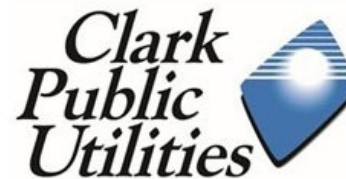
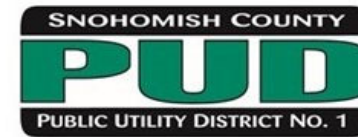


NW SEM Collaborative Funders



Fall Workshop Sponsors – Thank you!



Cascade**Energy**®

CLEARResult®

ENERGY 350



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

SEM Sets the Pace

Fall Workshop
October 20, 2022



Welcome!

- WiFi
 - “Hilton Honors Meeting”
 - Code: **DTLC2022**



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE



Kevin Wallace, LT Chair BC Hydro



Introduction

❖ Leadership Team



❖ Stillwater



❖ Collaborative Funders



Fall Workshop Planning Support



Sam Walker
Stillwater Energy



Genevieve London
Stillwater Energy



Kim Crossman
Great Work Energy



Patrick Shive
Stillwater Energy



Stephen O'Guin
NEEA



Fall Workshop Sponsors – Thank you!



Cascade**Energy**®

CLEARResult®

ENERGY 350



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

Land Acknowledgement

The Portland Metro area rests on traditional village sites of the:

Multnomah	Wasco
Cowlitz	Kathlamet
Clackamas	Bands of Chinook
Tualatin	Kalapuya
Molalla	

Source: www.portlandpf.org/land-acknowledgement



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE







If you want to go fast, go alone.
If you want to go far, go together













Play Blackout Bingo!

1. Complete all squares to be entered into a prize draw!
2. Return to registration table at the end of the day
3. Prizes will be awarded during Happy Hour
4. Bingo highlights will be shared during Happy Hour

Name: _____



NW SEM Collaborative
Fall Workshop 2022 Blackout Bingo

Instructions: Complete ALL the objectives in the squares on the bingo board and return it to the registration table. Completing all of the squares on the board will enter you into a prize drawing announced during happy hour!

<p>Introduce yourself to someone new! <small>Write their name and role below:</small></p> 	<p>World Café! <small>Share a key takeaway:</small></p> 	<p>Talk to this Event Sponsor organization below about any SEM topic!</p>  <p><small>Write who you talked with:</small></p>
<p>Talk to this Event Sponsor organization below about any SEM topic!</p>  <p><small>Write who you talked with:</small></p>	<p>FREE SPACE</p> 	<p>Place an event on the SEM History of the Future Timeline <small>Write which event you placed:</small></p> 
<p>Attend an Open Space session that inspires you. <small>Share a key takeaway:</small></p> 	<p>Learn something new! <small>Share something new you learned at today's workshop:</small></p> 	<p>Talk to this Event Sponsor organization below about any SEM topic!</p>  <p><small>Write who you talked with:</small></p>



