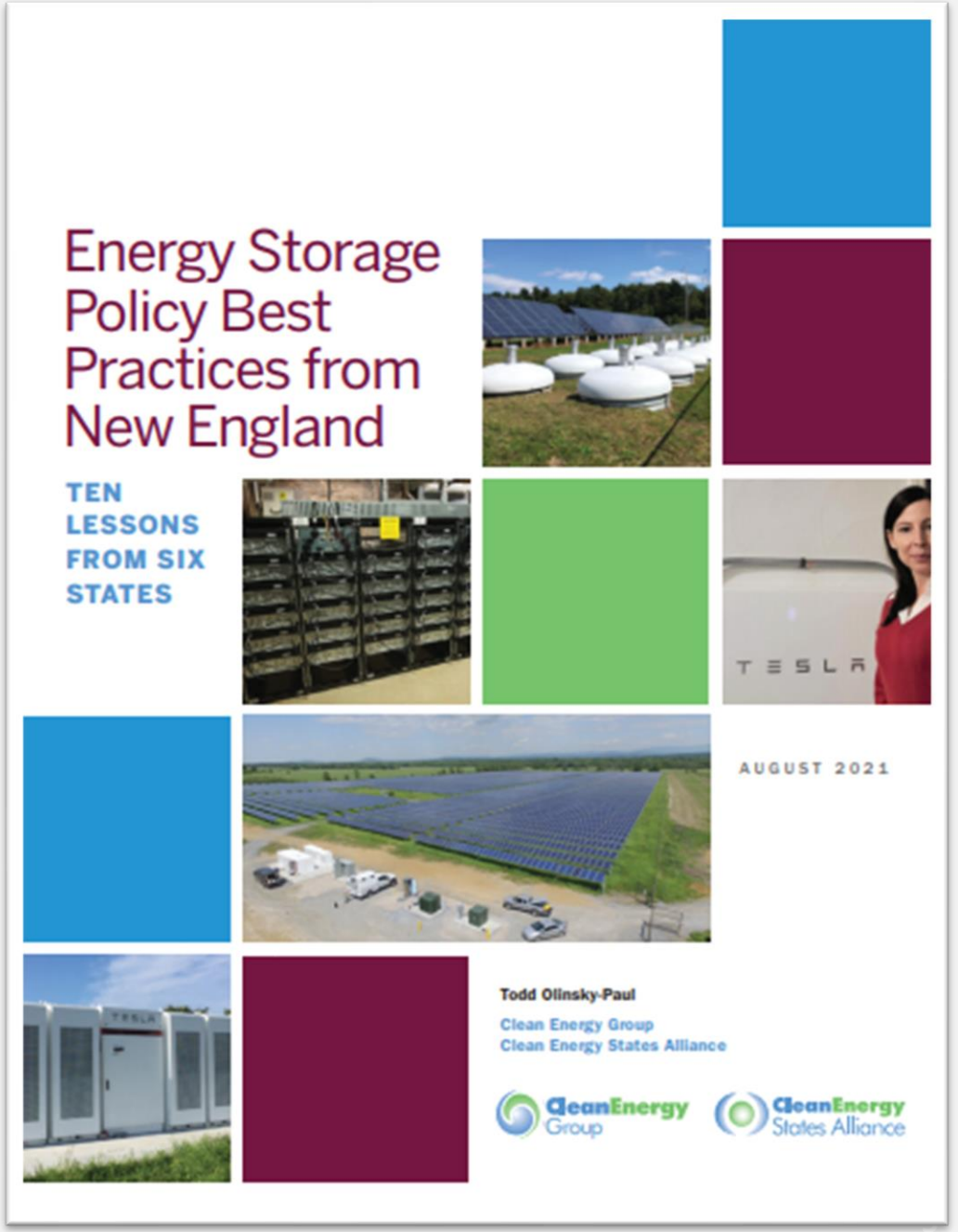
Energy Storage Policy Best Practices from New England:

Ten Lessons from Six States

August 2021

Todd Olinsky-Paul
Clean Energy Group
Clean Energy States Alliance

https://www.cesa.org/resource-library/resource/energy-storage-policy-best-practices-from-new-england/



WEBINAR SPEAKERS

Todd Olinsky-Paul
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Shelley Robbins
Project Director, Clean Energy Group (moderator)

Energy Storage Policy Best Practices from New England:
Ten Lessons from Six States

