

NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

2023 Fall Workshop: Next Level SEM



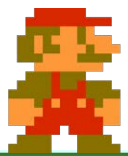
Welcome!

- WIFI
 - Network:
 - Pass:



Welcome!

- Faith DeBolt, LT Chair
 - SBW Consulting



Collaborative Leadership Team



Faith DeBolt, Chair
SBW Consulting



Kathleen Belkhat, Vice Chair
Energy Trust of Oregon



Sara York
Coefficient Consulting



Jim Volkman
Strategic Energy Group



Peter Therkelsen
LBNL



Kelsey Lewis
Snohomish PUD



Kevin Wallace
BC Hydro



NWSEMC Funders



Fall Workshop Working Group



Suzi Asmus
NEEA



Sam Walker
Coefficient Consulting



Josh Caplan
Prism Engineering



Kelsey Lewis
Snohomish PUD



Faith DeBolt
SBW Consulting



Fall Workshop Planning Support



Genevieve London
Stillwater Energy



Stephen O'Guin
NEEA



Patrick Shive
Stillwater Energy



Workshop Sponsors

HAPPY HOUR SPONSOR:

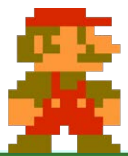
ENERGY  **350**

EVENT SPONSORS:

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sbw 
ENERGY + WATER + EFFICIENCY

energy **sensei**



Play Blackout Bingo!

- Complete all squares to enter a prize draw!
- Return to registration table at end of day
- Prizes awarded during Happy Hour

Name: _____

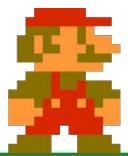


NW SEM Collaborative

Fall Workshop 2023 Bingo

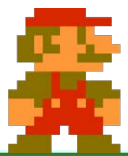
Instructions: Complete the objectives in the squares on the bingo board (or back if you need more room). Completing three in a row in any direction will enter you into a raffle drawing of a prize announced during happy hour!

<p>Introduce yourself to someone new!</p> <p>Write their name and role below to complete this square:</p> <div style="text-align: center; margin-top: 10px;">  </div>	<p>Gamification!</p> <p>Share something you found interesting during the Gamification share-out:</p> <div style="text-align: center; margin-top: 10px;">  </div>	<p>Talk to Event Sponsor Cascade Energy about:</p> <div style="text-align: center; margin-top: 10px;">  </div> <p>Write one thing you learned about this hub and whom you spoke about it below:</p>
<p>Talk to this Event Sponsor organization below about any SEM topic!</p> <div style="text-align: center; margin-top: 10px;">  </div> <p>Write the topic you discussed and whom with below:</p>	<p>Free Space</p> <div style="text-align: center; margin-top: 20px;">  </div>	<p>Leveling Up with SEM!</p> <p>Share something new you learned in the Leveling Up SEM Share Out:</p> <div style="text-align: center; margin-top: 10px;">  </div>
<p>Attend an Open Space session that inspires you.</p> <p>What action will you take next:</p> <div style="text-align: center; margin-top: 10px;">  </div>	<p>Talk to this Event Sponsor organization below about any SEM topic!</p> <div style="text-align: center; margin-top: 10px;">  </div> <p>Write the topic you discussed and whom with below:</p>	<p>Talk to this Event Sponsor</p> <div style="text-align: center; margin-top: 10px;">  </div> <p>List one service AESC has been offering since its founding in 1994. Write it below:</p>



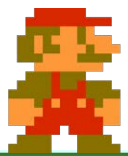
Agenda

- 8:00 AM Breakfast, Networking, & Family Feud
- 9:00 AM Welcome & Agenda
- 9:15 AM Next Level SEM, Examples
- 9:45 AM Treasure Hunt
- 10:45 AM BREAK
- 11:00 AM Group Photo
- 11:15 AM NASEMC, NWSEMC Updates
- 11:30 AM Gamification
- 12:00 PM Lunch



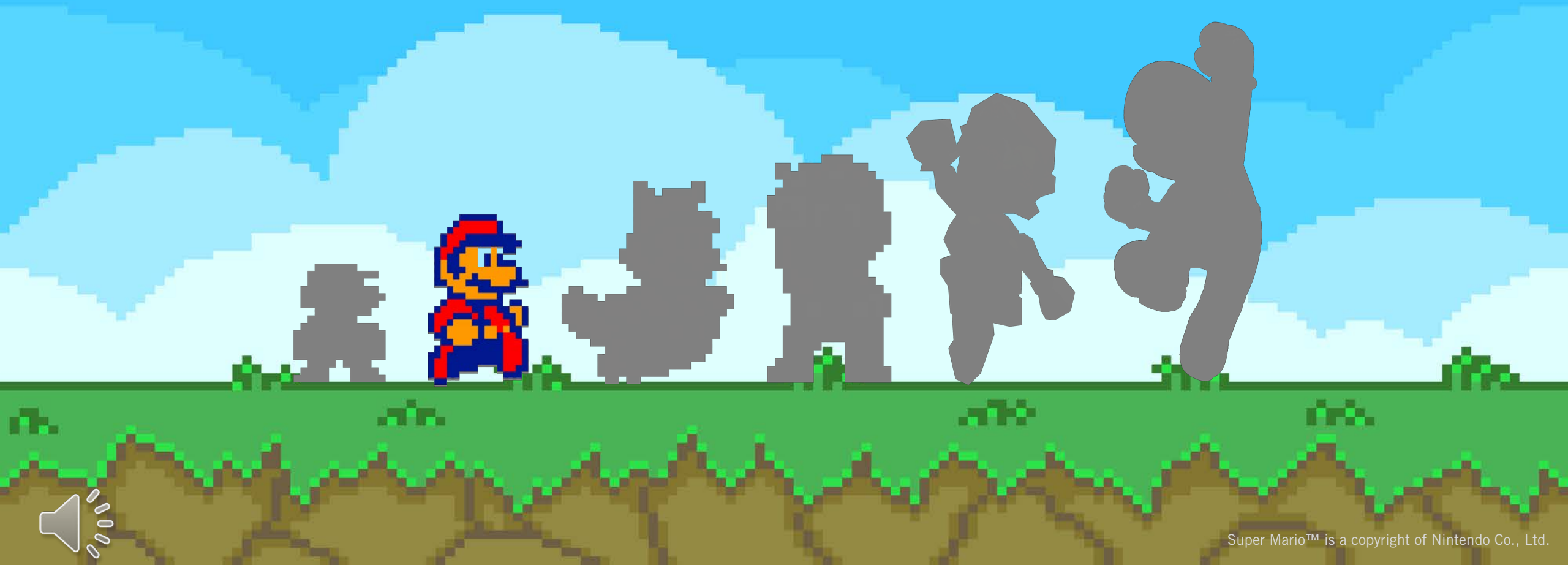
Agenda

- 1:00 PM Working Group Report-Outs
- 2:00 PM BREAK
- 2:15 PM Open Space
- 4:00 PM Closing Remarks & Evaluation
- 4:10 PM Happy Hour
- 5:40 PM Close





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Next Level SEM!

- Peter, LBNL: Case Studies Database demo
- Kevin Fish, SEG: Training dashboard
- Lightning round!
- Kevin, BC Hydro: CEE SEM Subcommittee



CEE SEM Subcommittee

Kevin Wallace
BC Hydro





- Consensus that supporting decarbonization via SEM is the right approach and agreement with how the NW SEM working group has characterized the topic
 - “SEM is the foundation for achieving your broader carbon reduction goals beyond energy efficiency”
- Support for using the described alignment between ISO 50001 Ready Navigator and ERP framework as a starting point to determine a pathway for incorporating decarbonization into CEE SEM Minimum Elements
- CEE Committee will crosswalk SEM Minimum Elements with 50001 Ready as a starting point to draft a Min Elements decarbonization addendum
 - The addendum guidance will be for organizations and programs seeking to use the Minimum Elements to manage their energy related GHG emissions; it will be the responsibility of organizations to consider



- Draft Minimum Elements addendum by end of October
- Updated Initiative and Minimum Elements drafts sent to CEE SEM Committee by Thanksgiving
- CEE SEM Committee convenes at CEE Winter Meeting in Long Beach, CA, January 10-11, 2024, and Committee provides consensus on CEE materials by end of January
- *CEE materials sent to implementers and other SEM market actors for comment by end of January; Sixty-day comment period ends early April*
- Committee reviews comments and responds by end of April
- Committee will bring to CEE Board in early summer 2024, participation and promotion by members and other SEM market actors will follow Board approval



- **Current Activities**

- Update the EM&V section of the Initiative Description (terminology, EUL, evaluation approaches).
- Support broader decarbonization cost-effectiveness methods.

- **Potential 2024 Activities (finalizing in November)**

- Update program summary with measure life, participation duration, and other data to support cost-effectiveness.
- Case studies on SEM persistence and attribution approaches.
- Explore a collaborative research study to support consensus estimates of persistence, attribution, and post-program savings.

ISO Technical Committee 301

Energy Management and Energy Savings

- ISO 50001 Energy Management System
 - Continual improvement of energy performance
- New extension document to 50001:2018 for decarbonization
 - Energy management system prioritizing GHG emission reduction
 - Define relationship between energy performance improvements and energy related GHG emissions
 - Decarbonization targets and metrics
 - Once approved, 24-month development cycle

Treasure Hunt!

Instructor and Energy Coach,
Marti Mendenhall, SEG



Instructions:

- Break into Groups
- Choose:
 - ✓ 1 Leader/Map-Follower
 - ✓ 1 Timekeeper
- Follow the Instructions and Group Map in Order
- There might be special notes for some areas!
- Write your findings on sticky notes w/area



Instructions

- Let's Choose our Leaders
 - Please stand if you have previous TH Experience
- Participants
 - Look at the number on your nametag
 - Move to the assigned area in the Gym
- When your TH is finished:
 - Put stickies on the board!

- **Group A: Numbers 1-7**
- **Group B: Numbers 8-15**
- **Group C: Numbers 15-22**
- **Group D: Numbers 22-29**
- **Group E: Numbers 29-36**
- **Group F: Numbers 36-42**
- **Group G: Numbers 42-49**
- **Group H: Numbers 49-56**
- **Group I: Numbers 56-63**
- **Group J: Numbers 63-70**
- **Group K: Numbers 70-77**
- **Group L: Numbers 77-85**



BREAK



Group Photo – To the Theater!





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NW and NA SEM Collaborative Updates



General Transition Updates

Suzi Asmus
NEEA



Transition Committee

Chad Gilles

Kathleen Belkhatat

Suzi Asmus

Jim Volkman

Holly Farah

Genevieve London

Anna Kelly



MARKET

IDEAL

ANALYSIS

COSTOMER

Maintained and continued elevation of future northwest (NW) Strategic Energy Management (SEM) work, regionally and nationally, under the NA Collaborative

