



Northeast Strategic Energy Management Collaborative 2020: **Pathways Towards Integration**

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Technology and Market Solutions Manager

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Allies Network



State Partners



Connecticut

State Partners: CT DEEP, CT Energy Efficiency Board, Eversource Energy, United Illuminating Company, Southern Connecticut Gas and Connecticut Natural Gas

Partners in 2017/2018/2019/2020

District of Columbia

State Partners: Department of Energy and Environment and DC Sustainable Energy Utility

Partners in 2017/2019/2020

Massachusetts

State Partners: Massachusetts Department of Energy Resources

Partners in 2019

New Hampshire

State Partners: NH Office of Strategic Initiatives, NH Public Utilities Commission, Eversource Energy, NH Electric Coop, Unitil and Liberty Utilities

Partners in 2017/2018/2019/2020

New York

State Partners: NYSERDA

Partners in 2017/2018/2019/2020

Rhode Island

State Partners: RI Office of Energy Resources, National Grid RI, RI Department and Education and RI Energy Efficiency & Resource Management Council

Partners in 2017/2018/2019/2020

Vermont

State Partners: Efficiency Vermont

Partners in 2017/2018/2019/2020

West Virginia

State Partners: West Virginia Office of Energy

Partners in 2020

Workshop Guidelines – Antitrust Statement

Throughout our meetings, participants shall comply with competition law requirements and shall not enter into any discussion, activity or conduct that may violate any applicable competition law. Should the meeting discuss matters that contravene competition law requirements, it is the responsibility of participants to notify the Moderator who will discontinue the discussion or close the meeting.

Northeast Energy Efficiency Partnerships

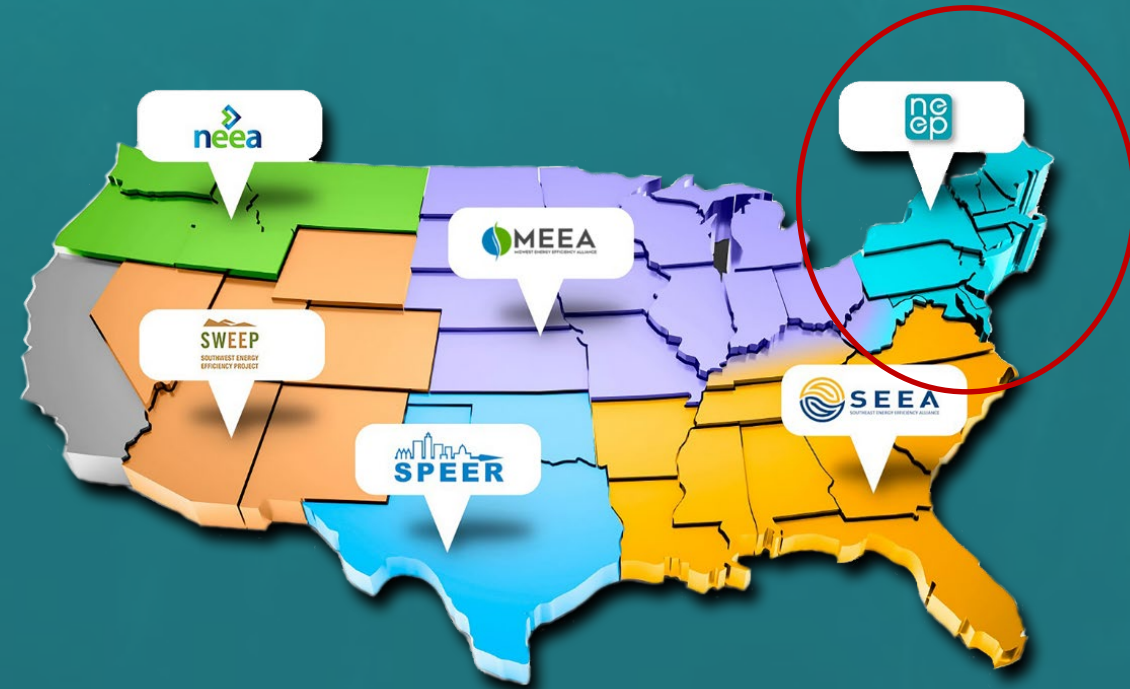
“Assist the Northeast and Mid-Atlantic region to reduce building sector energy consumption by at least 3% per year and carbon emissions by at least 40% by 2030 (relative to 2001)”

Mission

We seek to accelerate regional collaboration to promote advanced energy efficiency and related solutions in homes, buildings, industry, and communities.