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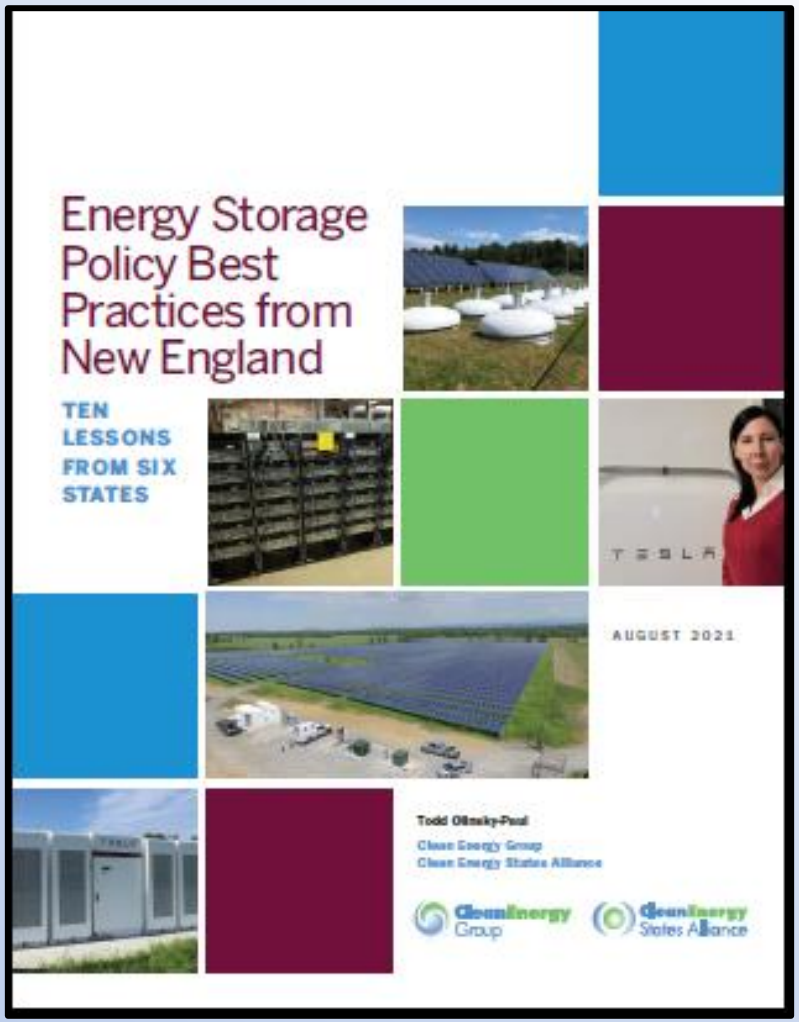
Clean Energy States Alliance / Clean Energy Group
August 26, 2021

New report from CEG/CESA

"This report is intended to provide state policymakers and regulators with a set of principles and lessons learned …. It does not prescribe a particular suite of energy storage policies, but does provide recommendations that each state should consider as it charts its own course."



One size does not fit all

- Each state faces unique circumstances and has unique needs, even when they exist within the same market frame (ISO-NE).
- One state cannot simply adopt wholesale the policies and programs of another state.
- However, best practices are starting to emerge…

Energy Storage Policy Best Practices from New England: *Ten Lessons from Six States*

1. **Identify benefits of energy storage that are not priced or monetizable in existing markets**; recognize and accommodate the multi-use nature of energy storage resources.

2. **Establish a monetary value for each storage benefit** and use those values when calculating cost effectiveness and setting incentive rates. Estimated value is better than no value at all.

3. **Create incentives to support storage operations that further state policy goals.** Incentivize storage use, not just storage deployment.

4**. Set ambitious clean energy and/or emissions reduction goals and explicitly include energy storage as an eligible technology.** Define how storage is expected to be deployed and operated to help meet the goals.

Ten Lessons (continued)

5. **Incorporate energy storage into existing clean energy and efficiency programs.**

6. **Incorporate equity considerations into energy storage program design from the start,** not as an afterthought. This should include significant incentive adders for qualifying participants.

7. **Support a wide variety of storage ownership, application, and business models.**

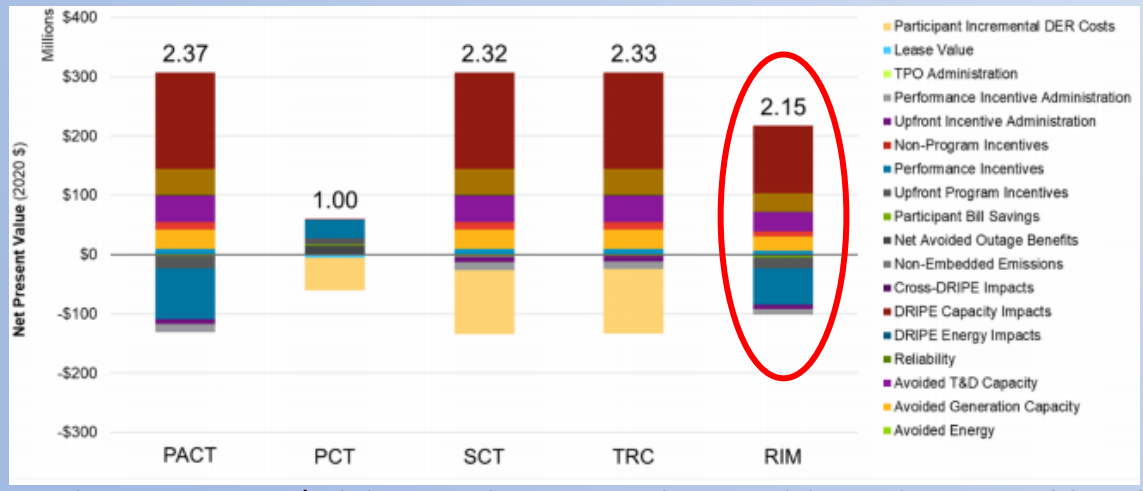
8. **Anticipate and proactively address needed regulatory changes.**

9. **Replicate and improve on successful programs implemented in other states.**

10. **Fund demonstration projects when needed, but do not rely on grants alone to build a market.**