Agenda



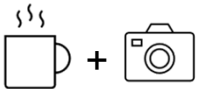
8:30 am

Welcome & Agenda



9:00 am

World Café



10:35 am

Break – Group Photo



10:45 am

Working Group Updates



11:45 am

Business Plan Update



12:30 pm

Lunch



Agenda



1:30 pm

Open Space Sessions



3:30 pm

Break



3:45 pm

Evolution of SEM Report Out



4:15 pm

Wrap up & Evaluation

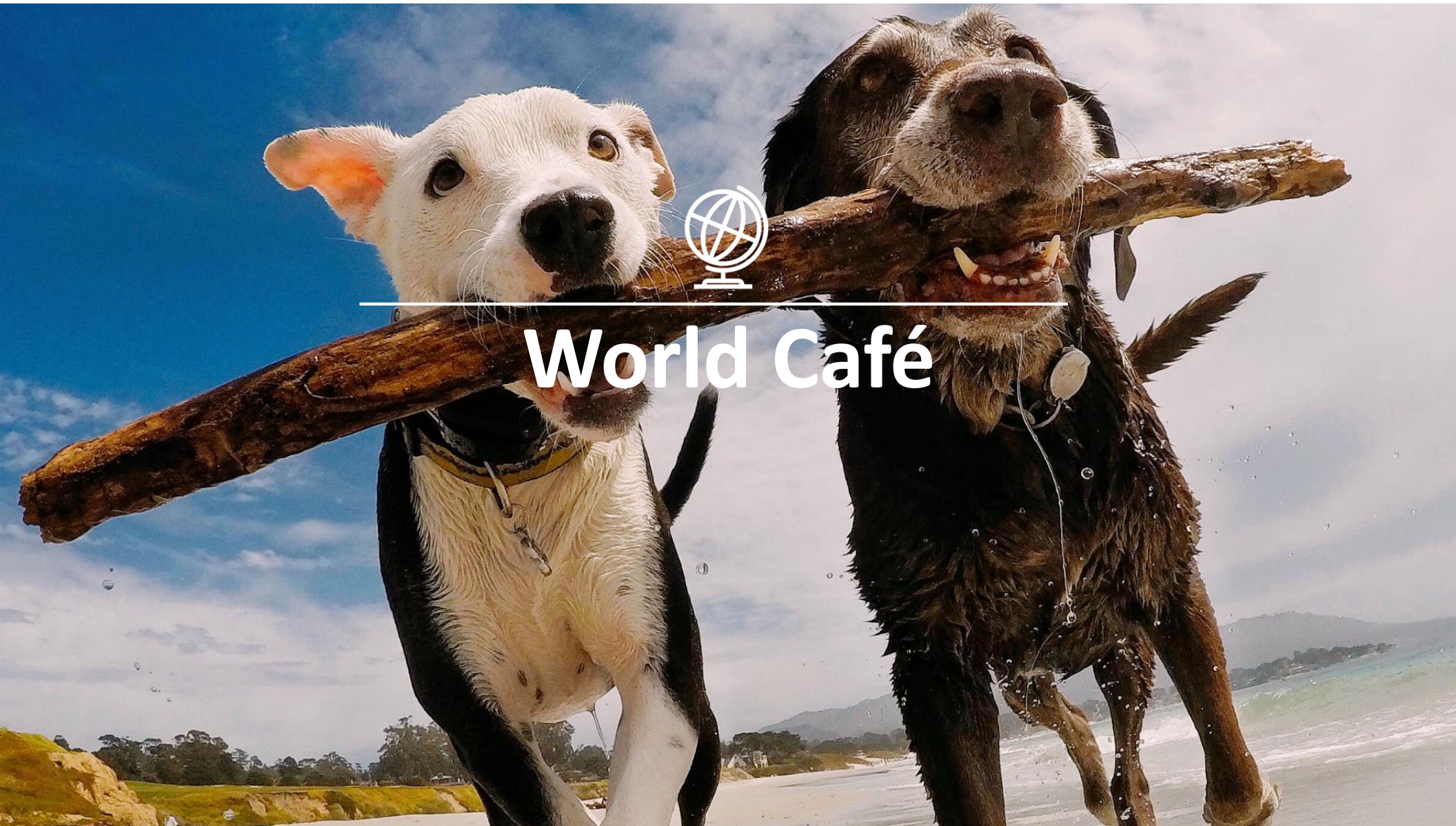


4:30 pm

Happy Hour

hosted by Cascade Energy





World Café

World Café Guidelines



Graphic by Avril Orloff for The World Café Foundation
<https://theworldcafe.com/>



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
 COLLABORATIVE



Q1: What's important to you about SEM, and why do you care?

Graphic by Avril Orloff for The World Café Foundation <https://theworldcafe.com/>



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE



Q2: What do we still need to learn about SEM?

Graphic by Avril Orloff for The World Café Foundation <https://theworldcafe.com/>



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE



Q3: What question, if answered, would make the most difference to the future of your work in SEM?

Graphic by Avril Orloff for The World Café Foundation <https://theworldcafe.com/>



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

Café Harvest

Q1: What's important to you about SEM, and why do you care?

Q2: What do we still need to learn about SEM?

Q3: What question, if answered, would make the most difference to the future of your work in SEM?