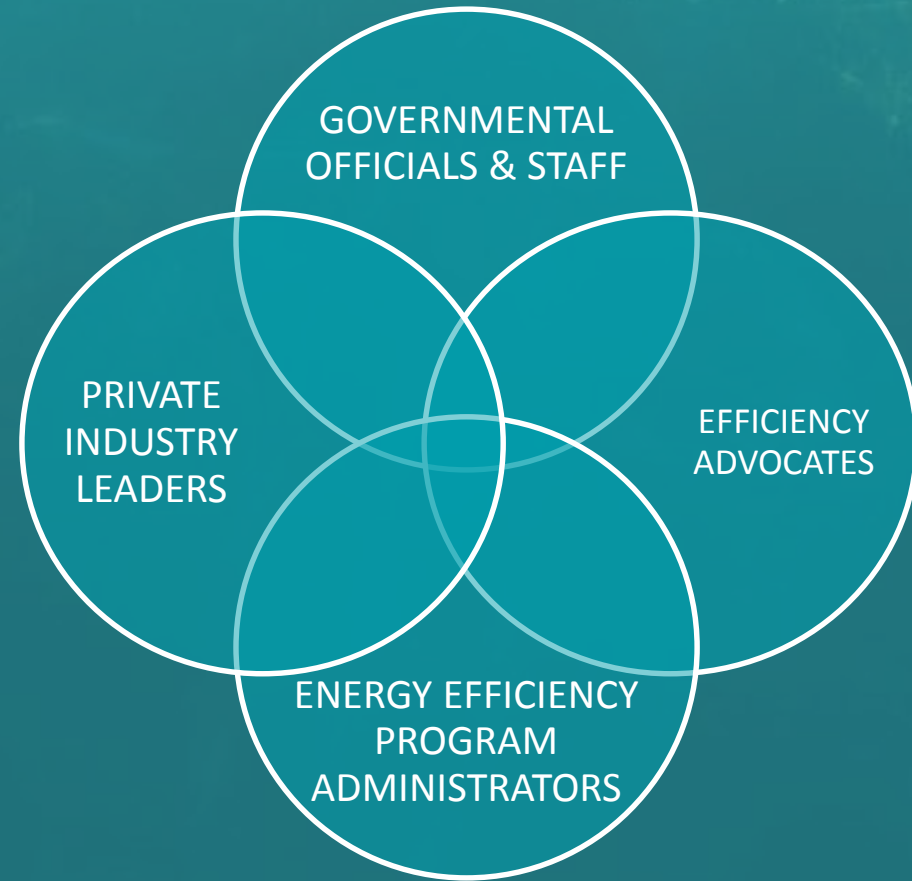
Approach

Drive market transformation regionally by fostering collaboration and innovation, developing tools, and disseminating knowledge



Deep and Broad Relationships

NEEP's core audiences and partners are states, local government, industry and advocates leading the way for advanced energy efficiency and low carbon building solutions responsive to the needs of customers and the electric grid.



NEEP's 2021 SEM Mission



MISSION

Accelerating adoption of Strategic Energy Management to continuously improve building and industrial facility energy efficiency, productivity, health, comfort and safety, while reducing costs and carbon emissions.

LONG TERM MARKET TRANSFORMATION GOALS

By 2025:

All Northeast states have policies and programs to support adoption of SEM in the commercial and industrial sectors

By 2030:

All Northeast states adopt 2050 carbon neutral mandates for all homes and buildings with zero energy/carbon codes for new and renovated homes and buildings to begin by 2032.

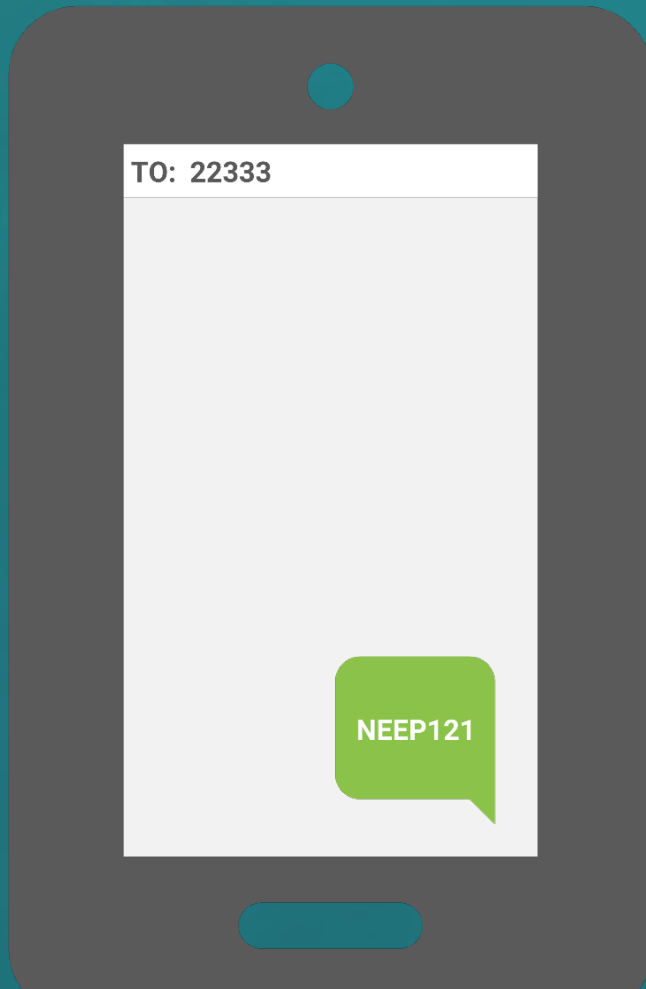
Audience Participation

- Attendee microphones are in mute mode
- Session question & answer segments
- Polling via cell phone



Q&A

Polling Instructions



Text NEEP121 to 22333 to
participate in our polls.

What state are you joining us from today?

Which of these fields is most applicable to your line of work.

Government

Utility program administration

Program Implementation

Research and Development

Other

Today's Workshop Objective

Provide a platform to learn and participate in discussions about the practices, policies, and processes that contribute to continued SEM success in the Northeast region.

- Regional and National SEM Program Successes
- Assigning a Measure of Life to SEM Program Savings
- Emerging SEM Opportunities
- The SEM Experience - A Customer's Journey



Regional and National SEM Program Successes



Greatest 2020 Regional SEM Accomplishments

- Initiating new projects despite the challenges introduced by COVID
- Adapting SEM programs to virtual models
- Maintaining cohort participation
- Helping customers respond to COVID-related challenges



VERMONT

Maintaining majority of participants through 2020 program year between two cohorts



MASSACHUSETTS & RHODE ISLAND

Claiming the first CEI savings, both electric and natural gas, for the Year 1 performance period in each state.

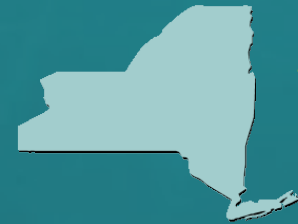


CONNECTICUT

Initiating new projects in 2020 and advancing projects that were engaged prior to 2020, despite challenges with COVID.