1&2. Identify storage benefits, assign value for CBAs

- **<u>Value</u> does not equal <u>price</u>.** What is valuable is not always priced or monetizable in current markets.
  - Examples of (sometimes) monetizable applications: peak demand reduction, frequency regulation, energy arbitrage.
  - Examples of (usually) non-monetizable applications: increased resilience, reduced land use, jobs creation.
- It is important to assign value to storage benefits even if markets for those benefits are absent. **Low or estimated value is better than no value at all.**



Connecticut customer battery program cost benefit analyses:

Note score on RIM test (far right) indicates no cost shifting

PACT = Program Administrator Cost Test **PCT** = Participant Cost Test **SCT** = Societal Cost Test
TRC = Total Resource Cost Test **RIM** = Ratepayer Impact Measure

Non-energy benefits of distributed storage in MA

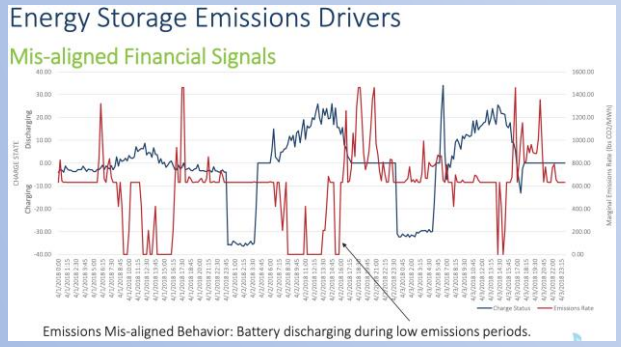
	Non-Energy Benefit (2018$)
1) Avoided power outages	
Battery storage helps avoid outages, and all of the costs that come with outages for families, businesses, generators and distribution companies	Residential: **$1.72**/kWh Commercial/Industrial: **$15.64**/kWh
2) Higher property values	
Installing battery storage in buildings increases property values for storage measure participants by: (1) increasing leasable space; (2) increasing thermal comfort; (3) increasing marketability of leasable space; and (4) reducing energy costs	**$5,325**/housing unit for low-income single family participants **$510**/housing unit for owners of multi-family housing
3) Avoided fines	
Increasing battery storage will result in fewer power outages and fewer potential fines for utilities	**$24.8 million** in 2012
4) Avoided collections and terminations	
More battery storage reduces the need for costly new power plants, thereby lowering ratepayer bills, and making it easier for ratepayers to consistently pay their bills on time. This reduces the need for utilities to initiate collections and terminations	Terminations and Reconnections: **$1.85**/year/participant Customer calls: **$0.77**/year/participant
5) Avoided safety-related emergency calls	
Increasing battery storage results in fewer power outages, which reduces the risk of emergencies and the need for utilities to make safety-related	**$10.11**/year/participant
6) Job creation	
More battery storage benefits society at large by creating jobs in manufacturing, research and development, engineering, and installation	**3.3 jobs**/MW **$310,000**/MW
7) Less land used for power plants	
More battery storage reduces the need for peaker plants, which are more land-intensive than storage installations—benefitting society by allowing more land to be used for other purposes	**12.4 acres**/MW

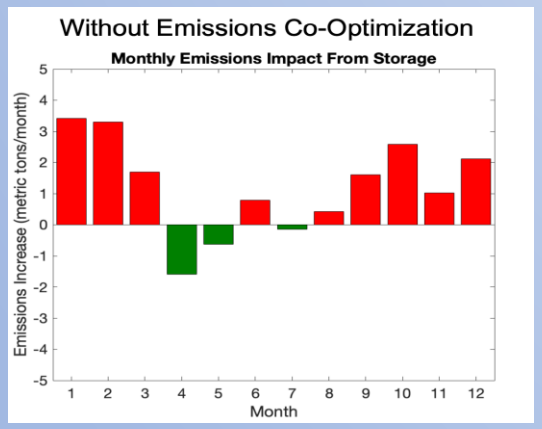
Analysis by Applied Economics Clinic

3. Provide meaningful incentives for storage operations

- **Storage is a multi-use tool.** States should use incentives to align storage value stack optimization with state policy goals.
- Incentivize storage ***operations*** – not just storage ***deployment***.

BEFORE





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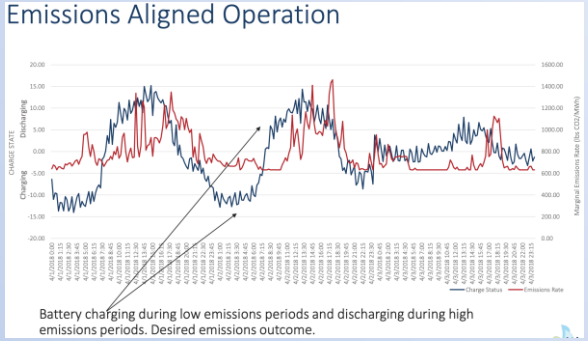
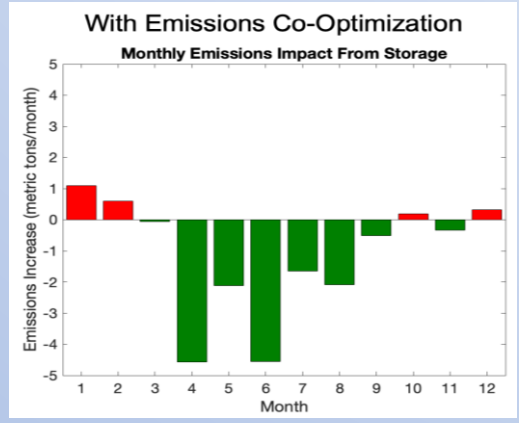




Example:

California solved their emissions problem by making 50% of the SGIP battery incentive contingent on batteries charging and discharging *at the right times*.