BRAND

EXPENSES

SALES

PEOPLE

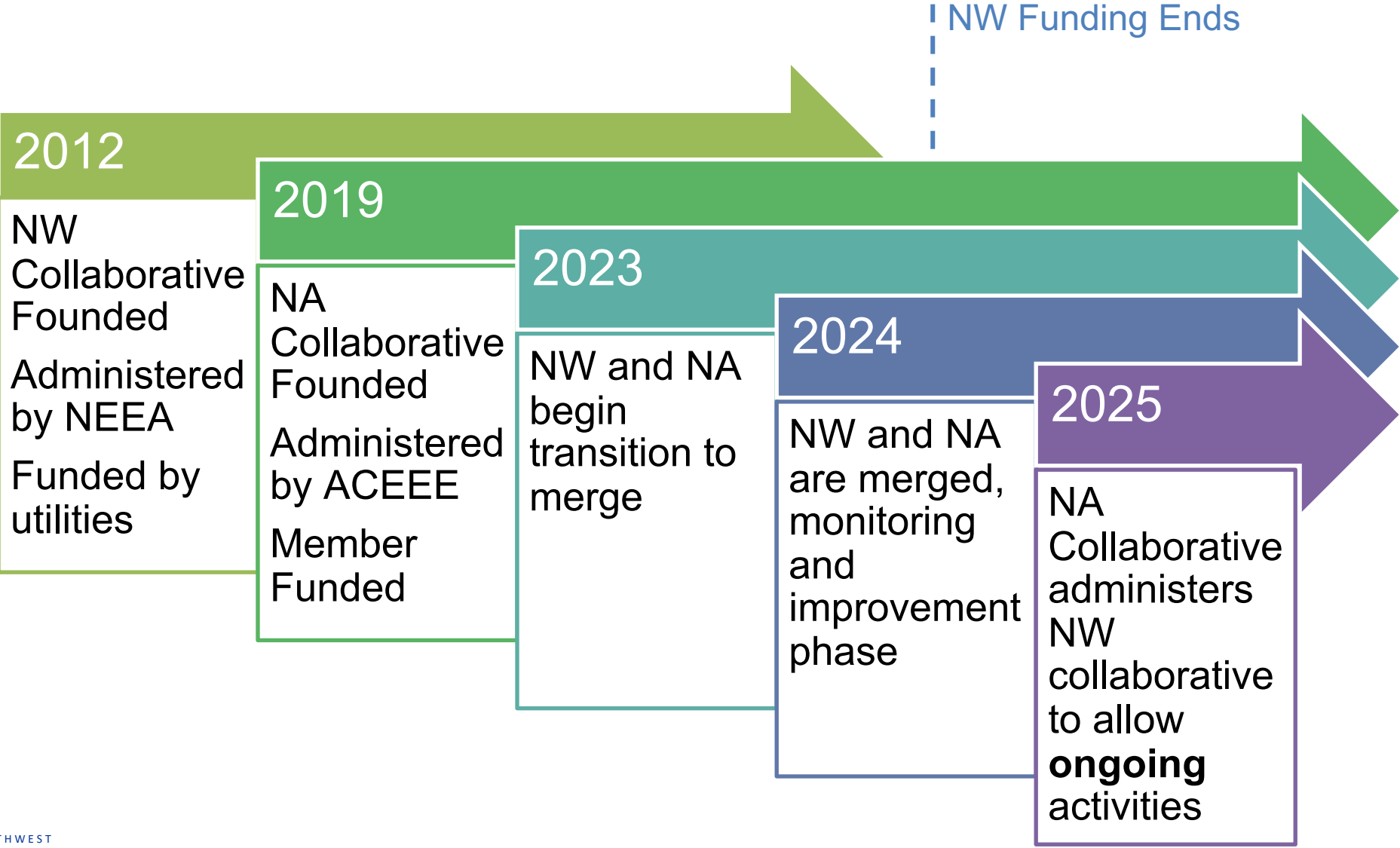
FORECAST

DEVELOPMENT STRATEGY

TEAM BUILDING

LONG TERM

Background



NWSEM Resources

SEMhub

**Energy
TalkCards**

EMA Tool

**Online
Training
Modules**



NA SEM Collaborative Updates

Holly Farah
Rouj Energy Analytics



What's been happening with NASEMC?

- White Paper Research with ACEEE:
ENABLING STRATEGIC ENERGY MANAGEMENT (SEM) TO SUPPORT U.S. DECARBONIZATION
- Leadership Team New Openings
- Updating Our Business Plan
- Creating Regional Chapters in North America Inspired by NWSEMC
- Membership Changes



Membership Changes

Membership Benefits	Gold	Silver	Bronze	2-5 person	1-person
	\$ 10,000	\$ 5,000	\$ 2,500	company	company
Newsletters	✓	✓	✓	✓	✓
Eligible to participate on working groups	✓	✓	✓	✓	✓
Quarterly Member's round table discussions	✓	✓	✓	✓	✓
Receive recognition on NASEMC website	✓	✓	✓	✓	✓
New Member breakfast prior to SEM summit with LT members	✓	✓	✓	✓	✓
Membership list and contact info	✓	✓	✓	✓	✓
Ability to nominate SEM participants for NASEMC/ACEEE awards program	✓	✓	✓	✓	✓
Sneak peek at research prior to public release	✓	✓			
Full Access to North American SEM Program Profile Database	✓	✓			
Receive recognition at annual SEM Summit	✓	✓			
Admission to SEM Summit	✓ (3)	✓ (1)			
Access SEM Summit registration list in advance	✓				
Introduce speaker or moderate panel at SEM Summit	✓				
Participate in discussion with the Leadership Team to select NASEMC's research topics	✓				

NASEMC offers special membership discount for certified diverse businesses.



NW SEMC Updates

Kathleen Belkhatat
Energy Trust of Oregon

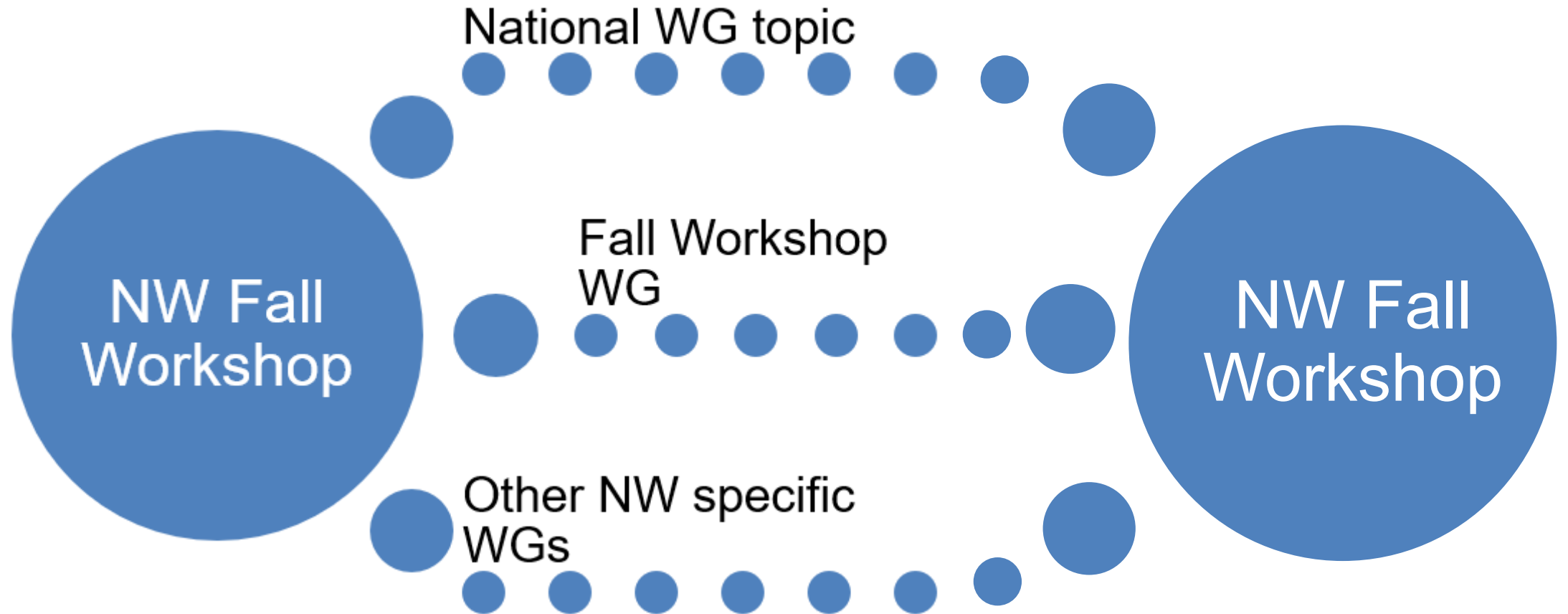


NW SEMC Updates

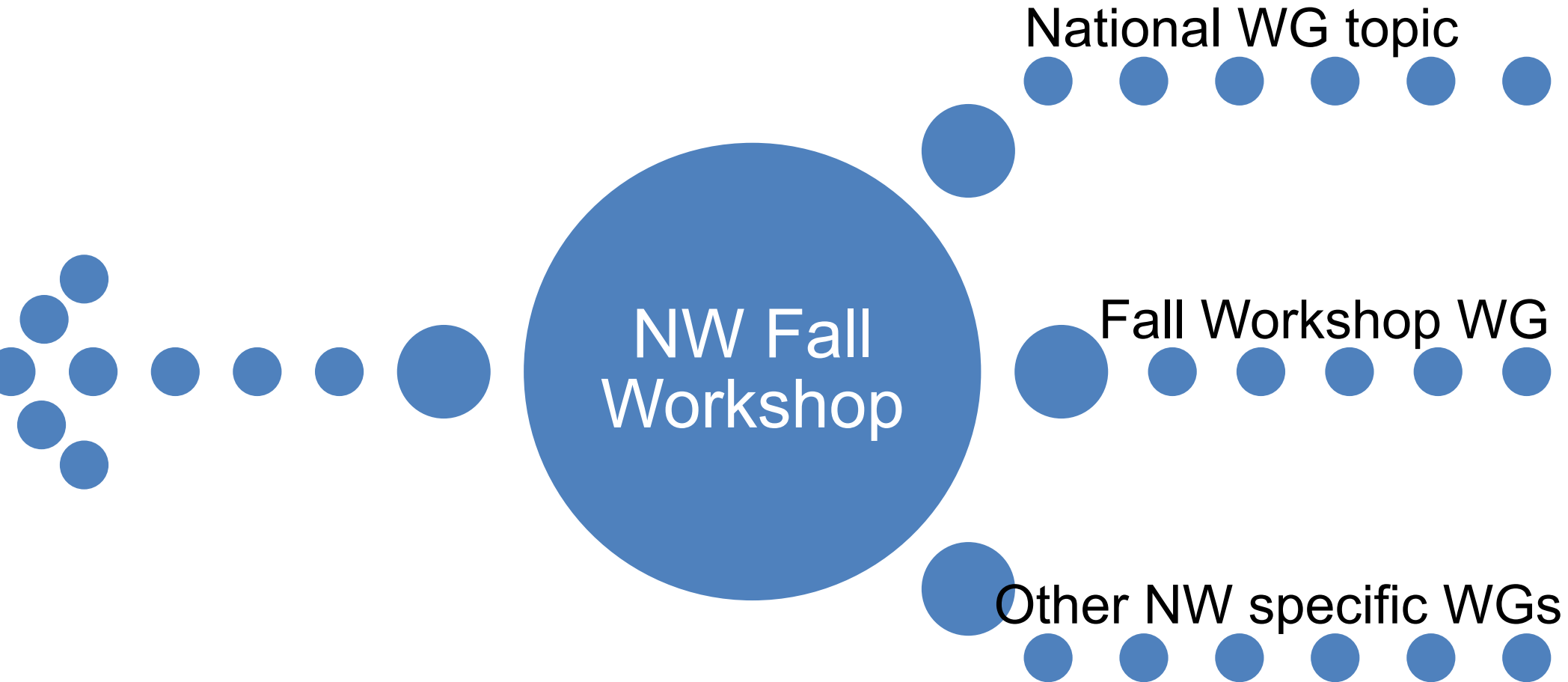
- Fall Workshop
- Regional Leadership Team
- Membership



Working Groups



Working Groups



Future Transition Updates

- **Webinars**
- **Newsletter**



THANK YOU!



Gamification

- Tamara, BC Hydro: Jeopardy!
- Josh, Prism Engineering: Non-game applications
- Lightning round!



Gamification



Definition

- Gamification refers to the application of **game mechanics** — like **points, badges** and **leaderboards** — to everyday activities, with the goal of nudging people's behavior.
- Gamification is all about making non-game activities feel like they're games.
- Adds **extrinsic motivation** to enhance participation and performance.



The 5 elements of gamification



**Progressive
Milestones**



**Real-Time
Leaderboards**



**Immersive
Experiences**



**Digital Badges
& Certifications**



**Social Community
Engagement**



Profile Strength: **Intermediate**



Which university or school did you attend?

Add your school so that classmates and alumni can easily find you

Does not apply

[Add education](#)



Starbucks





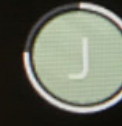
THE NEW
STARBUCKS®
REWARDS



Earn Stars faster and easier on
almost everything you buy

Collect stars with
every sip



41		harrydorn M · 60s	313
42		GBPackergirl F · 30s · WI #ThePhanto...	310
43		SassfroMass #ObiZONEKenobi	310
☆	45 MIN PERSONAL RECORD (512)		396
44		LeftShark M · 50s · #GetSithDone	308
45		jholloway7 M · 50s · Alabama	307



duolingo



Streaks



LUNCH



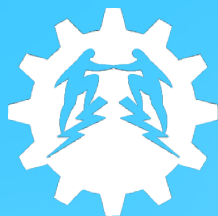
ENERGY 350

We're driven by the conviction that climate change is a problem we can solve...economically.