2020 Regional SEM Barriers

- Program reevaluation in response to COVID
- Moving entire programs to virtual delivery
- The sudden halt of workshop gatherings and site visits
- Learning how to offer SEM remotely
- Finding savings during prolonged non-routine events



NEW YORK

Becoming creative about fostering the peer to peer engagement on web meetings since it wasn't something that came naturally in that forum.

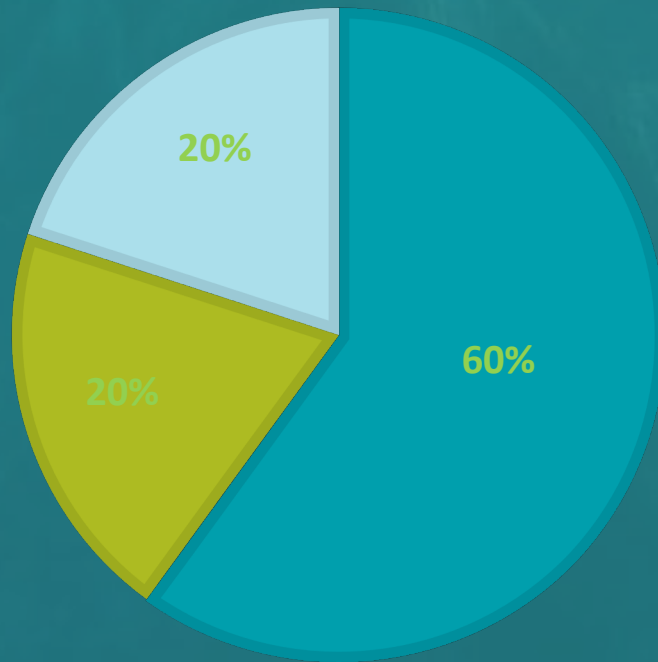


VERMONT

Adapting to COVID closures and reductions by ensuring that customers' needs were met, regarding emergency operation changes.

Accomplishing 2020 Regional SEM Goals

■ On Track ■ Not on Track ■ Partially on track



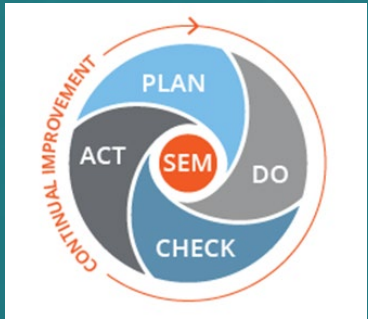
What helped to keep programs on track?

- Quick adaptation of SEM materials for web-based live online delivery
- Close relationships between implementers and utilities
- Regular involvement with the site energy champions
- Willingness of participants to move forward with their SEM programs
- Shifting goals to get participants to new offerings

2020 National SEM Accomplishments



NORTH AMERICAN SEM COLLABORATIVE



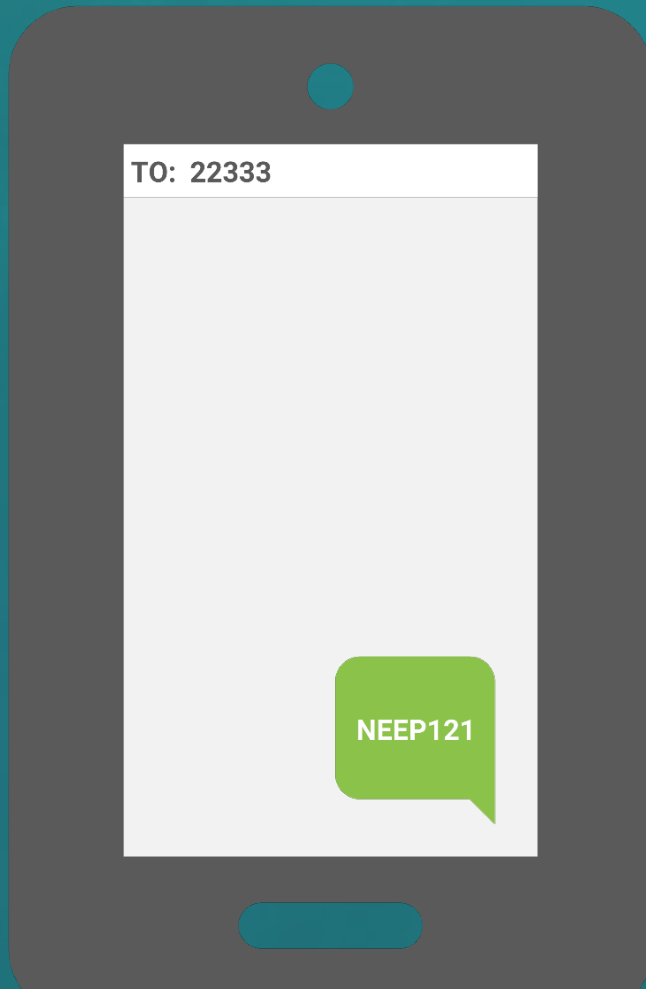
- Delivering two of the three committed items that came out of the 2019 SEM Summit
 - Getting the Cost Effectiveness funded research paper off the ground and running
 - Delivering the Negative Savings sub-group findings
- Delivering engaging and informative webinars
- Delivering a very successful Virtual SEM Summit

U.S. DOE



- Navigator “3.0”: now aligned to ISO 50001:2018
- Migration of existing projects to use new tasks and guidance optional throughout 2020
- List of transition resources and Navigator feature upgrade: task worksheets
- Launch new on-line 50001 Ready cohorts early next year. Information on them will be released later this month/early December

Polling Instructions



Text NEEP121 to 22333 to
participate in our polls.