4&5. Set policy goals, incorporate storage into programs that support these goals

- Not every state will adopt an energy storage target, but most states have clean energy targets. **Storage incentives should support established clean energy targets and other social benefit objectives.**
  - RPS and RES, 100% clean energy targets
  - Emissions reduction targets
  - Clean peak standards
  - Grid modernization goals

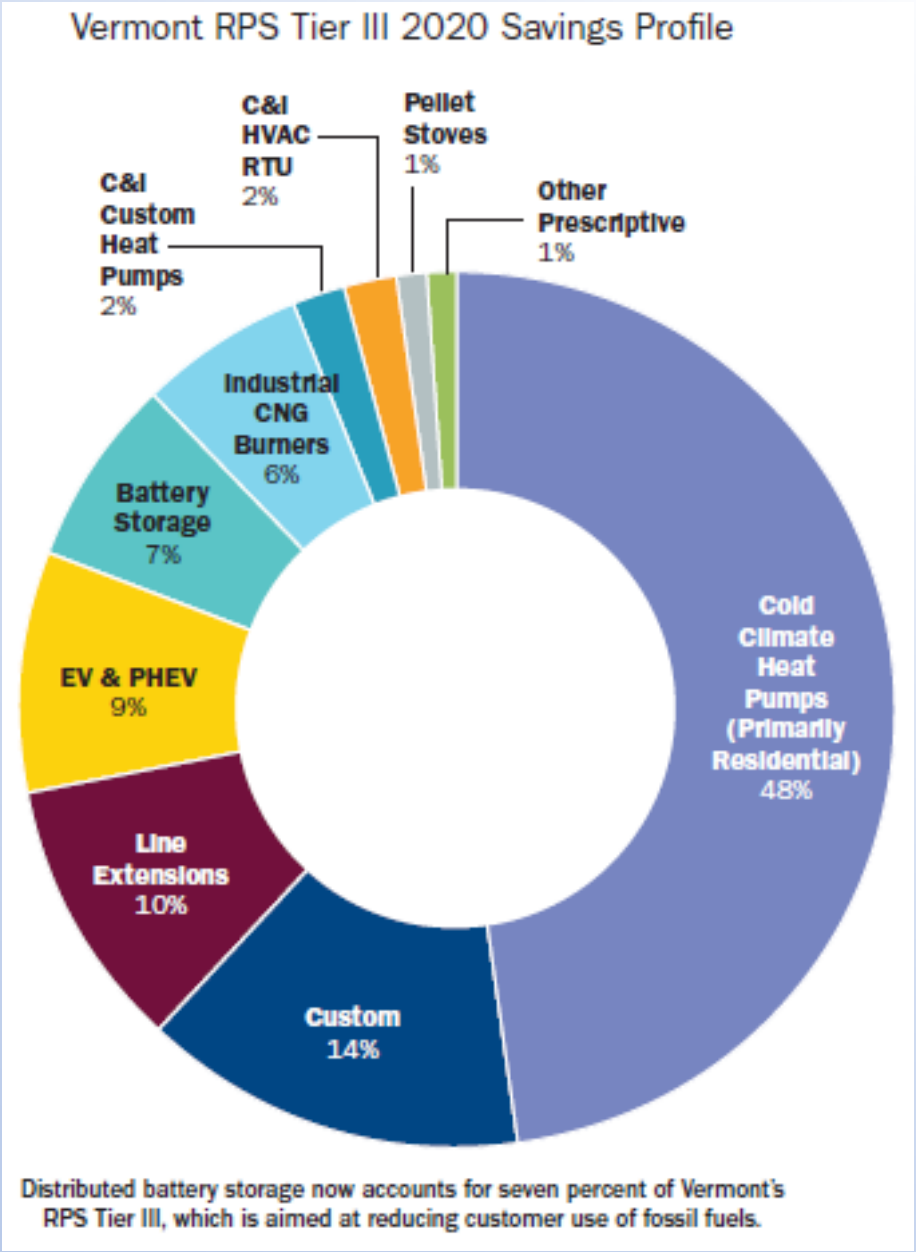
- **Storage can be added to existing programs that support state targets.** This is often easier than designing a new program and finding new money.
  - Storage added to solar incentive (MA SMART RI Energy Storage Adder)
  - Storage added to energy efficiency (ConnectedSolutions battery program (MA, RI, CT, ME) and demand response programs (VT, NH)
  - Storage eligibility in RPS (ME, VT)

Example:

Vermont recently added energy storage as a qualifying resource for its RPS Tier III Program (designed to reduce customer fossil fuel consumption).

Battery storage now accounts for 7 percent of the state's Tier III RPS portfolio.

The state's largest utility, Green Mountain Power, has placed more than 3,000 batteries behind residential customer meters.