TRIVIA

*Team Trivia at your tables starting at 12:20PM!





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Working Group Report-Outs





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Evolution of SEM

10/19/2023



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Team Members

- April Cannon (ASK)
- Andrew Croy (SEG)
- Erin Wenger (SBW)
- Jim Volkman (SEG)
- Jude Kirstein (Energy 350)
- Suzie Asmus (NEEA)
- Tina Schnell (ASK)



Original Intent

- Primary Goal: Develop an understanding of the evolution of SEM in the Northwest
- Outcomes:
 - Develop database of metrics
 - Establish reporting mechanism
 - Modify or add metrics as appropriate
 - Deliver presentation to report findings at Fall Workshop and upload presentation to NW SEMHub
 - Identify needs (frequency, responsibility, etc.) for ongoing reporting and analysis



Early Stage

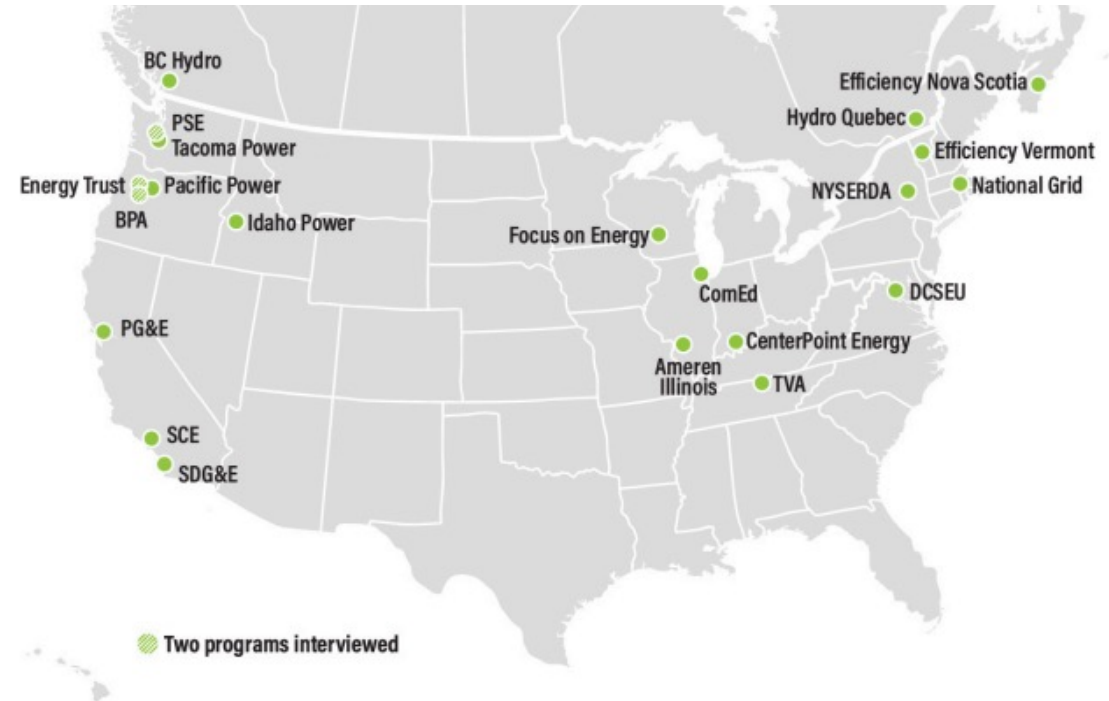
Data gathered in metric tab
 Data unavailable but may be useful if obtained
 Data not gathered - unavailable or not-applicable

METRIC (*denotes metric found in more than one source)	Changes Tracked/Intended Outcomes	NW SEM Collab Survey	NEEA (Regular Reporting, 2016 - Present)	CEE Survey	ACEEE 2019 Paper	SEM Meta-Analysis
Utility/Programs Offered*	Count of Utilities and Programs being offered for information on how widespread SEM is. Ideally collect notes/data on pilot programs vs mainstream.	Utility Name of utility completing survey	List of Utilities reporting savings to NEEA by year since 2016	Utility Name of utility completing survey	List of utilities/states with SEM programs at time of report. National.	Lists programs that were evaluated in the meta-analysis
Market (C, I, or Both)*	Count of Commercial, Industrial, and Mixed programs for information on how widespread SEM is.	Sector of program related to survey (utilities instructed to do different surveys if they operate in both markets)	List of Utilities reporting savings, organized by C and I since 2016	Sector of program related to survey ("target segment")	Details on some programs are written in program profiles included in the report	Available for some programs/years
Sector (sub-market)*	Gain a sense of sector focus over time, potentially with counts to understand sectors over time.	NA	NA	Potentially captured in "target segment"	Details on some programs are written in program profiles included in the report	Sector information captured for many programs
Program Duration/Age of Program*	Ideally related to the Sector/Markets above. Program durations can help develop a picture of dedication to SEM and how that has changed over time.	Select year that survey responses apply to	Unable to determine what the specific programs are, but can see when/how long Utilities reported SEM savings	Age captured in "Program Characteristics" question	Details on some programs are written in program profiles included in the report	Program duration captured
Delivery Structure/Defining Characteristics*	Information around characteristics being used (CEE min elements, program-specific) and how program is delivered can help show high-level if there is cohesion/common themes through design. This will include 50001/50001 Ready and associated resources.	Information on incentives offered and program success metrics for individual orgs	NA	Defining characteristics include: CEE min elements, cohort model, customer support, etc.	Details on some programs are written in program profiles included in the report	Some info available
# organizations enrolled (how many customers are being served?) & Changes over time*	Understand how many organizations are involved in SEM over time	Number of organizations enrolled during survey year	Number of Facilities aggregated by year since 2016 for both C & I	NA/unsure	Numbers included at national level	Available for some programs/years



Metrics

- Questions to consider
 - From who's perspective?
 - What to measure?
 - What's available now?
 - What/when is the baseline?
- Minimum stats
 - Programs available (industrial/commercial)
 - # of different organizations served (industrial/commercial)
 - # of units served (industrial/commercial)
 - Longevity of programs
 - Sectors supported (some SEM is sector specific)
 - Delivery framework (CEE elements primary)
 - Claimed energy savings (or other....TBD)
 - Measure life claimed



Sample of active SEM programs in 2021
<https://www.aceee.org/sites/default/files/pdfs/ie2101.pdf>



Current State

- Incorporate and align previous relevant data with the CEE Survey
- Dashboard housed on SEMHub/PowerBI
- Ongoing support needs
 - Annual CEE Survey
 - Analyze CEE Survey data
 - Formatting of the survey for ease of analysis
 - Update metrics based on survey responses
 - Review and analyze data annually
- Utility participation in future CEE surveys (ongoing updates)
 - **22 program responses** for 2021-2022 survey, thank you!

Organization Details
SEM Program Details
Program Uses the CEE SEM Minimum Elements in the Following Ways
Program is Required to Report the Following Information to Regulators
Required Program Cost Effectiveness
SEM Related Savings Claimed
Program Evaluation
Program Support for Obtaining and Demonstrating Participant Commitment to SEM
Program Support for Energy Assessment and Planning
Program Support for Education and Training
Program Support for Energy IT and Energy Management Information
SEM Program Incentive Structure
Post-Implementation SEM Support
Support for Other SEM Pathways



Next Steps

- Host data on platform that will persist beyond 2024
 - NEEA may not be able to host data in future
- Expand program data collection for 2025
 - How to convince programs to submit survey
- Want to get data collection/integration systems in place for NW programs before expanding to include more data
 - Opportunity to leverage data management best practices from manufacturing or other data-heavy sectors?
- Plan to expand to North American wide focus
 - Would need to get permission from utilities to share data



Questions?



THANK YOU!



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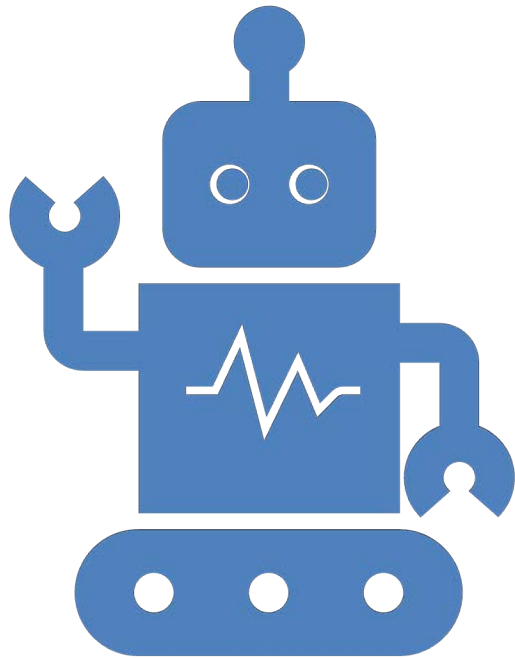
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Advancing M&V Techniques Using Machine Learning & AI

2023 Fall Workshop
M&V Working Group Recap



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M&V Working Group

- 2023 Focus:
 - Future of M&V
 - How can Machine Learning and AI be utilized in M&V Efforts?
 - What are the current roadblocks/concerns with AI as it relates to M&V
- Workshops Held:
 - Webinar 1: Kick-off and gather ideas
 - Webinar 2 & 3: Applying AI to Energy Data Analytics

2023 M&V Working Group Team

- Group Leads:



Holly Farah



Graham Goodman



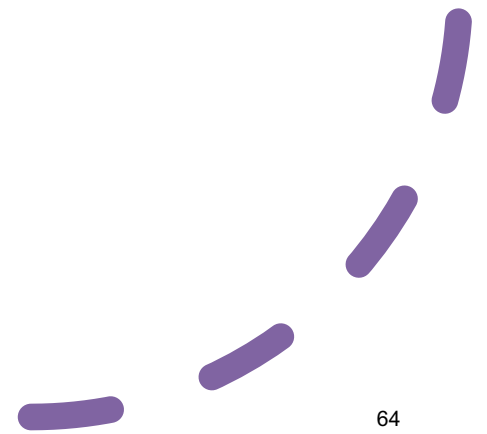
Andee Morton

- Average Webinar Attendance: 25 team members



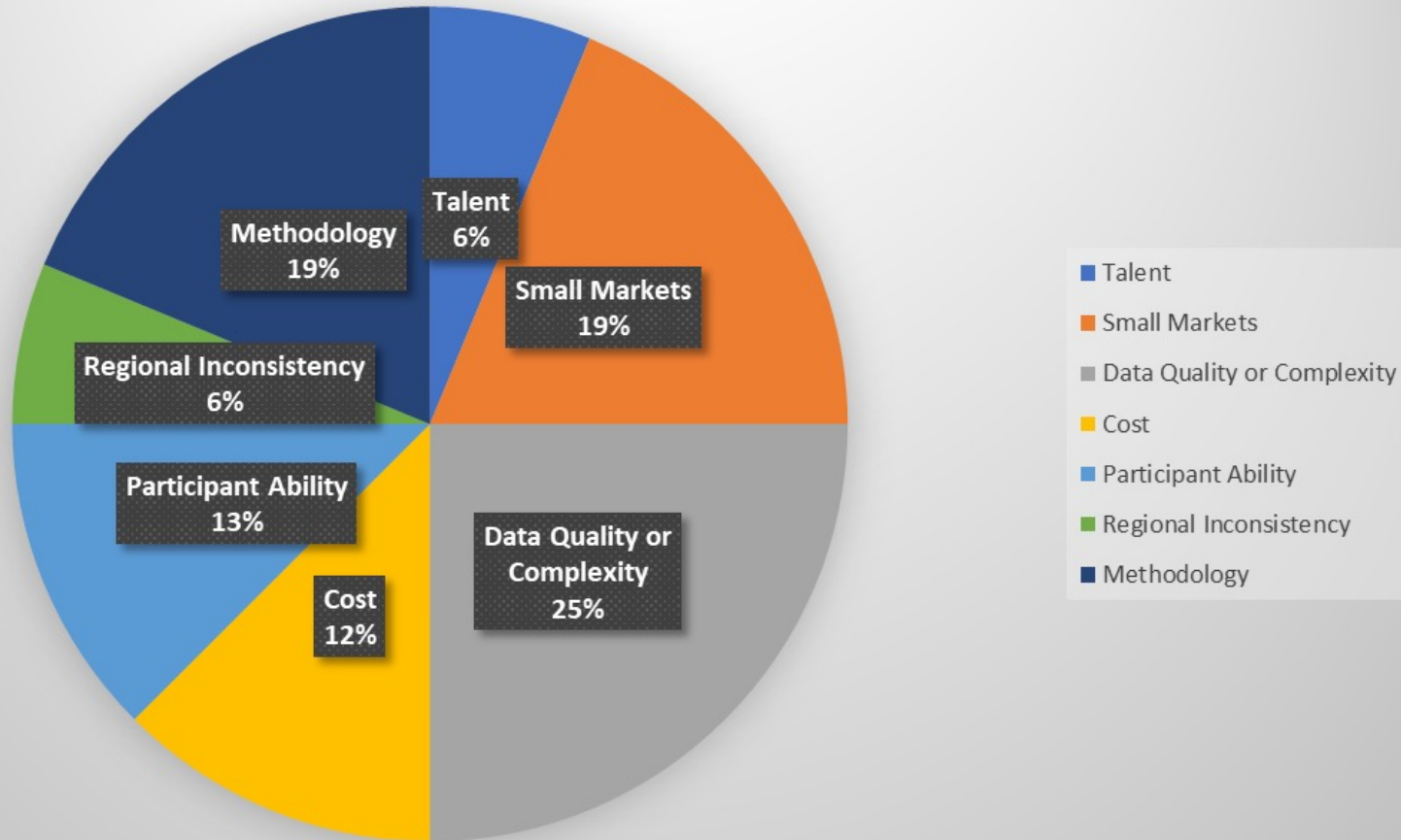
Webinar Recap:

- Webinar 1:
 - Intros
 - Compiled list of interests from survey
 - Determined focus for the year



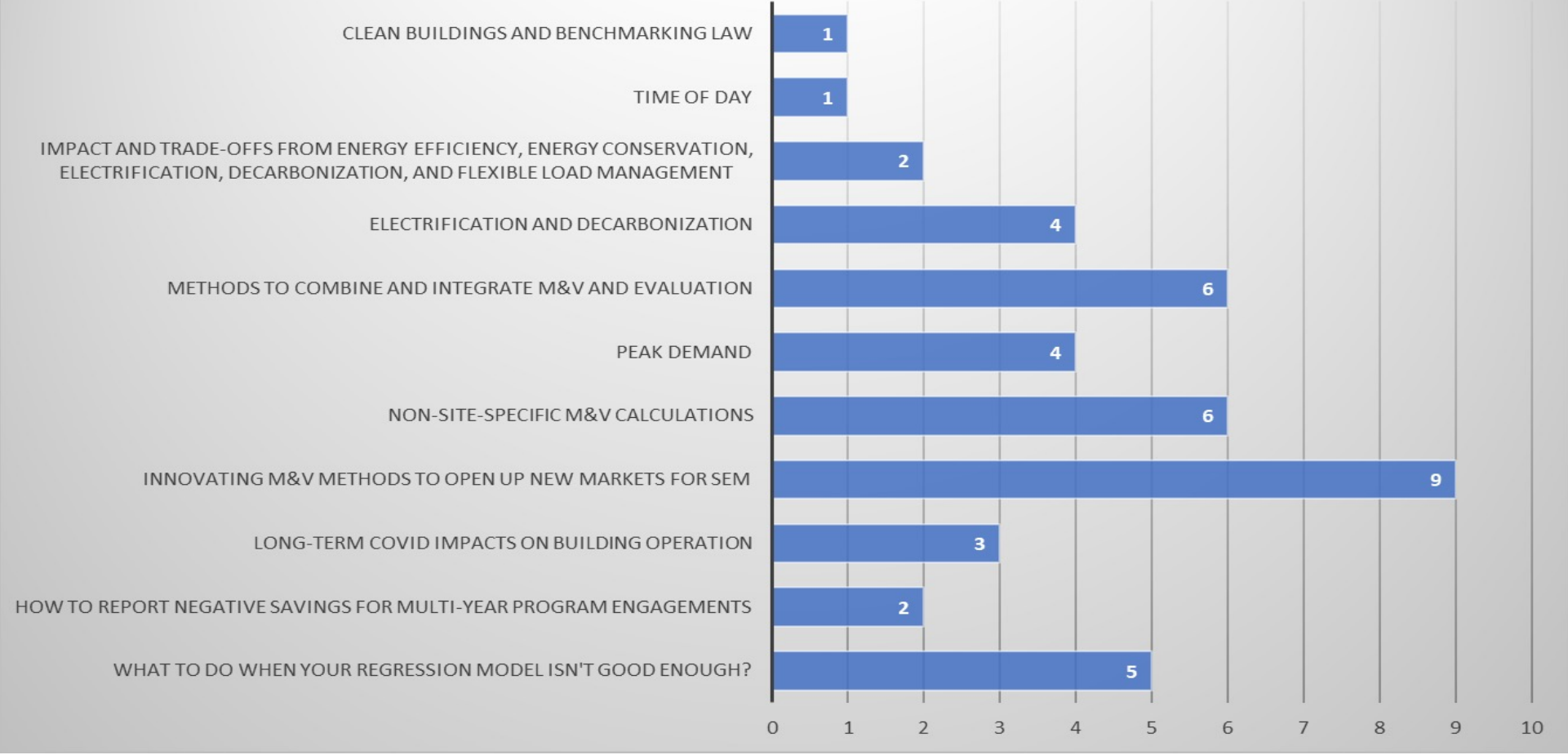
Survey Results

What do you think are the main M&V barriers for scaling SEM programs?



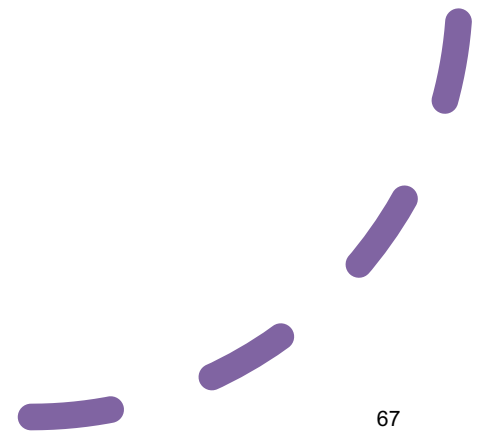
Survey Results

What topics are you interested in hearing about this year for presentations or panel discussions?



Webinar Recap

- Webinar 2 & 3:
 - Applying AI to Energy Data Analytics featuring Haris Dindo, AI scientist



AI/ML -- Advancing Analytical Techniques for Strategic Energy Management Programs

Went over classical definitions of AI and ML: “The science and engineering of making machines able to perform tasks commonly associated with intelligent beings”

- **AI:** An umbrella name for numerous subfields:
 - Natural Language Processing
 - Computer Vision
 - Speech Recognition
 - Robotics
- **Machine Learning (ML):** The part of AI studying how computer agents can improve their perception, knowledge, thinking, or actions based on *experience* or *data*
For this, ML draws from computer science, *statistics*, control theory, psychology, neuroscience and economics



Machine Learning vs. Statistics



Relevant AI/ML Applications

- Energy usage and demand forecasting
- Finding patterns and anomaly detection (consumption, fault detection and diagnostics)
- Model degradation
- Chatbot for data collection and/or customer support



Webinar 3: Case Study

Creation of a (data-driven) ML model to forecast energy consumption pre and post baseline (i.e., intervention)

Facility type: Educational / Institutional

Period of study: 01/2022 - 03/2023



Webinar 3: Methods Used

We treated this is an ML problem: build a model capable of accurately predicting the consumption on any given day

- Used 2022 as training/validate/test set
- Deployed the model - as is - for 2023 and estimated the expected consumption without any intervention
- Disregarded the sequential nature of data and treated each day independently

Models

- Random Forest Regression
- XGBoost
- ~~Timeseries (ARMA and variants)~~



Webinar 3: Case Study Results

- **Starting point: Regression Model**
 - In-sample MAPE: 3.33%
 - Out-of-sample MAPE: 3.61%

- **Random Forest Regression**
 - In-sample MAPE: 2.19%
 - Out-of-sample MAPE: 3.97%

- **XGBoost**
 - In-sample MAPE: 0.59%
 - Out-of-sample MAPE: 2.94%



Major Takeaways

- Beyond the hype, AI and ML in particular are well suited for problems involving noisy and/or missing data; this applies to forecasting, classification, clustering, and many other real-world scenarios
- Results show a clear improvement over classical methods
- Many useful ML models are not black boxes, but their inner functioning on specific data points can be explained



Successes

- Provided 2 webinars from an industry expert to talk about Machine Learning and Artificial Intelligence as it relates to SEM M&V
- Engaged group on the subject chosen
- Identified possible obstacles in adoption of machine learning for M&V





Perceived Barriers

- Fear of the unknown
 - Data security
 - Errors/bad data going unchecked
 - Accuracy



Join Us in 2024

- Northwest SEM Collaborative will be merging with North American SEM Collaborative

Questions?



THANK YOU!



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SEM + GHG WG Update

Oct 19, 2023



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Core Team Members

- Pam Birkel, Sara York (Cascade)
- Peter Therkelsen, Bill Miller (LBNL)
- Robert Greenwald (Prism)
- Josh Weissert (Energy 350)
- Kevin Wallace, Malcolm Wheeler (BC Hydro)



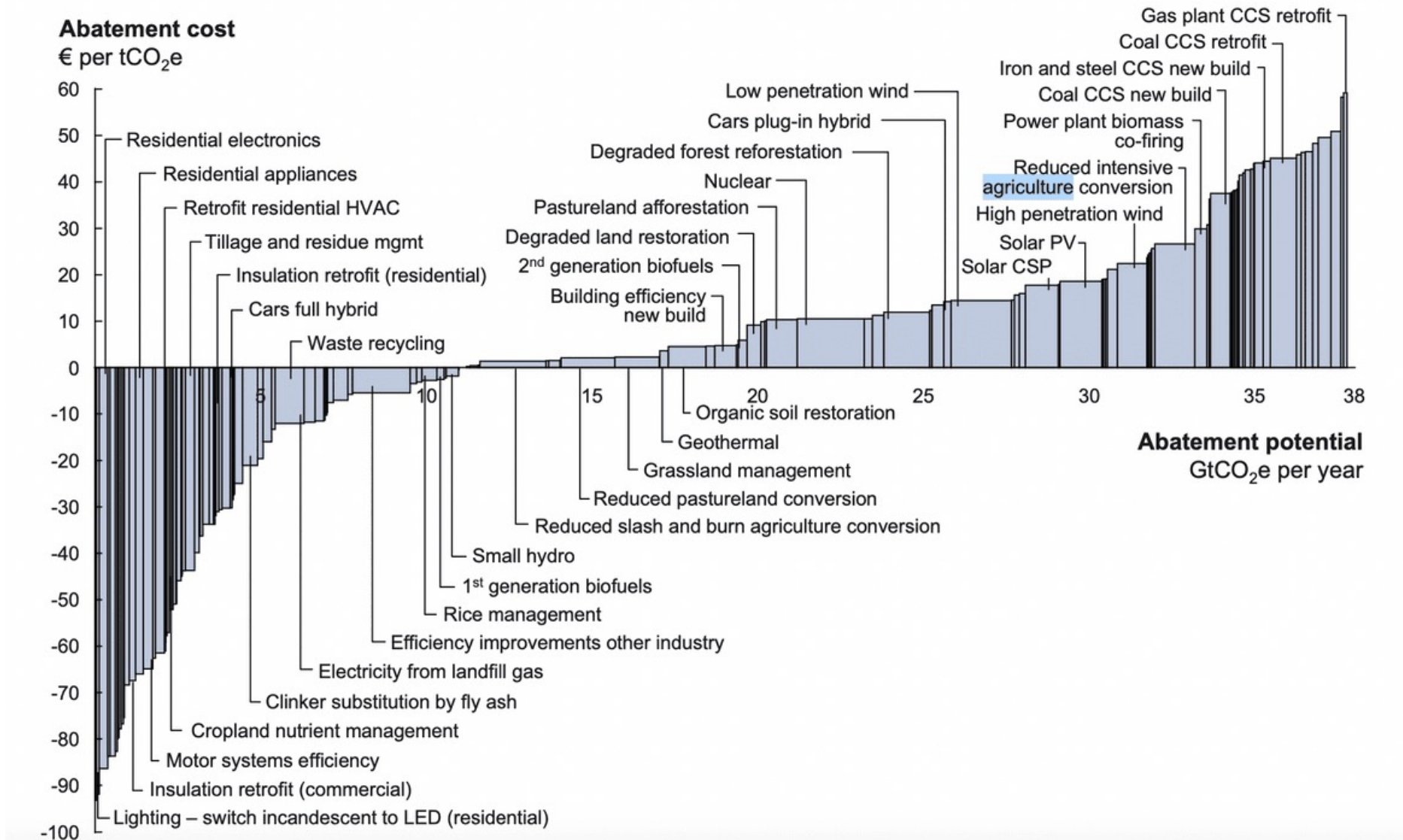
2022 Key Message

“SEM leads to carbon reductions”

Implementing an SEM program will provide cost effective Scope 1 and 2 emission reductions, which can count towards your targets.