Using one word, what do you think is the most important factor for SEM program success?



Assigning a Measure of Life to SEM Program Savings



Moderator: Layne McWilliams,
Cascade Energy

Introductions



**Jess Burgess,
Econoler**



**Erika Kociolek,
Energy Trust**



**Derek Okada,
Southern California
Edison**



**Peter Therkelsen,
Lawrence Berkeley
National Laboratory**

What measure life should be assigned to SEM program savings?

1-2 years

3-4 years

5-6 years

More than 6 years



Sneak Peek: NASEMC Cost-Effectiveness and Persistence

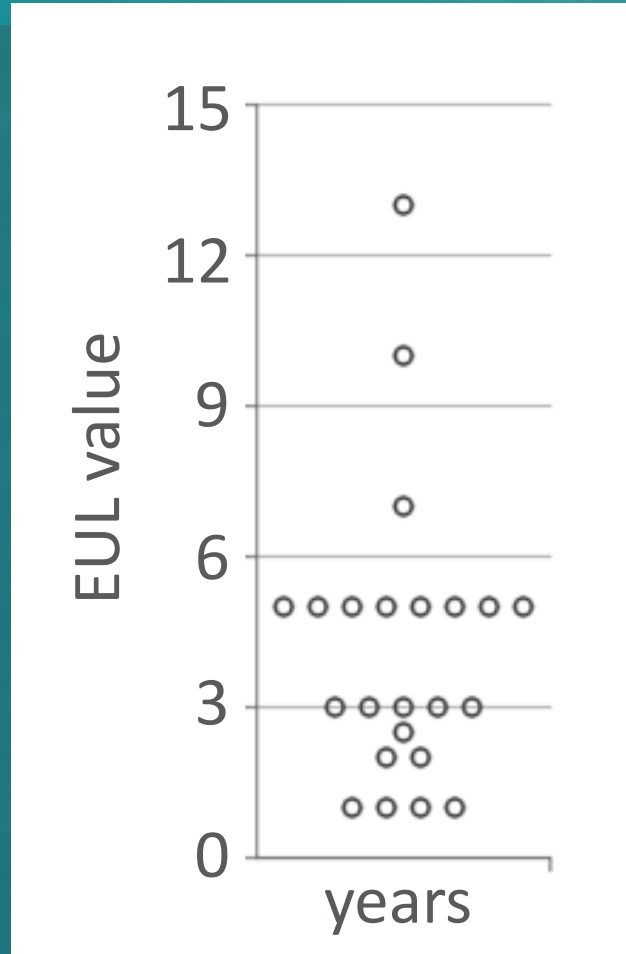
Peter Therkelsen, Ph.D.

Research Scientist, Berkeley National Laboratory

Research purpose and direction

- Purpose
 - Investigate energy savings persistence and cost-effectiveness of SEM programs
- Process
 - Survey of program evaluation reports
 - 24 programs interviewed
- Interview topics: program design, energy savings determination, energy savings persistence, program cost-effectiveness, program energy management persistence
- Analysis underway!

EUL values are clustered, origination unclear



EUL Selection Rational	Count
Relied on a secondary source	6
Made a reasonable assumption	4
Estimated based on the types of measures installed	4
Evaluated	3
Conducted primary study	2
Blend of previous custom and prescriptive projects	1
Developed internally based on attrition rate	1
Negotiated with consultants	1
Regulatory decisions	1
Don't know	2
n/a	3

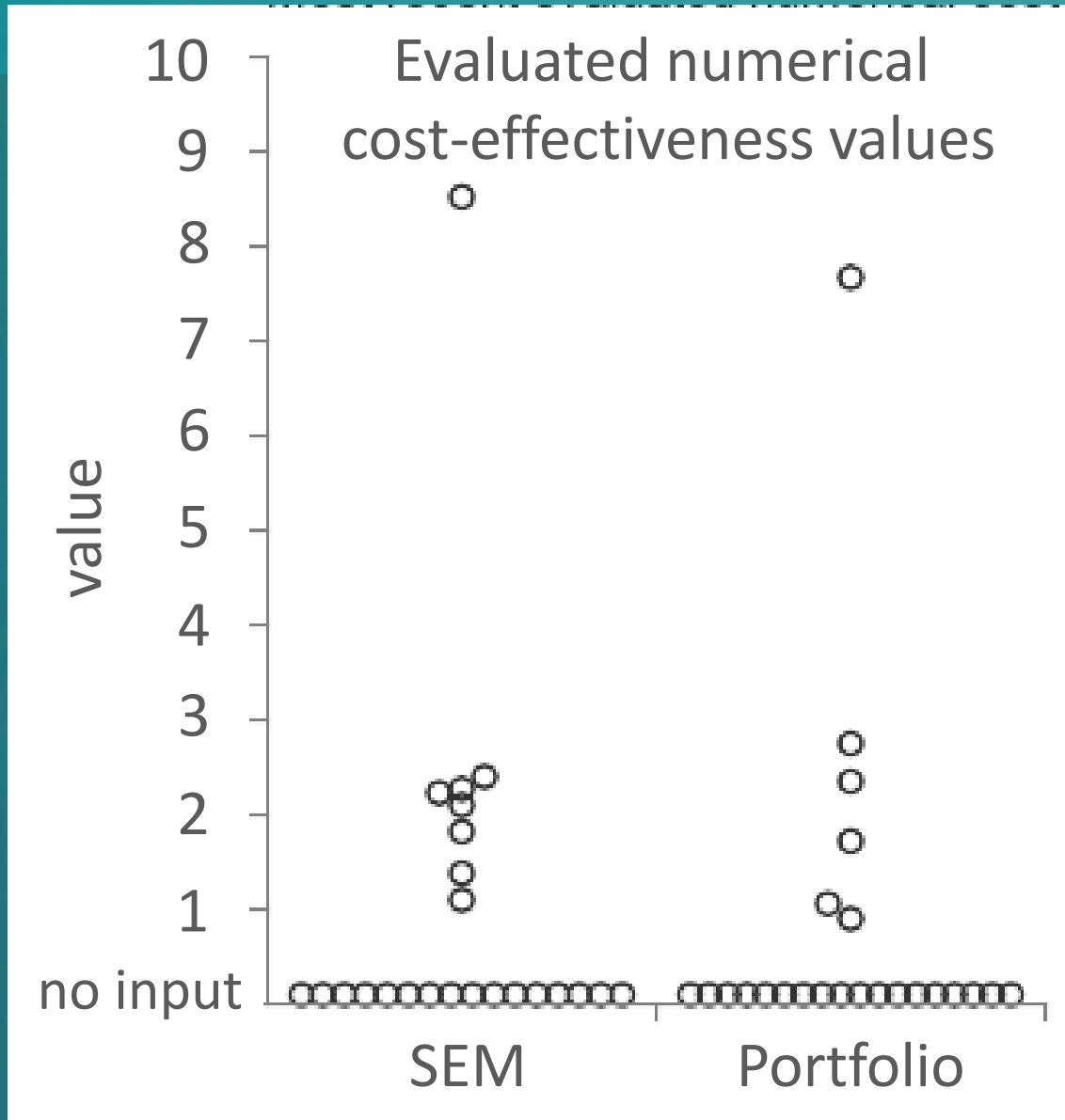
EULs cover a wide range of values:

- Should this be explored?

EULs come from many sources:

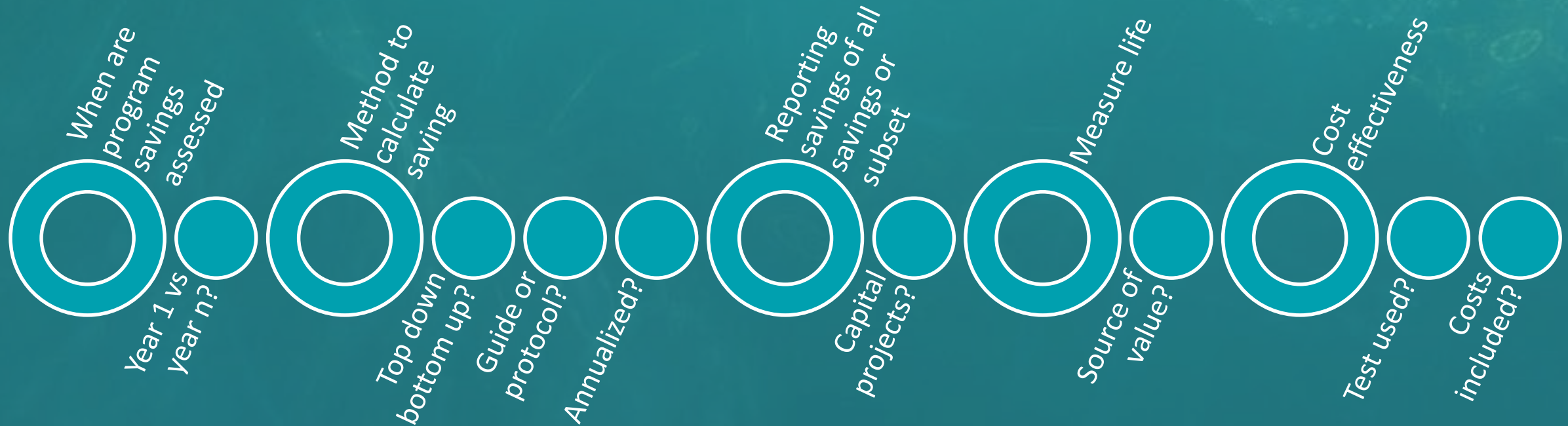
- Should there be protocols or consistency?²⁵

Cost-effectiveness tests and values



Type of C-E Test	Responses
TRC	19
UC/PAC	5
SC	3
RIM	1
MTRC	1
LCE	1

Differences in calculating cost-effectiveness



- Is greater consistency of inputs possible, useful, worth pursuing?
- Can non-energy benefits be better revealed? Quantified?
- Can program elements and savings, non-energy benefits or, c-e value be linked?

What would you most want to learn from an SEM program evaluation?

What value does SEM provide to a sponsoring utility beyond claimable energy savings?

What measure life should be assigned to SEM program savings?

1-2 years

3-4 years

5-6 years

More than 6 years

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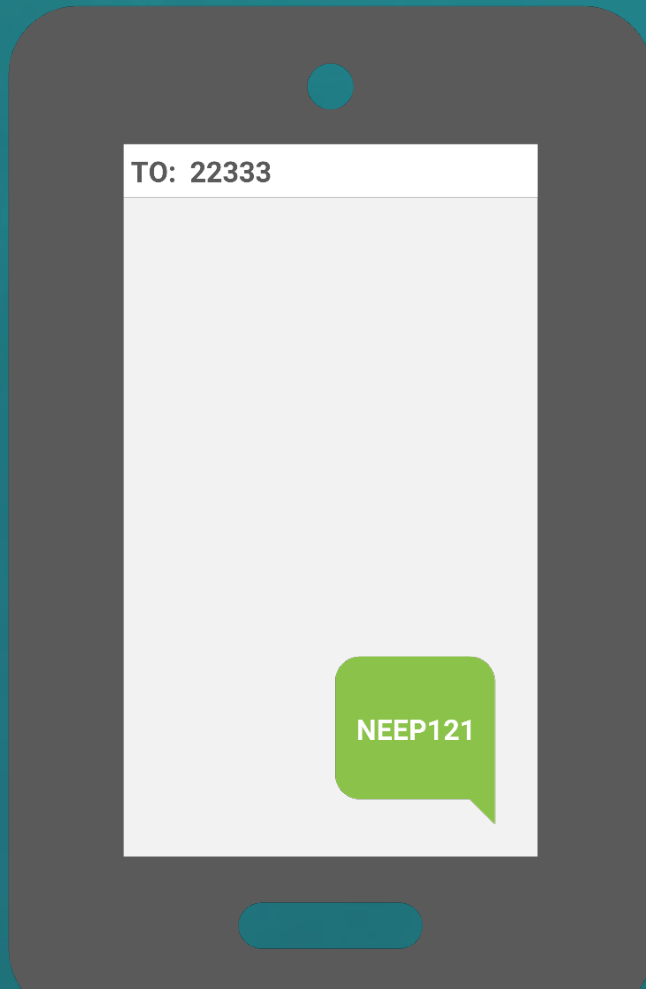
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Polling Instructions