BREAK



Cascade**Energy**®

CLEARResult®

ENERGY  **350**



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

Agenda



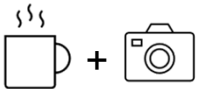
8:30 am

Welcome & Agenda



9:00 am

World Café



10:35 am

Break – Group Photo



10:45 am

Working Group Updates



11:45 am

Business Plan Update



12:30 pm

Lunch



Agenda



1:30 pm

Open Space Sessions



3:30 pm

Break



3:45 pm

Evolution of SEM Report Out



4:15 pm

Wrap up & Evaluation

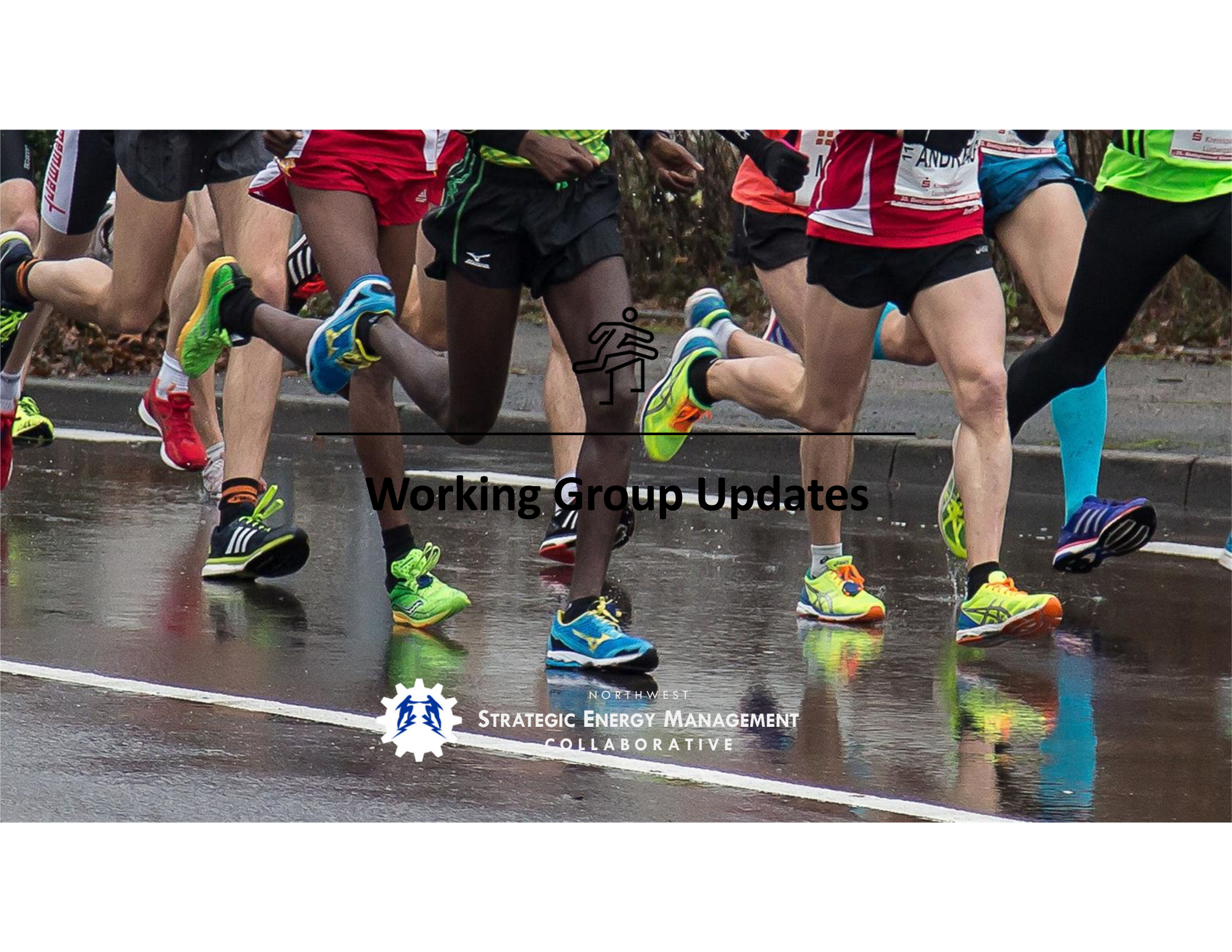


4:30 pm

Happy Hour

hosted by Cascade Energy



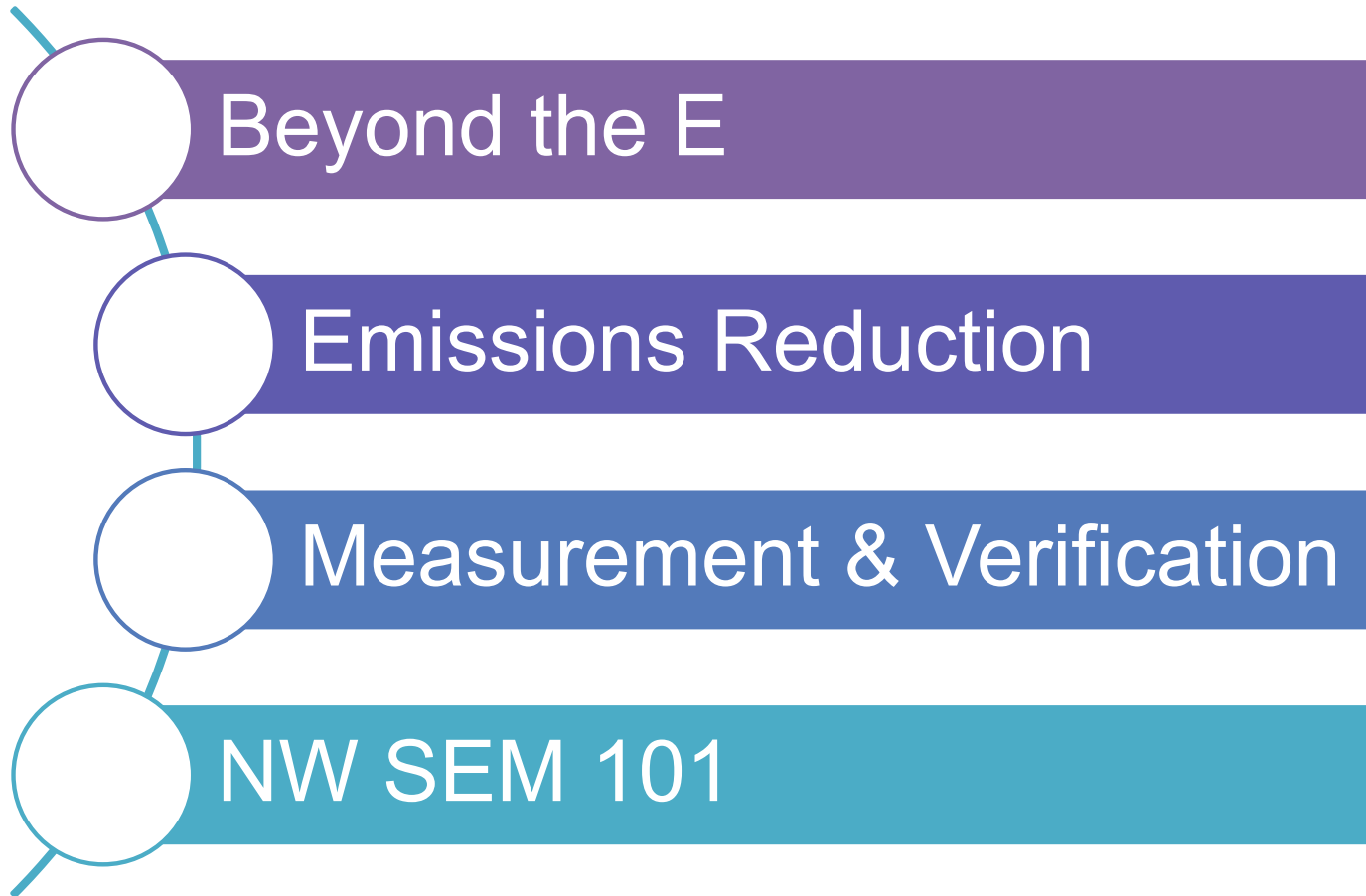


Working Group Updates



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

Working Groups from 2022



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.