Global GHG abatement cost curve beyond business-as-usual – 2030



Global GHG abatement cost curve beyond business-as-usual – 2030

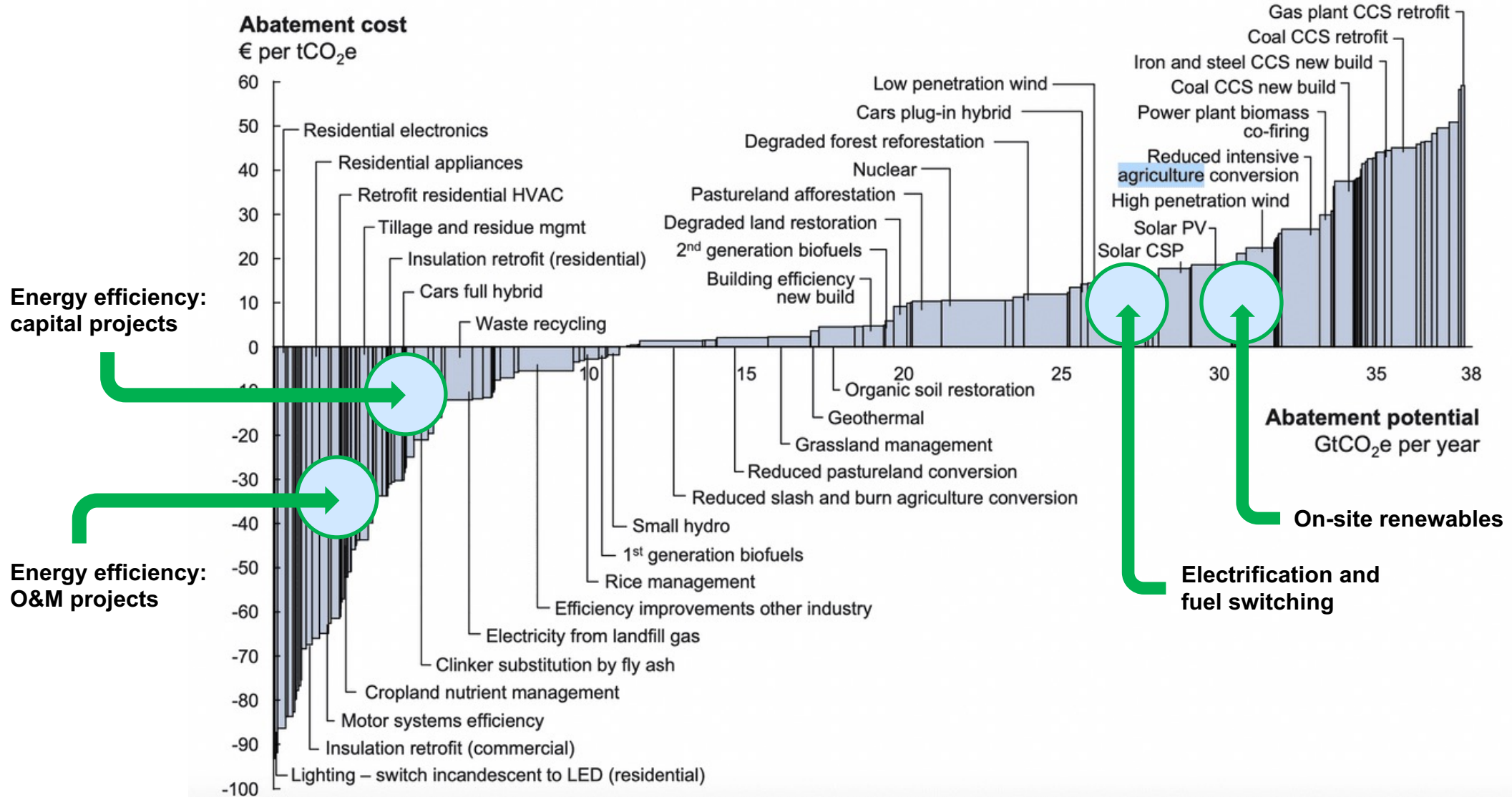
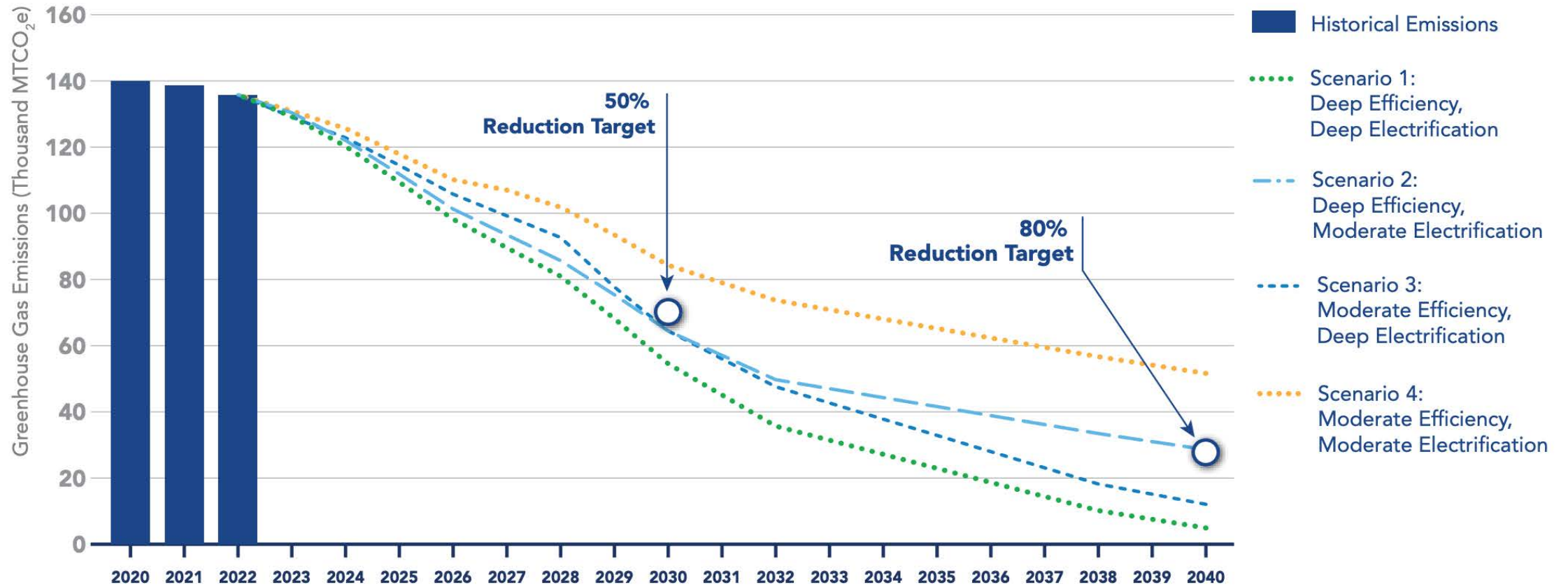


FIGURE 13. Portfolio-level Emissions Reduction Scenarios



2023 Key Message - Vision

“SEM is the foundation for achieving your broader carbon reduction goals beyond energy efficiency”

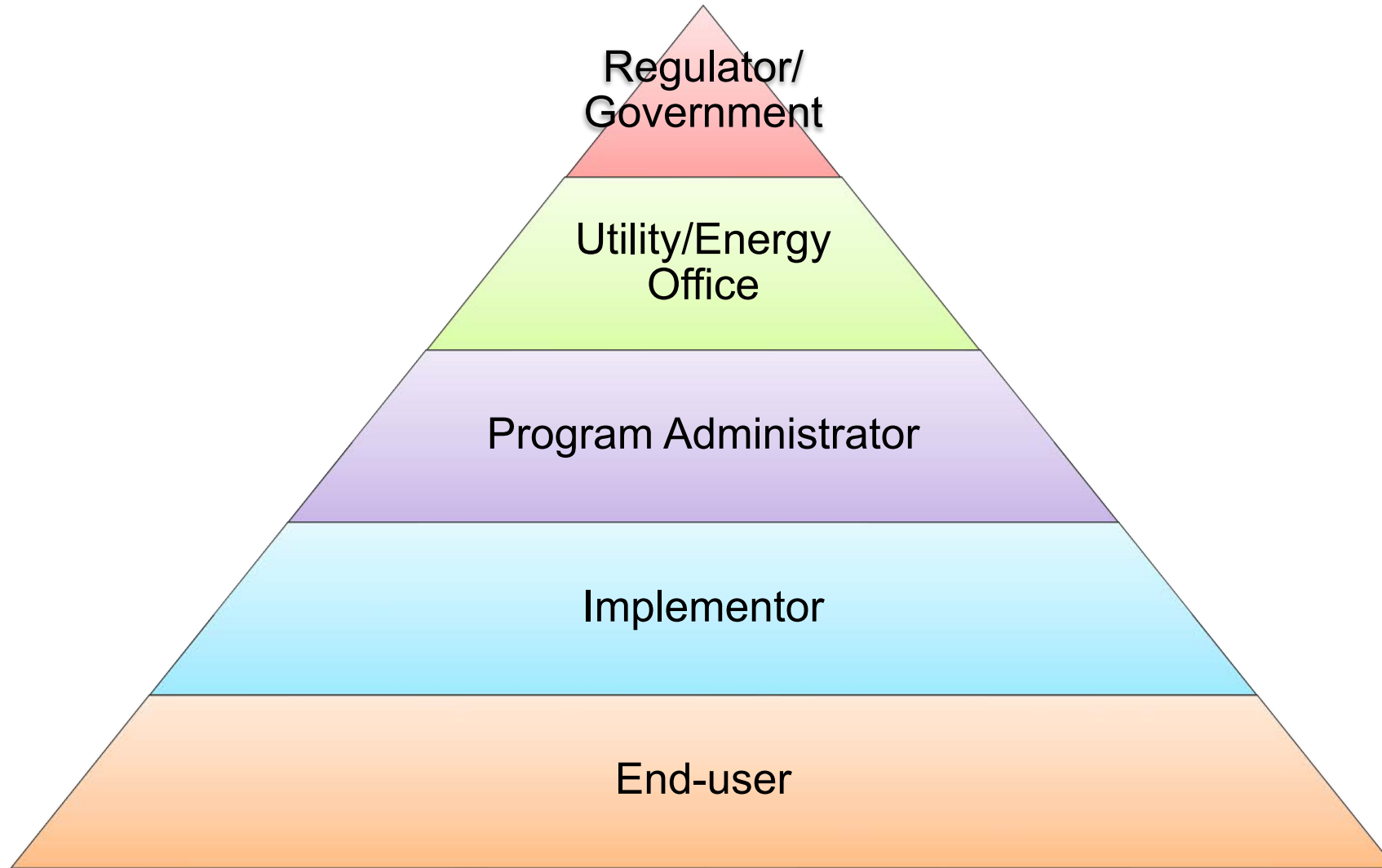
You have emission reduction targets but are not sure how to get there:
SEM is the platform to most cost effectively meet your targets.



Target Audiences



Target Audiences



SEM Program Administrator

- Why: Gaining buy-in and giving them good information for greater utility communication and program adoption
- Where: Implementer/PA conversations, participant/utility conversations
- Message: SEM practitioners have deep relationships with large energy users in commercial, industrial, and agricultural settings. We are a resource in place and ready to deliver on decarbonization goals beyond SEM's typical boundaries. Future programs and RFPs should include carbon savings in the value proposition. SEM should include electrification, renewables, energy storage, load shifting, non-energy emissions. We can make it easy for you.