Text NEEP121 to 22333 to
participate in our polls.

What is the first thing you would do when things get back to "normal"?

**Using one word, what do you think is a major SEM
implementation challenge today?**



Emerging SEM Opportunities

Integrating SEM with other program activities

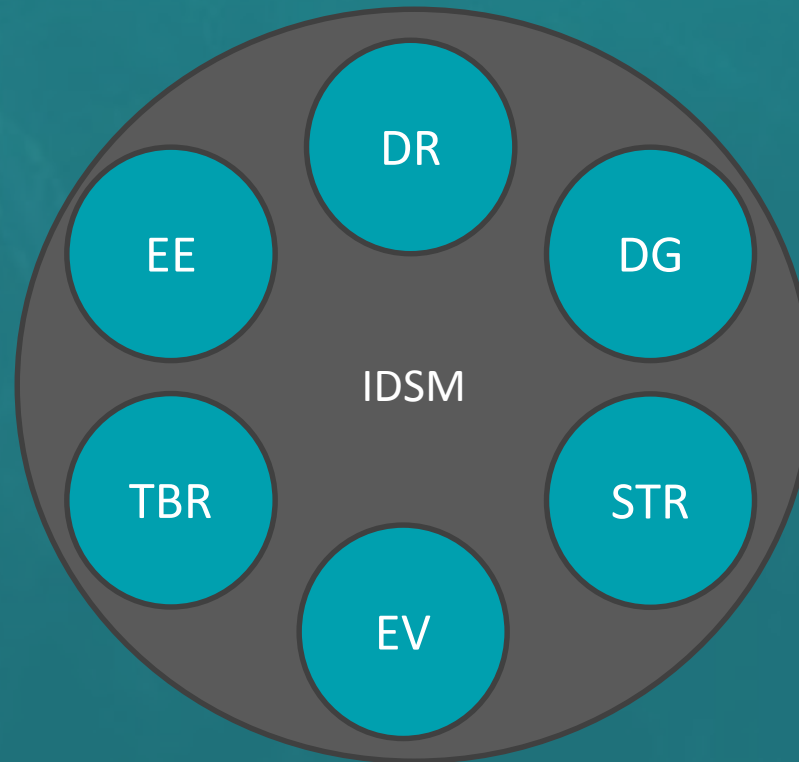


Moderator: Rory Schmick,
Stillwater Energy

Integrated Demand-Side Management (IDSMS)

- IDSMS is a strategic approach to designing and delivering a portfolio of demand side management (DSM) programs to customers.

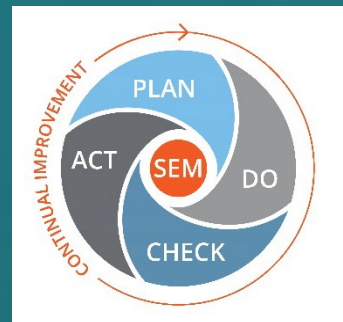
IDSMS Offerings
Energy Efficiency (EE)
Demand Response (DG)
Distributed Generation (DG)
Storage (STR)
Electric Vehicle Tech (EV)
Time-Based Rates (TBR)