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE



2022 Team

Group Leads: Lura Griffiths and Karen Brooks

LT Sponsor: Kathleen Belkhatat

Members:

Brenda Castaneda (SEG)

Jon Peterson (SEG)

Michael Koch (Cascade Energy)

Ed Birch (SEG)

Kevin Fish (SEG)

Romana Cohen (WSP)

Martin Jacobson (COMED)

Emily Courtney (independent)

Tina Schnell (Ask Energy)

Sara York (Cascade Energy)

Layne McWilliams (Cascade Energy)

Anna Kelly (Power TakeOff)



SEM and Workforce Development



February Meeting

Kickoff

Intro and options

Participation in SEM can be vehicle for workforce development. How can implementers support this?

Goals

What are we trying to achieve?

- Awareness of options
- Define best alternatives

Prep for Fall Workshop

Outcomes to present



Meeting 1: February



Meeting 2: April



Meeting 3: June



Meeting 4: September

**Workforce
Development**

**SEM CEUs or
PDHs**

**Certification/
Recognition**

October 20, 2022



The Big Day!!



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

Two main topic areas

- Grow your own
- What are the advantages or disadvantages to implementers providing CEU/PDHs? What is the process? Value proposition?
- 3rd party trainings
- How could 3rd party organizations be used to verify or provide certifications. What options are there?
- What types of certs/recognition exist?

Output: Guide/steps/process

Output: Resource developed



Grow your own

PDH vs. CEU

- Professional Development Hours (PDHs) are awarded to a person based on contact hours of a presentation or training class
- Continuing Education Units (CEUs) are awarded to a person for successfully completing a formal training program
 - CEUs are typically more rigorous to obtain
 - Providing them requires a way to assess that the recipient has learned something (like a test or a project due)
- Insights from Lane Community College
- Example from Energy Trust Treasure Hunt webinars



3rd party trainings

SEM Online
WORKSPACE

File Edit View

SEM Trainings Resource - HOME ★

[Send Feedback on this Dashboard -OR- for a Specific Training you have experience with](#)



[Submit a NEW Training to be added to the Dashboard](#)

HOW TO USE THIS DASHBOARD

Use the icons above to quickly filter trainings by track: Technical, Organizational, or Sustainability focused. Trainings are divided up by experience level on each output page.

As an alternative, advanced users can scroll the complete list below, and use advanced filters and sorting directly in the sheet. For more information on filtering directly in Smartsheet, watch this [video](#)

Beyond the E - SEM Related Trainings Identified (View Only) :

SEM Online
WORKSPACE

Report Abuse Help

	Title	Link	Level of Experience	CEU/PDH	TAGS	Training Areas	Latest Comment/Review	More Info
1	AmeriCorps	https://americorps.org	1) Entry	Unknown	Workforce Development	Organizational		
2	ASHRAE	https://www.ashrae.org	2) Mid-Level 3) Advanced	Varies - See program details	HVAC	Technical		C in d of C
3	Better Buildings trainings	https://betterbuilding.org	2) Mid-Level	Yes - PDH	HVAC	Technical		
4	Better Plants training	https://betterbuilding.org	1) Entry 2) Mid-Level	Yes - PDH	HVAC	Technical		
5	BOC / Smart Buildings Center webinars	https://www.theboc.org	2) Mid-Level	Yes - CEU	HVAC	Organizational, Technical		
6	BOC level 1	https://www.theboc.org	2) Mid-Level	Yes - CEU	HVAC	Technical		
7	BOC level 2	https://www.theboc.org	3) Advanced	Yes - CEU	HVAC	Technical		
8	Building Energy Professional (AEE)	https://www.aee.org	2) Mid-Level		HVAC	Organizational		

[SEM Trainings Resource - HOME - Smartsheet.com](#)