End User

- Why: Your organization has set emissions reductions goals with timelines for progress by 2030, 2040 and 2050.
- Where: The states and provinces where you have operations.
- Message: SEM is very cost effective and provides others benefits. It includes both operational actions for your staff as well as capital projects to reduce energy and emissions. Lowers the overall cost of meeting emission targets and includes Scope 1 and 2 as well as Scope 3.
- Who: Implementor or PA conversation with potential new SEM participants.



Toolkit Resources

- The following slides are the resources that are currently available to support the key messages
- Links are included in this slide deck
- The plan is for all resources to reside on SEM Hub



SEM as a Pathway to Decarbonization

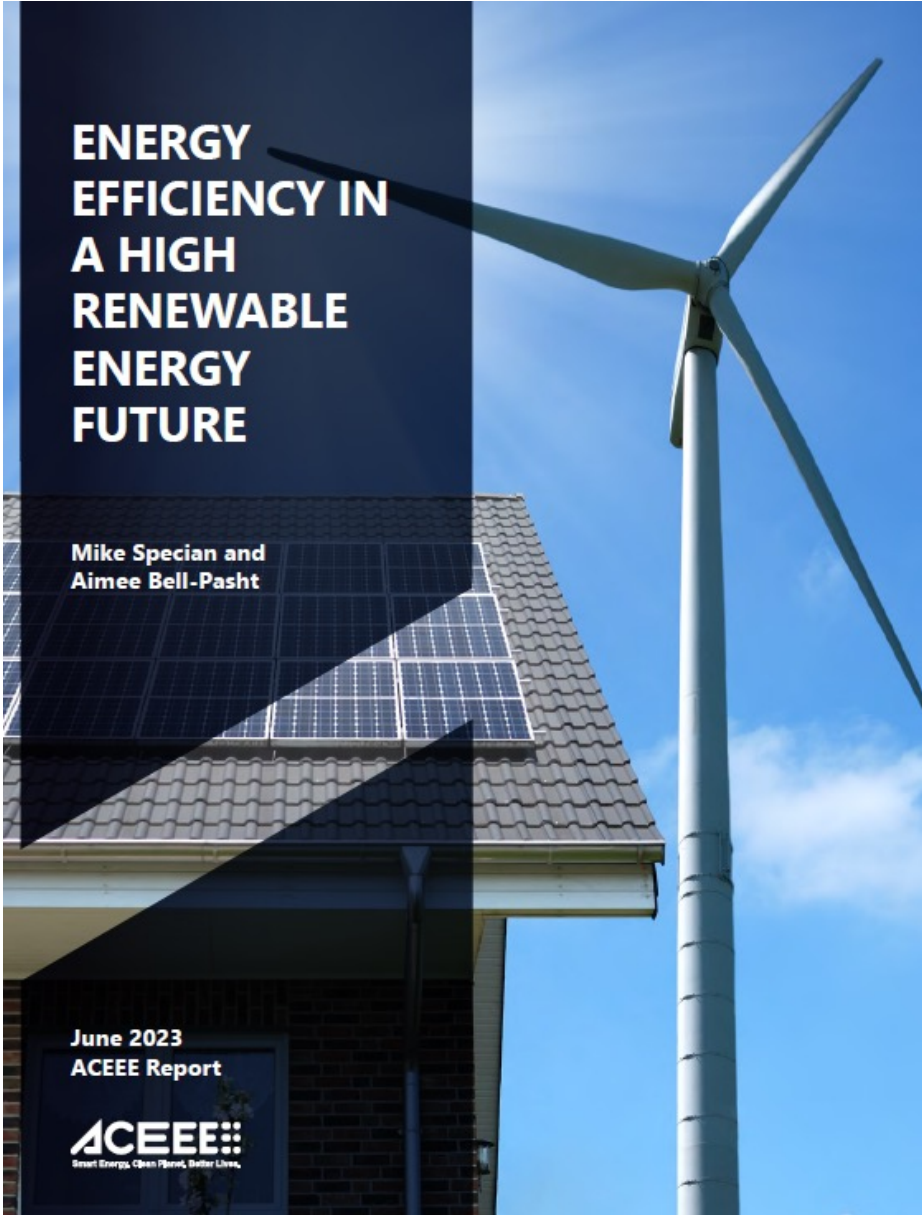


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SEM is the ideal platform for decarbonization that, in addition to reducing utility-supplied energy use, can reach beyond energy efficiency to achieve GHG reductions in all energy aspects of companies' businesses.



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ENERGY EFFICIENCY IN A HIGH RENEWABLE ENERGY FUTURE

Mike Specian and
Aimee Bell-Pasht

June 2023
ACEEE Report

ACEEE
Smart Energy. Clean Planet. Better Lives.



ENABLING STRATEGIC ENERGY MANAGEMENT (SEM) TO SUPPORT U.S. DECARBONIZATION

Jonah Eisen and Anna Johnson
July 2023

ACEEE
Smart Energy. Clean Planet. Better Lives.



Carbon Management Requires Energy Management

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy



ACEEE Energy Efficiency as a Resource

October 19, 2021

Peter Therkelsen, Ph.D.
Lawrence Berkeley National Laboratory
ptherkelsen@lbl.gov



**Milestone 1:
Establish Inventory
& Scope of Work**

Engage stakeholders and align the inventory management plan, emissions reduction targets, and ERP scope of work



**Milestone 2:
Categorize
Portfolio**

Select buildings and central plants that represent the portfolio for audits



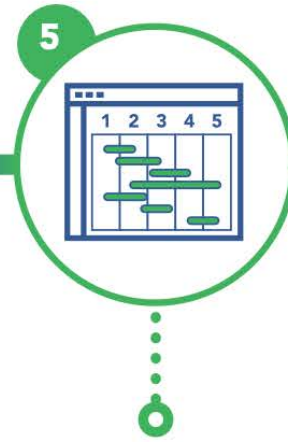
**Milestone 3:
Assess Measures**

Complete audits and assessments and select emissions reduction measures (ERMs)



**Milestone 4:
Develop Scenarios**

Combine building and fleet ERMs with renewable energy supply options to develop scenarios



**Milestone 5:
Define Emissions
Reduction Plan**

Assess scenarios, select pathway, define funding and phasing, and approve plan



**Ongoing
Implementation**

Execute emissions reduction plan and update implementation strategies over time

Emissions reduction planning: Revise the plan every 3-5 years

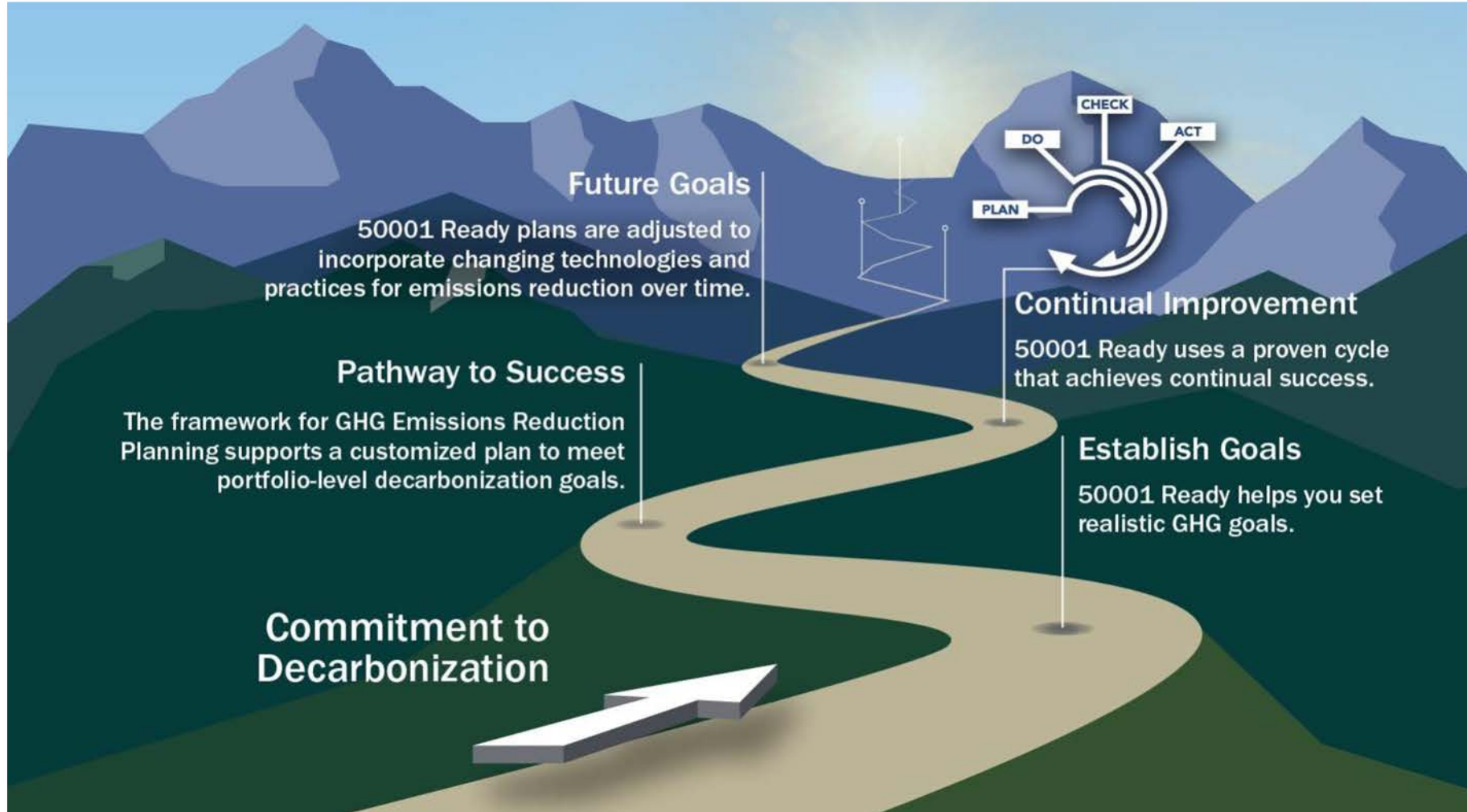


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Framework for
Emissions Redu
Building Portfo





The Emission Reduction Planning Framework and 50001 Ready can be leveraged in parallel to build an actionable plan and organizational culture that supports decarbonization.



50001 Ready
U.S. DEPARTMENT OF ENERGY



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YVR's Roadmap to Net Zero Carbon 2030

To reach net zero carbon emissions by 2030, there are four decarbonization pathways that need to be pursued to achieve net zero emissions:

1. **Greening vehicle fleets** - Investing in electric vehicles while also right sizing them to match operational requirements and switching to renewable fuels for heavier equipment.
2. **Building energy conservation and electrification** - Meeting operational requirements more efficiently and using less energy for heating/cooling, cooking, lighting and other electrical loads. Switching from natural gas to electricity where possible.
3. **Replacing fossil fuels with renewable alternatives** - Investing in 100% green electricity and on-site solar, supporting green kitchens, securing renewable natural gas for heating/cooking, and purchasing renewable diesel for generators.
4. **Closing the gap** - Investing carbon removals for the emissions that remain.



Video Link: [YVR 's Roadmap to Net Zero Carbon 2030 - YouTube](#)



BC Hydro Commercial Energy Manager Program

- Approx 60 organizations in the program
- Program requirements include an annual SEMP
- Most have GHG reduction targets outlined in their SEMP
- The 5 examples are from organizations websites that show integration of GHG goals in the SEMP



BC Hydro Commercial Energy Manager Program

- <https://corporate.bcllc.com/content/dam/bclccorporate/reports/accountability/2022/Climate%20Change%20Accountability%20Report%202021.pdf>
- <https://www.dnv.org/strategic-energy-management-plan-semp>
- <https://www.surreyschools.ca/page/191/energy-management-sustainability>
- <https://www.vcc.ca/media/vancouver-community-college/content-assets/documents/reports-publications/vcc-strategy-energy-management-plan.pdf>
- <https://www.islandhealth.ca/sites/default/files/environmental-sustainability/documents/semp-2021.pdf>



Next Steps

- NW SEM C – now is the time to broaden the WG
- NA SEM C – desire to launch a decarbonization WG
 - Is decarbonization a regional topic/issue?
 - Hybrid model?
- What are the gaps in resources (i.e. toolkit)?
- Call to action: everyone in attendance today agrees to present the material in the toolbox to at least one target audience!