Highlights from IDSM+SEM Webinar – June 4, 2020



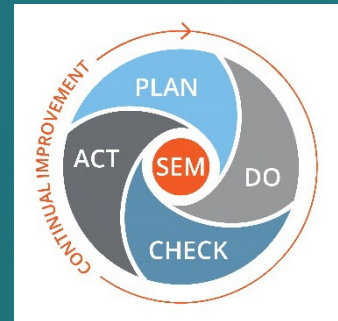
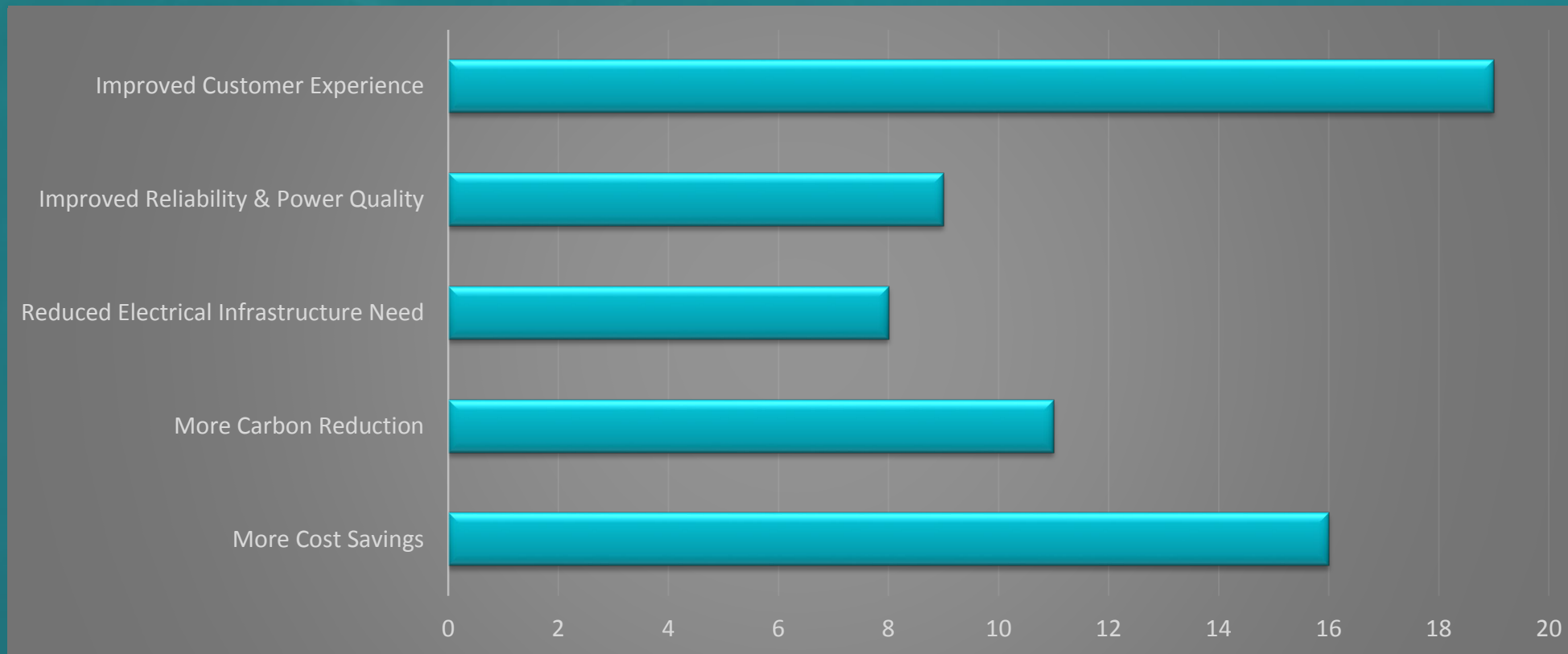
How do you integrate approaches in IDSM?



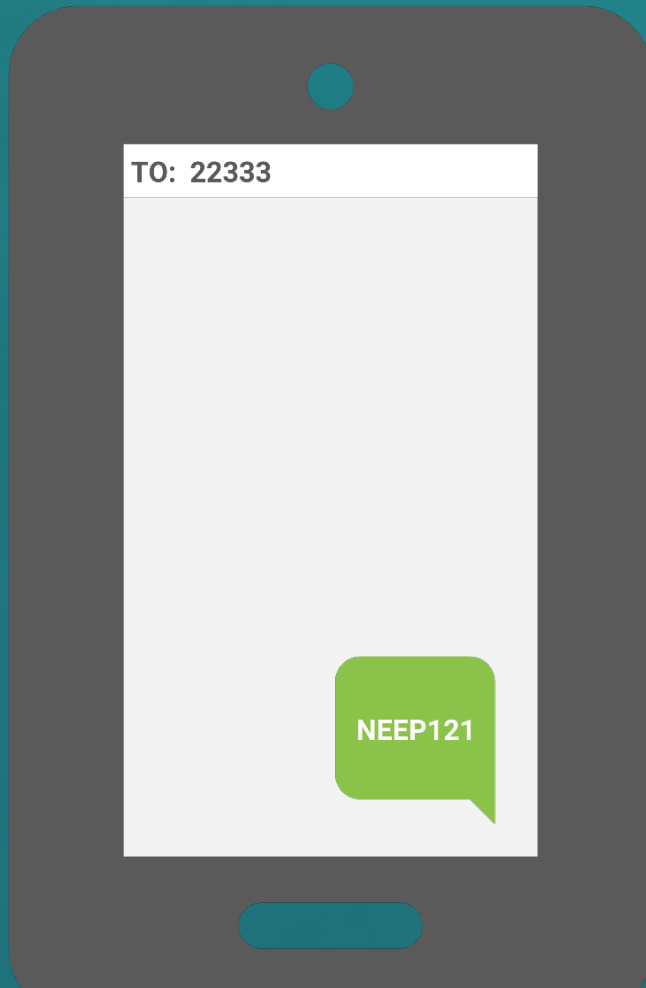
North American
SEM Collaborative

Highlights from IDSM+SEM Webinar – June 4, 2020

What are the benefits from combining the actions/activities?



Polling Instructions



Text NEEP121 to 22333 to
participate in our polls.

Does your organization - or the organization you most support - integrate these programs with SEM: energy efficiency (capital projects), demand response, distributed generation, storage, electric vehicle technologies, time-based rate programs

Don't integrate
Slowly integrating
Integrating Soon
Integrating Now

Thank You!

Rory Schmick | Associate Principal

Stillwater Energy

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Introductions



**Marie Abdou,
National Grid**



**Zoe Dawson,
VEIC**



**Katie Dooley,
NYSERDA**



**Jason Snyder,
TVA**



The SEM Experience – A Customer's Journey

Village of Essex Junction VT



James Jutras,
Essex Junction, VT

In the Beginning!