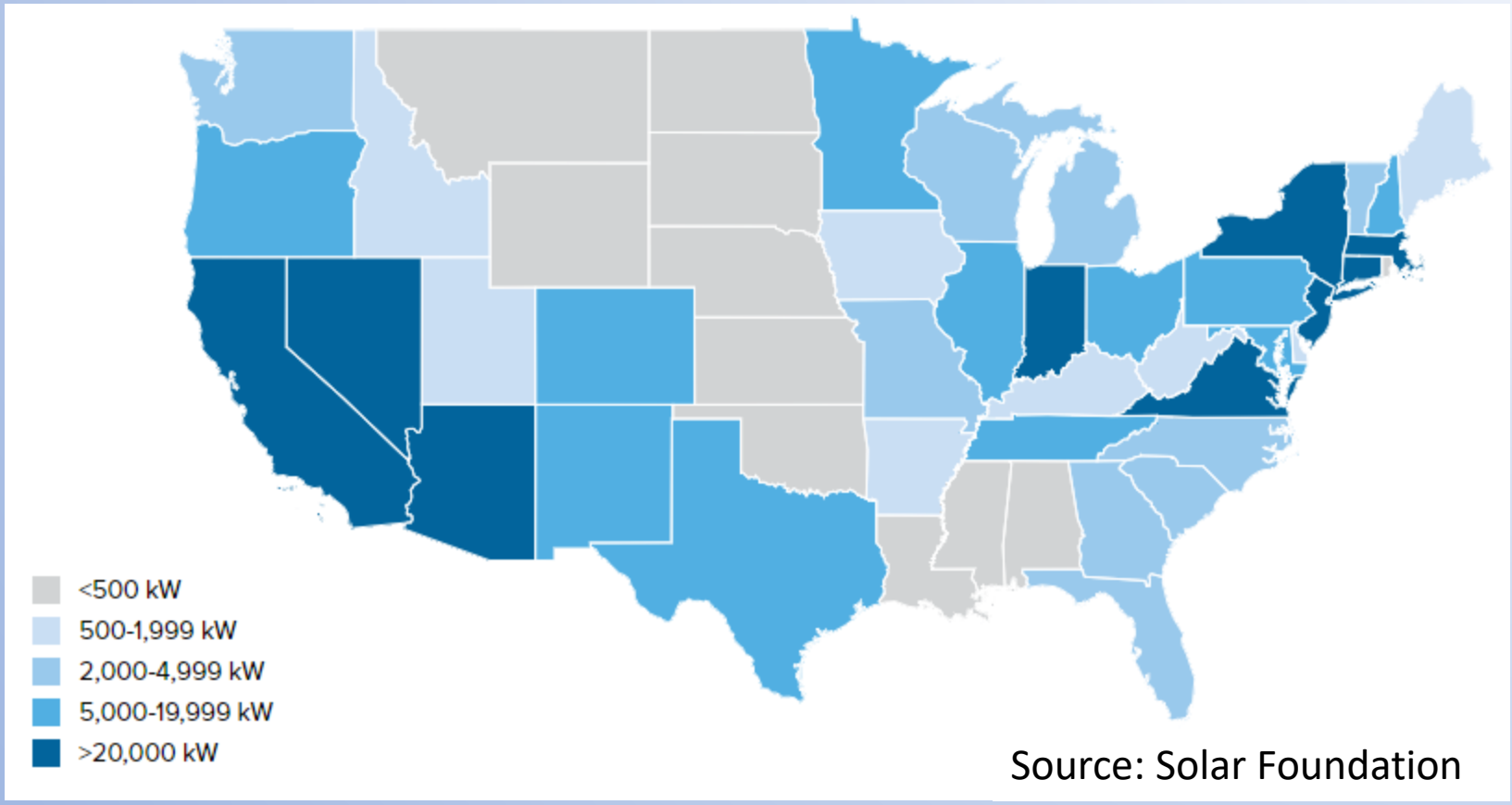
Distributed battery storage now accounts for seven percent of Vermont's RPS Tier III, which is aimed at reducing customer use of fossil fuels.

6. Incorporate equity provisions from the start

- Incorporate LMI/equity provisions in programs and policy from the start, not as an afterthought (CT PURA Statewide Electric Storage Program)
- Carve-outs alone are not sufficient; increased incentive rates can be effective (CA SGIP)
- Look for opportunities to provide storage benefits (cost savings and resilience) to facilities serving underserved communities
  - Schools
  - FQHCs
  - Community buildings
  - Multifamily affordable housing

Example: Solar Schools Map

Many megawatts of solar PV are already installed on schools across the US.