Non-energy Benefits



Non-energy Benefits

NEB



Non-emissions Benefits

“Energy savings is a non-emissions impact of decarbonization”



Questions?



THANK YOU!



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Beyond the E Workgroup Recap

2023 Fall Workshop
October 19, 2023



Cian

Beyond
the E





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TIME
107

SUPER MARIO BROS.

© NINTENDO 1985

1 PLAYER
2 PLAYER

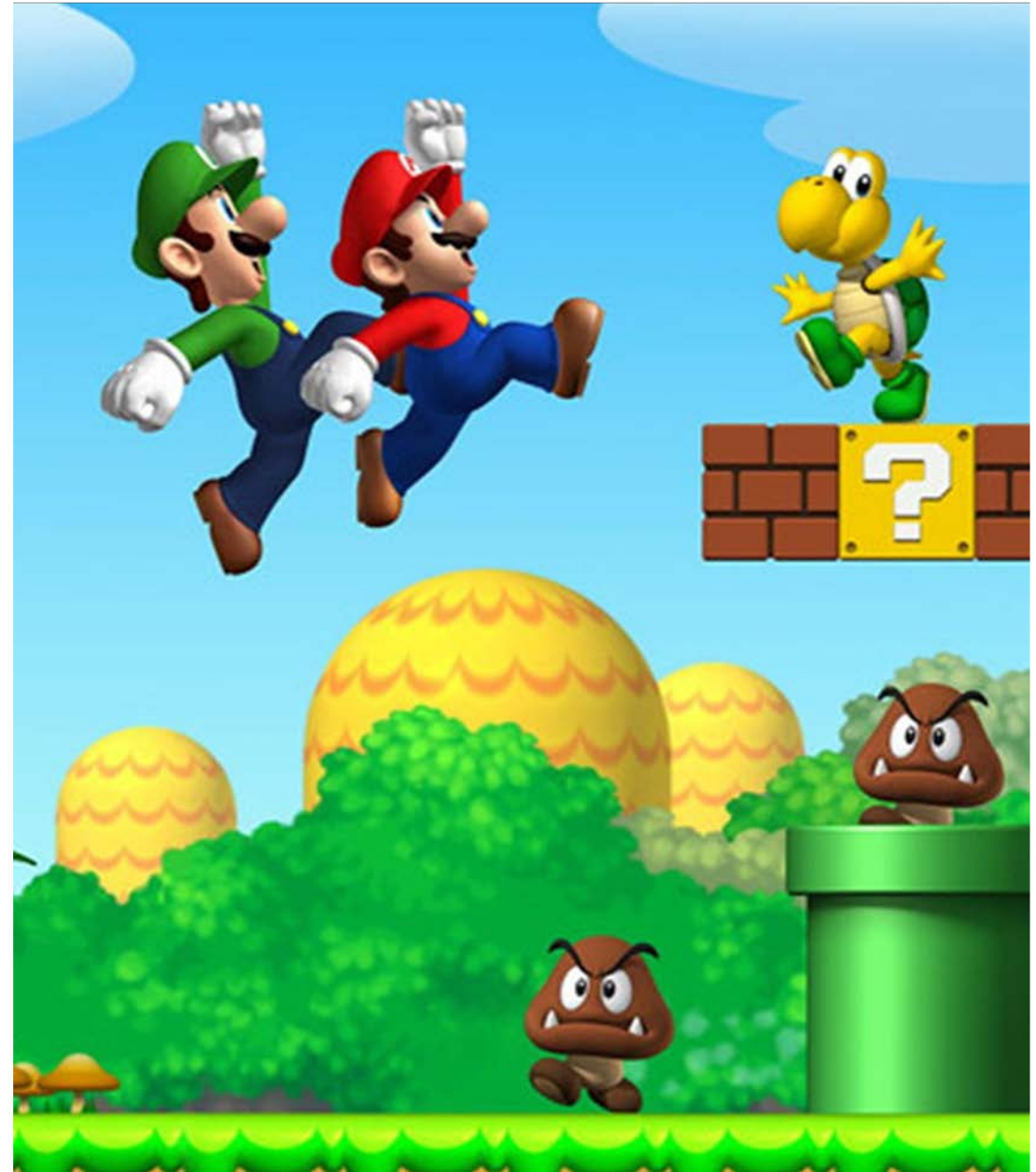


WACKYBOSFUN.COM



Beyond the E

Beyond the E centers around enhancing indirect and long-term benefits of SEM, such as customer service and engagement strategies, program design innovation, and incorporating non-energy resource conservation into SEM.



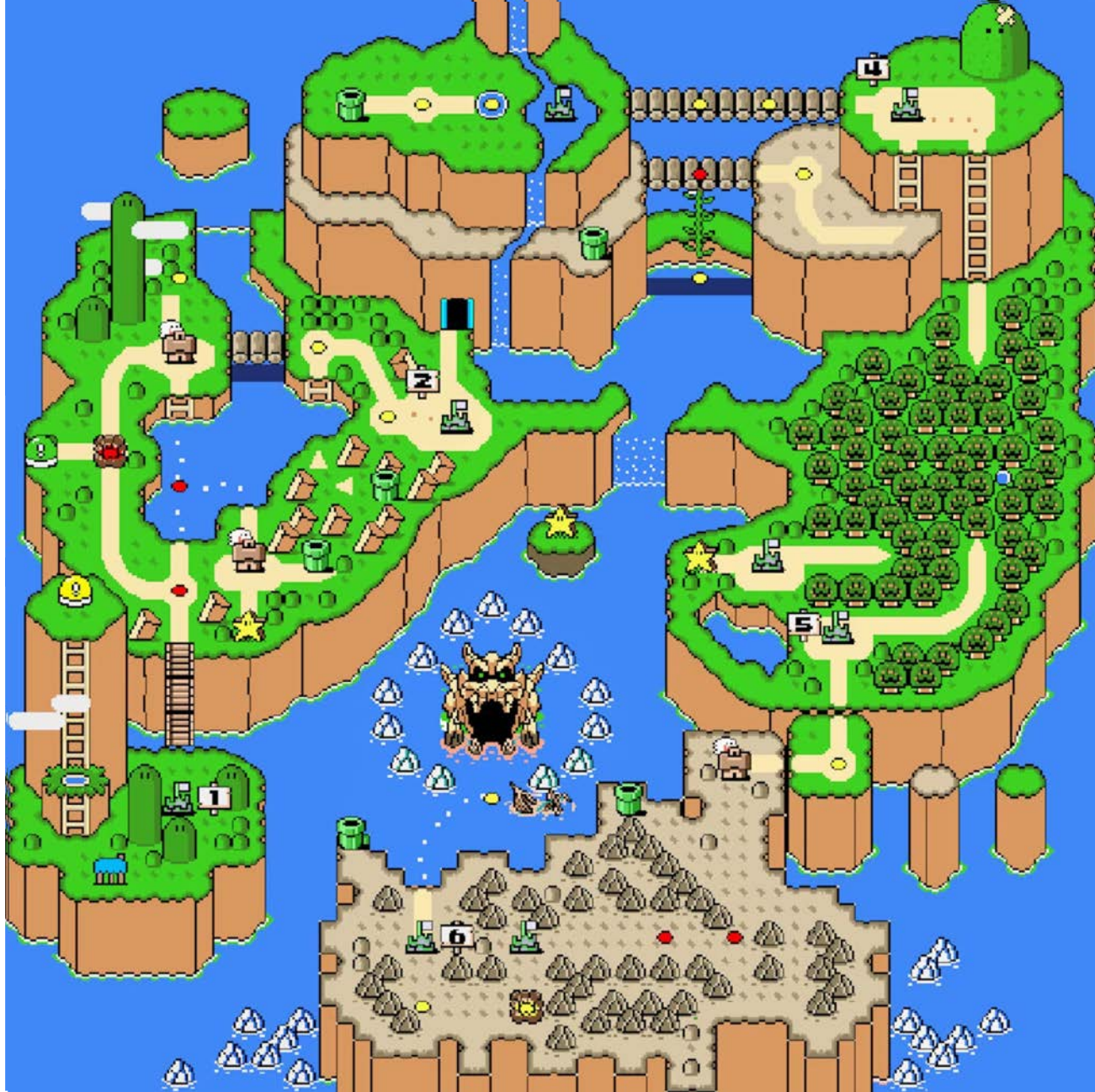
2023 Team

Group Leads: Karen Brooks, Lura Griffiths and Lana Stern
LT Sponsor: Kelsey Lewis



Members:

Kim Levan (Pause Meditation)
Kjell van Zoen (VanZoen LLC, AESC)
Zhou Fang (Intersectional Group)
Kevin Fish (SEG)
Kathleen Belkhatat (ETO)
Dave Hall (E350)
Jon Peterson (SEG)
Tiffany Welch (Power Takeoff)
Benjamin Lyon (ICF)
Logan Forbis (SnoPUD)
Josh Petosa (SnoPUD)
Tom Hovde (SnoPUD)
Shannon Hardman (Prism)
Lizzi Belmont (Cascade Energy)
Leslie Wright (PSE)
Romana Cohen (WSP)



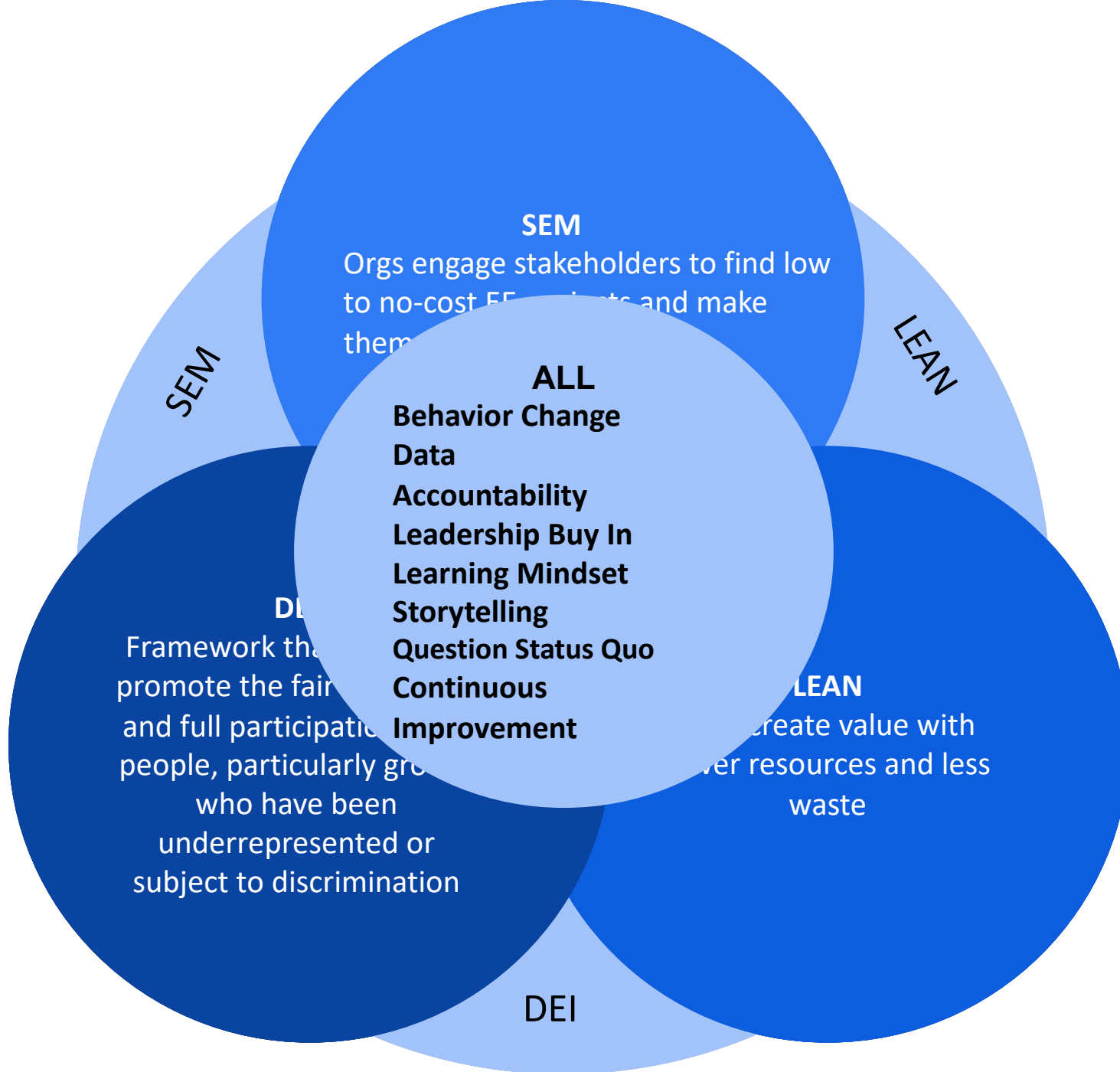
August 2023
- Work product phase 1

instorm

September 2023
- Work product finalize

October 2023
- Fall Workshop!