- Family upbringing
- Improve process control: plain and simple
- Partnering
 - Village of Essex Junction Board of Trustees
 - TriTown Committee on Sewage Treatment
 - Efficiency Vermont
 - Green Mountain Power Corporation
 - U.S. Department of Energy
- Strategic Plan N/A: Continuous Facility Improvement and Capital Plan.
ID problem areas and solution: Asset Management



Leveraging process control improvement and energy efficiency



- Discounted for necessary capital improvements
- Address process shortcomings as part of the design / implementation
- Use funding to reduce capital cost and to reduce staff maintenance needs where possible. Asset Management
- Challenges
 - Ahead of the curve can cause challenges
 - It takes a project or facility champion
- Next Steps
 - Benchmarking and optimization of installations
 - Reevaluate: Energy Audit, Energy Cohort, Kaizen

Some project highlights to date

- Third SCADA system in 30 years
- Third Lighting retrofit
- Second incentive for high efficiency aeration blowers
- Advanced process control backbone
- Right sizing motors and equipment
- Power monitoring
 - Load Shed
 - Load Rolling
 - Flexible Load Management Pilot
- FLM

What you earn!

Performance Period Update Report

Essex Junction

model: Power (kW) = 166 - 0.04*kWh_gen

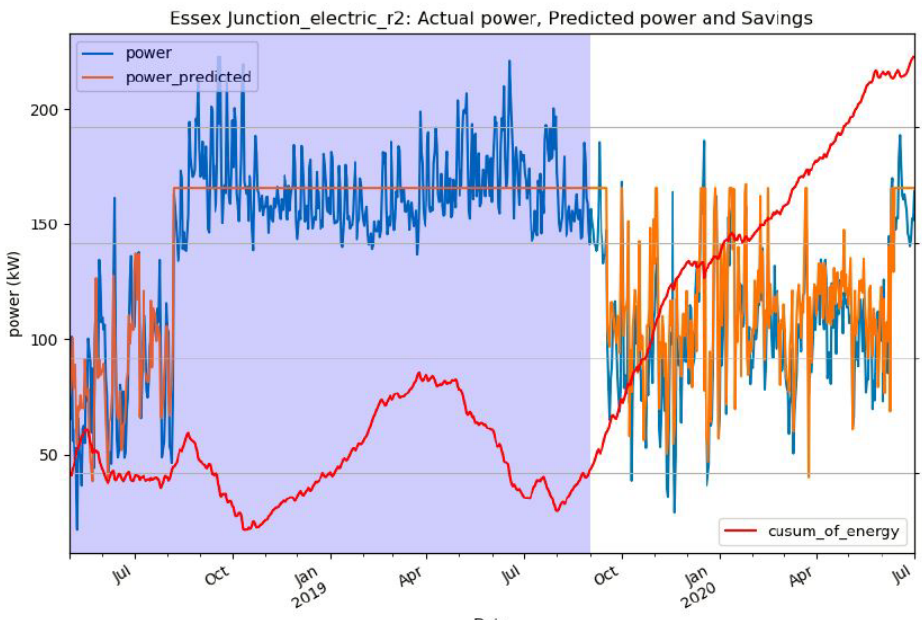
Reporting Period Start Date	2019-09-01
Reporting Period End Date	2020-07-01
Number of points	305
Average power actual (kW)	108
Predicted usage during period, energy (kWh)	862,155
Actual usage during period, energy (kWh)	789,893
Savings during period, energy (kWh)	72,262
Savings uncertainty (kWh)	+/-14,334
Savings fraction	8.4%
Uncertainty percentage points	+/-1.7%
Fractional savings uncertainty (target<50%)	19.8%



Perf

Essex Junction

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nt, 128 Lakeside Avenue, Suite 401 Burlington, VT 05401-5907

Questions?



James Jutras
Village of Essex Junction
jim@essexjunction.org



Workshop Debrief and Closing

Giselle Procaccianti, NEEP

In what ways can NEEP best continue to support regional SEM advancement going forward?

Key Takeaways from Today's Workshop

Regional and National SEM Program Successes

- Most Northeast states have been able to accomplish their 2020 SEM goals despite the challenges that they faced in 2020.
- Regional organizations that support SEM were also able to accomplish their SEM-related goals.
 - US DOE has made preparations to launch the new on-line 50001 Ready cohorts early next year. Information on this will be released later this month/early December.

1st Panel Discussion - Assigning a Measure of Life to SEM Program Savings

- Big range of measure lives are used across programs today. 3-6 years got most votes from attendees for most appropriate measure of life.
- Upcoming Report by LBNL – Investigating energy savings persistence and cost-effectiveness of SEM programs
- Current report by Energy Trust of Oregon – focus on activities that drive savings
- It is really challenging to get to consistent protocols when it comes to cost-effectiveness – can we in fact compare cost effectiveness?
- Much more room to consider – do program implementers transfer the value of SEM to the customer?
 - Key finding – very few programs use some form of energy program assessment for customers
- General opinion - measure life should vary within programs, but the reality is that it would be challenging in practice when considering different customers, O&M disaggregation etc.

More Key Takeaways from Today's Workshop

More on 1st Panel Discussion - Assigning a Measure of Life to SEM Program Savings

- Be very cautious comparing one programs C-E value to another
- Most current SEM programs rely on secondary sources to establish EUL
- Lots of diversity in customers, programs should treat them uniquely
- Tension between short term savings and long term persistence
- Energy management Assessments helpful tool to gauge customer adoption of SEM
- Don't disaggregate O&M practices with specific measure lives

2nd Panel Discussion - Emerging SEM opportunities

- Still in early days when it comes to SEM programs incorporating broader IDSM elements
- COVID has driven innovation in SEM program delivery, including virtual technologies, on demand offerings
- Programs increasingly focusing on opportunities to support DEI objectives through SEM
- Programs utilizing quantitative/qualitative metrics to assess SEM effectiveness
- Considering transactional vs transformational SEM engagement – the latter definitely changes relationships.
- NYSERDA now has an on-demand offering – a response to not being able to meeting groups. 50001 Ready is the backbone to this program.

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***Thank you
for joining us today!***