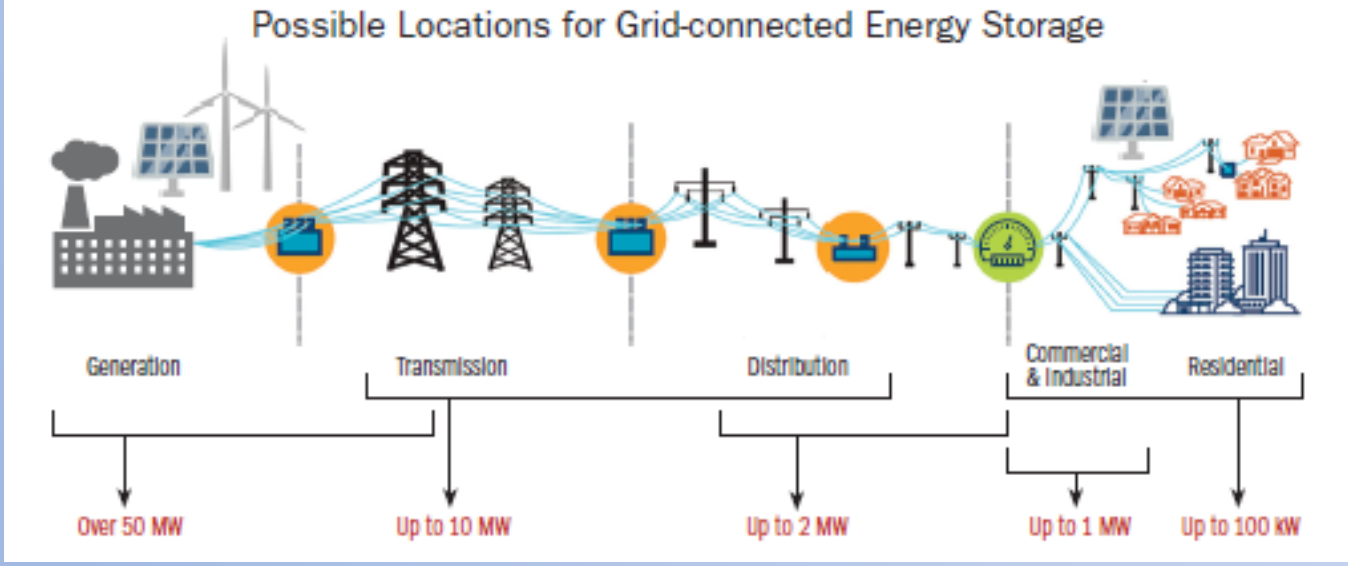


Source: Solar Foundation

7. Support a varied and competitive storage market

Storage offers a lot of *locational value:*

- Large/utility scale and small scale/distributed storage
- FOM and BTM placement
- Residential and commercial/industrial customers
- Diverse ownership models (utility owned, merchant owned, customer owned, leasing, PPAs, VPPs)



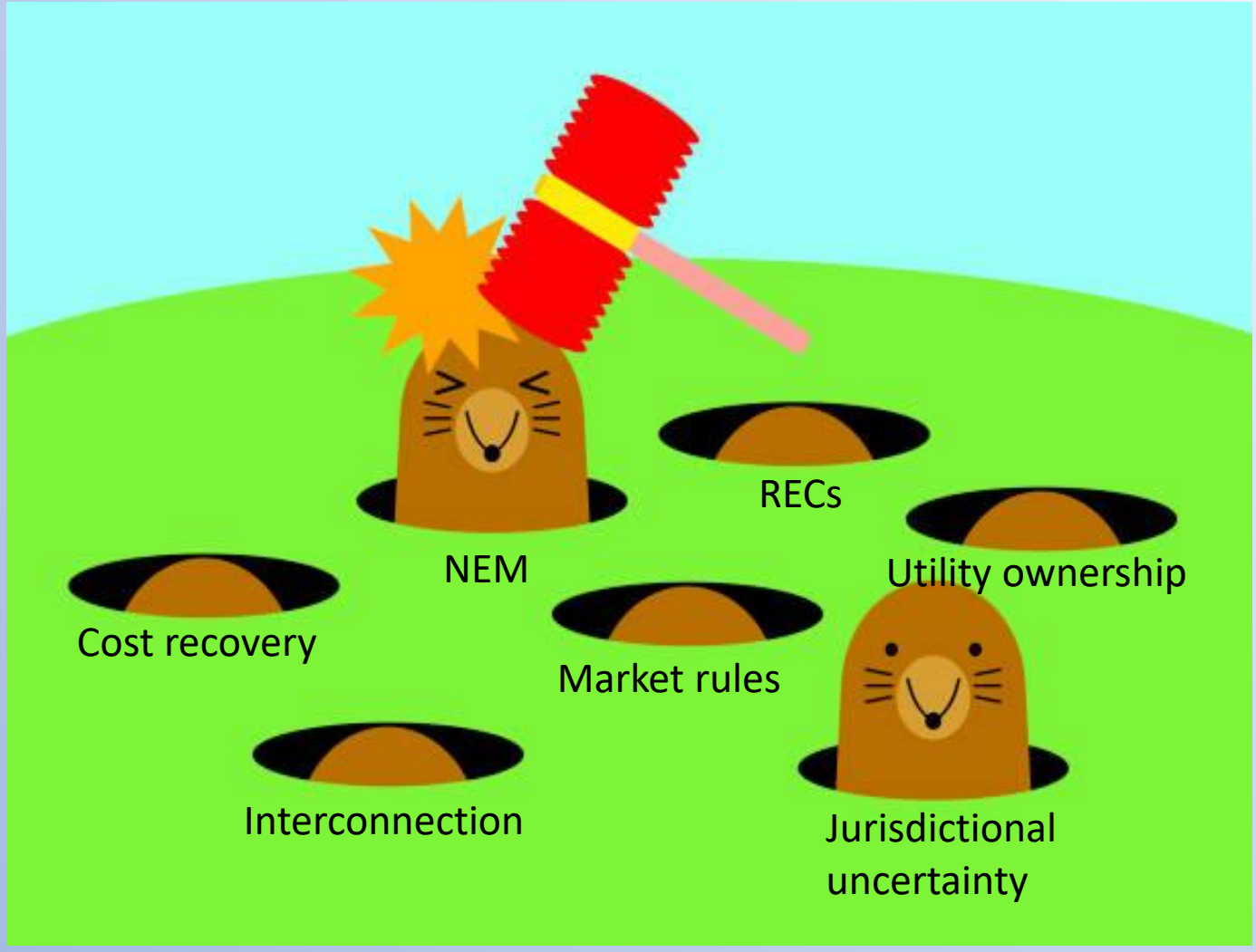
A varied market allows storage resources to flow to where they are most needed