Work Product Goal: Talk about how to incorporate aspects of DEI and LEAN into an SEM-EMA Framework

SEM and DEI

This about minimum elements & DEI with program design and recruitment efforts

Customer Commitment

Policy and Goals Set, frame, and communicate long-range energy performance objectives through an energy policy and energy reduction goals.

Ensure that everyone is benefiting equally from the impact of the policy commitments and goals

Give everyone a voice and allow feedback on policy & goals

Ensure that the policy & goal is communicated to everyone - no one is left out (include remote employees and how they are important too)

demonstrating value to stakeholders/staff

involve community/all staff levels in the input process

think about how involvement is done (make it impactful and accessible to staff/community)

think about impact of decision making to community

Include DEI language in the policy "we commit to considering xyz when implementing changes and communicating progress"

Work Product Goal: Talk about how to incorporate aspects of DEI and LEAN into an SEM-EMA Framework

Goal: Talk about how to incorporate aspects of DEI and LEAN into an SEM-EMA Framework

Commitment: clear commitment is vital for programs to succeed

Policy and Goals: Set, frame, and communicate long-range objectives through policy and goals.

DEI	Lean
<p>DEI enhances policy and goals by involving more voices in the process. Engaging a variety of staff enables policies and goals to be more equitable and reduces the risk of negatively impacting stakeholders who are left out.</p>	<p>LEAN enhances policy and goals by promoting a systematic and continuous improvement approach that focuses on eliminating waste, increasing efficiency, and aligning processes with strategic objectives to achieve greater effectiveness and agility.</p>
<p>Have you invited staff at all levels and backgrounds to provide input into your policy and goals?</p>	<p>Do you consider LEAN principles to improve policy and goals (e.g., regarding focus on eliminating waste, increasing efficiency, and aligning processes with strategic objectives to achieve greater effectiveness and agility)?</p>
<p>Do your policy or goals affect certain staff members more than others? If so, have you engaged them as a key stakeholder in your development and/or communication efforts?</p>	

Discussion Highlights



Join us in 2024!

- **Is there anything you've been wanting to try out?**
- **Is there an area of SEM that you've been wanting to expand/develop more?**
- **Is there something that is currently outside of SEM that you want to fold into SEM?**

Bring your ideas to us

We'll discuss topic ideas and vote at the beginning of the year

We are open to new ways/approaches!

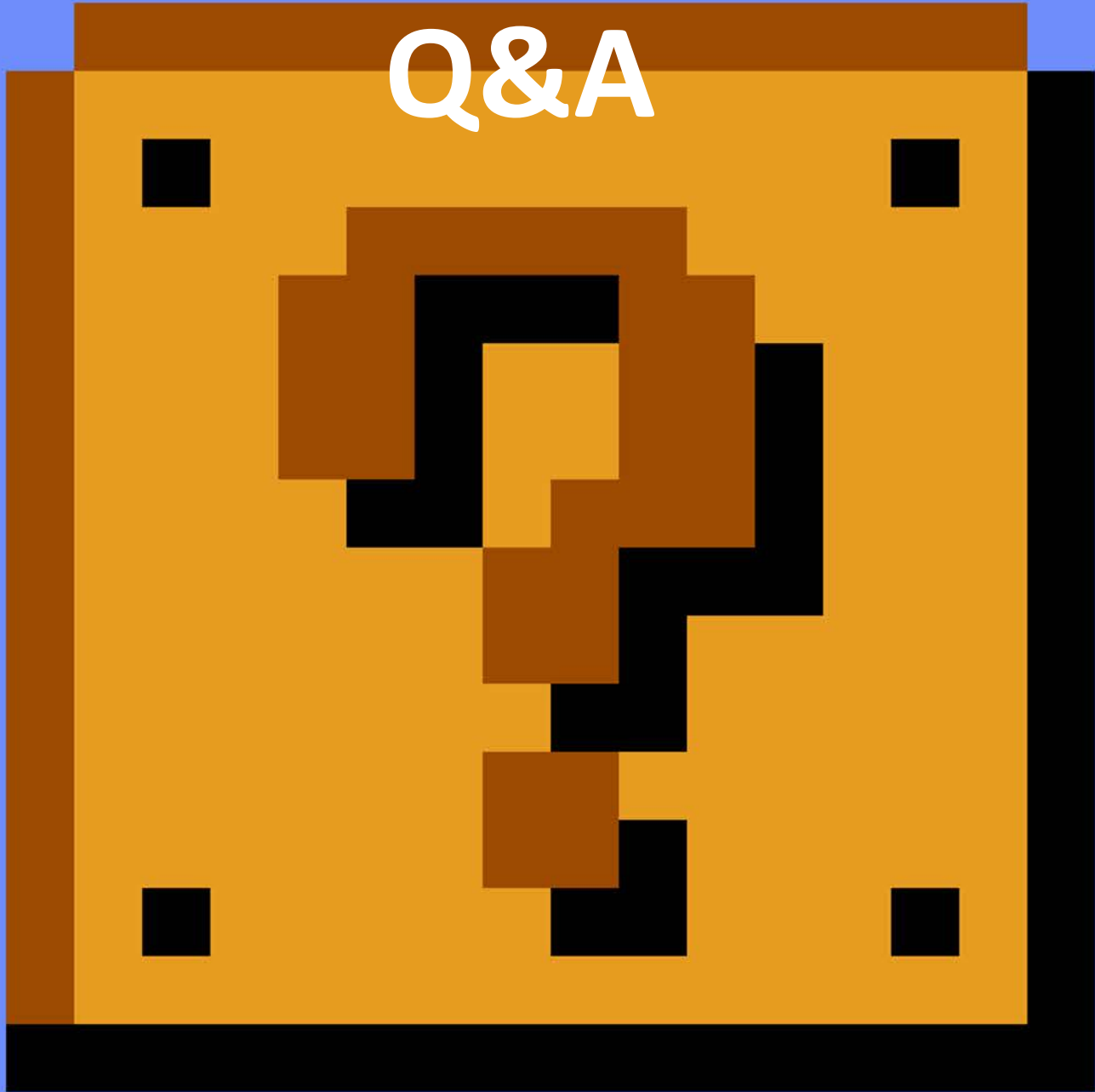




What SEM aspect would you like to see enhanced?

Come join our team in 2024!

Q&A





**THANK
YOU**



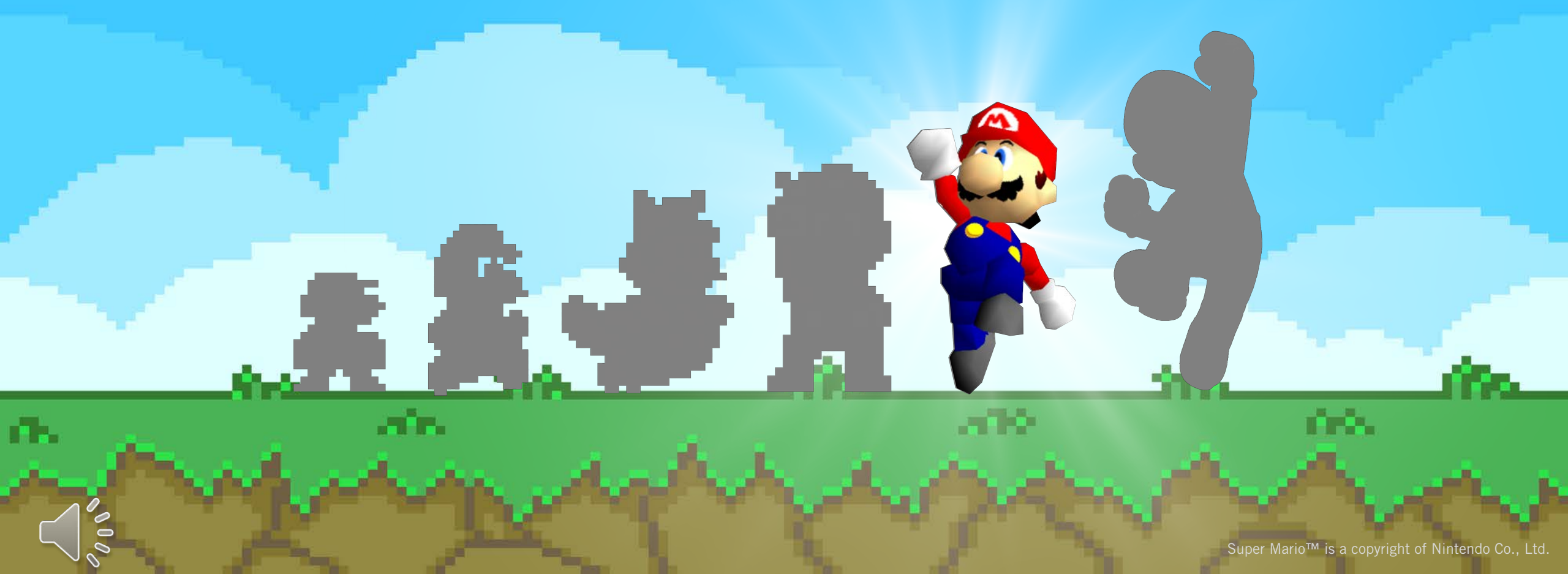
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BREAK





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Open Space

- Exploring the Future of SEM in the Pacific Northwest: Navigating unique challenges while preserving our regional identity amidst national integration



Open Space - Guidelines and Process

- Topics proposed
- Topics briefly described
- Topics selected
- Select group to join (or not)
- Group discussions commence



Open Space – Group Discussions

- All topics receive as much discussion as people care to give them.
- Discussion is captured on posters.
- Responsibility is taken for next step actions.
- Is there interest in a working group for 2024.



Open Space - Rules

1. Whoever comes are the right people
2. Whatever happens is the only thing that could have happened
3. When it starts is the right time
4. When it's over it's over

The **Law of Two Feet**: *"If you find you are not contributing or learning, move somewhere where you can."*



Topic Hosts

- Guides open conversation
- Records session notes on poster
- Solicits commitments to advance
- Leads report out



Report Out

- Choose someone to report out
- Provide 3-minute overview of session
- Include if interest in working group



Closing Remarks – Kathleen Belkhatat



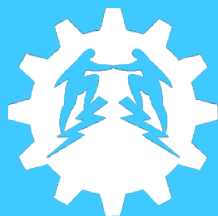
Evaluation





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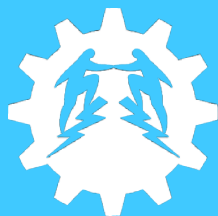




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It's Happy Hour!
We beat the game!





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Thank you for joining us!



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Energy 350's SEM coaching team provides Industrial and Commercial utility customers the technical, organizational, and leadership skills necessary to foster a culture of continuous improvement at their own facilities. Our delivery approach is hands on, analytical, and collaborative in order to achieve energy savings that persist well into the future.

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AESC develops solutions across utility & facility, energy supply & demand, and smart grid & building intelligence for the mutual benefit of energy producers and energy consumers.

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Energy Sensei is the energy management hub Cascade Energy clients rely on to achieve their ambitious energy savings goals. Launched in 2012, Energy Sensei is built and maintained by the energy efficiency experts at Cascade Energy. Our software engineers, subject-matter experts, energy efficiency engineers, user experience designers, and customer support staff provide the best software solution for managing energy programs.

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Thank you to our funding partners!





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2023 Fall Workshop: Next Level SEM