8. Address auto-mechanics (regulatory issues) ahead of time

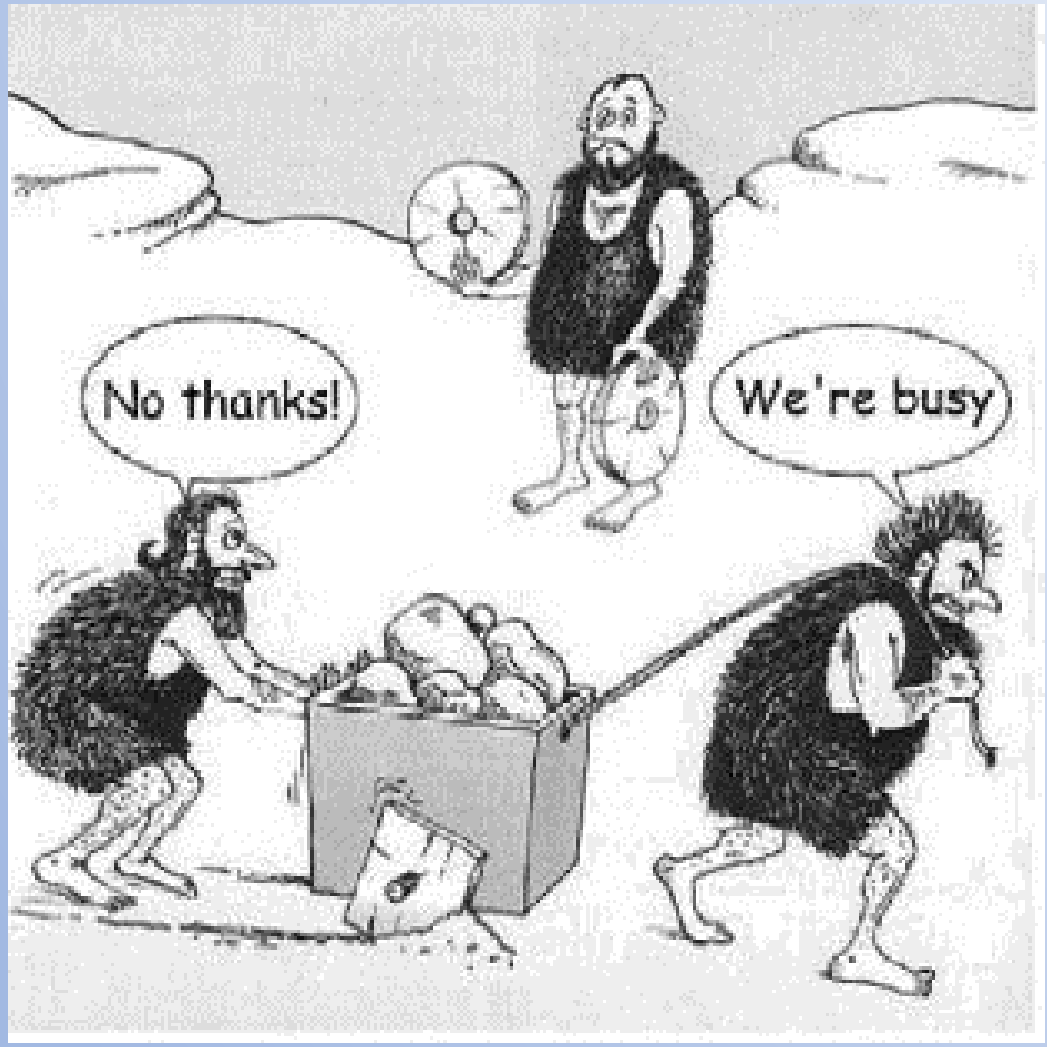
- Regulatory changes will be needed when new policy and programs are adopted
- Issues such as interconnection, metering, NEM rules, REC creation/ownership can derail programs, frustrate users and delay success in meeting policy goals
  - MA - 900 MW SMART applications delayed due to “cluster studies” (hosting capacity)
  - NEM dockets in numerous states
  - Capacity/REC ownership questions
  - Metering requirements
  - Program rule clashes

Did somebody send for a mechanic?

Be proactive – don't play regulatory whack-a-mole!



9. Replicate and improve on successful programs implemented in other states.



If it worked in another state, maybe – with a little tweaking – it could work in yours.

Don’t reinvent the wheel…

10. Fund demonstration projects when needed, but don't rely on grants alone to build a market.

- Studies/Roadmaps
- Grants/Demonstration projects
- Longer-term programs
  - Utility procurement targets
  - Rebates/Performance incentives
    - Rebates
    - State tax incentives
    - Storage adder in solar incentive program
    - IRP reform
    - BYOD/VPP programs
    - Storage in EE plan

Thank You

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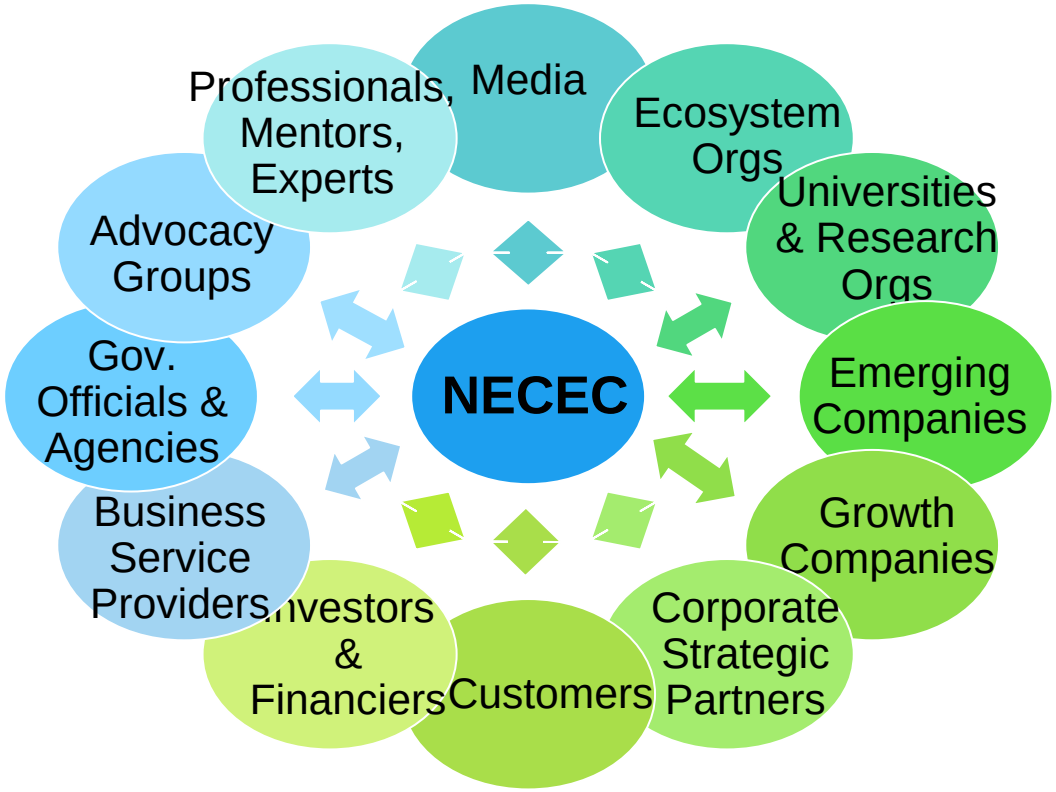
Your Partner in the Clean Energy Economy

CEG/CESA Storage Webinar

Sean Burke, NECEC

Introduction

- NECEC is the premier voice of businesses building a world-class clean energy hub in the Northeast
- Includes the Northeast Clean Energy Council (a nonprofit business member organization), and NECEC Institute (a nonprofit focused on industry research, innovation, policy development, and communications initiatives)
- ~200 members across the clean energy spectrum



Developer Needs

- Commitment
- Value proposition
- Certainty
- Removal of emerging and existing barriers
- Wholesale market considerations

We Know Where We're Going

- Big picture goals
  - 5 of 6 New England states have mandatory emissions reduction commitments
- Storage targets signal commitment to the industry
  - NY: 3,000 MW by 2030
  - CT: 1,000 MW by 2030
  - ME: 400 MW by 2030
  - MA: 1,000 MWh by 2030
- Disconnect between commitments and progress; need a roadmap for the path forward

Get With the (Storage) Program

- Targets alone are not sufficient to drive development
- Storage programs provide clear signals… if designed properly
- Types of programs vary:
  - Standalone storage program (CT)
  - Incorporated into efficiency program (MA, NH, CT, ME, RI)
  - Incorporated into renewable program (MA)
  - Procurement (CT)

What You Really, Really Want

- What are the goals of the program? What do you want storage to provide?
- Subtle but important differences
  - Emissions reduction program vs. renewable integration program vs. reliability program vs. grid services program
- Developers and financiers require certainty and predictability
- Asset is highly programmable to capture the best value… if that value is clear
  - Standardized BCA methodology is helpful: National Standard Practice Manual for DERs

Remove Barriers

- Emerging and existing barriers can hamper deployment
- Rate design
  - Example: Front-of-the-meter demand charges (ME and CT)
- Restrictive program rules
  - Example: Storage and net metering (MA and ME)
- Interconnection – potential emerging barrier

Wholesale Considerations

- State retail programs must consider interaction with wholesale markets
- Capacity rights
  - Who owns?
  - How can they be monetized, if at all?
- Program design can facilitate or prevent wholesale participation
  - For example: prohibition on charging/discharging

Thank you!

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Upcoming Webinar

How Green is Blue Hydrogen?: Study Finds Hydrogen Produced with CCS Produces High Emissions

Tuesday, September 7, 1-2pm ET

Read more and register at: www.cleanegroup.org/webinars

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