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

3rd party trainings

SEM Trainings Dashboard - Technical (View Only) :

SEM Online
WORKSPACE



Entry Level Technical Trainings

Title	Link	CEU/PDH	Level of Experience	TAGS	Training Areas	Description	Latest Comment/R
Better Plants training	https://betterbuildingssolutions.org/betterplants/	Yes - PDH	1) Entry 2) Mid-Level	HVAC	Technical		
DOE/PNNL Building Retuning			1) Entry 2) Mid-Level	HVAC	Technical		
Federal Energy Management Program (FEMP)	https://www7.eere.energy.gov/femp/	Varies - See program details	1) Entry 2) Mid-Level 3) Advanced	HVAC	Organizational, Sustainability, Technical		
Lane CC Energy Management Two year degree / Apprenticeship	https://inside.lanecc.edu/	Varies - See program details	1) Entry 2) Mid-Level	HVAC	Organizational, Technical		
RETA (refrigeration engineers)	https://reta.com/	Varies - See program details	1) Entry 2) Mid-Level 3) Advanced	HVAC	Technical		

Mid-Level Technical Trainings

Title	Link	CEU/PDH	Level of Experience	TAGS	Training Areas	Details	Latest Comment/R
ASHRAE	https://www.ashrae.org/training/	Varies - See program details	2) Mid-Level 3) Advanced	HVAC	Technical	Collection of paid and free resources including trainings, publications, documents, software tools, and videos offered by ASHRAE. (American Society of Heating, Refrigerating and Air-Conditioning Engineers)	
Better Buildings trainings	https://betterbuildingssolutions.org/betterbuildings/	Yes - PDH	2) Mid-Level	HVAC	Technical		
Better Plants training	https://betterbuildingssolutions.org/betterplants/	Yes - PDH	1) Entry 2) Mid-Level	HVAC	Technical		
BOC / Smart Buildings Center webinars	https://www.theboc.info/con	Yes - CEU	2) Mid-Level	HVAC	Organizational, Technical		
BOC level 1	https://www.theboc.info/built	Yes - CEU	2) Mid-Level	HVAC	Technical		

Advanced Technical Trainings

Title	Link	CEU/PDH	Level of Experience	TAGS	Training Areas	Details	Latest Comment/Review
ASHRAE	https://www.ashrae.org/training/	Varies - See program details	2) Mid-Level 3) Advanced	HVAC	Technical	Collection of paid and free resources including trainings, publications, documents, software tools, and videos offered by ASHRAE. (American Society of Heating, Refrigerating and Air-Conditioning Engineers)	

[SEM Trainings Resource - HOME - Smartsheet.com](https://www.smartsheet.com)



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

Join us in 2023

- 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?
- Menti Code: 73 59 94 5

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!





Q&A

Emissions Reduction Working Group Report Out



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE



A photograph of a turtle and four rabbits on a red carpet with white stripes. The turtle is at the top center, and the rabbits are positioned around it, two on the left and two on the right.


Pamela Birkel, Cascade Energy

Robert Greenwald, Hansi Liu-Atkinson,
Martin Lott, Peter Therkelsen, Walt Tunnesen



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE





SEM as a Pathway to Decarbonization

Strategic Energy Management (SEM) is a well-proven pathway for achieving energy savings for commercial and industrial utility customers at low cost.¹ It is a training and trust-building program with a set of guidelines that teaches large utility customers how to better manage their energy use while providing technical support for energy reducing projects. More and more, these customers are interested in greenhouse gas (GHG) emissions reductions, including those associated with reduced energy usage. Reducing energy-related GHG emissions is one of the key strategies for achieving climate goals at the facility, corporate, and national level.²

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.

There is variation among SEM programs, but they have common elements, defined by the Consortium for Energy Efficiency³. Among them:

- Reduction goals
- Commitment of resources (people and dollars)
- Regularly maintained list of savings opportunities
- Implementation of savings projects
- Measurement of savings

Energy efficiency is known to be a critical cost-effective approach to emissions reductions, and energy savings can be, and often are, easily converted to CO₂e reductions.

While the SEM framework currently focuses on energy reduction, leading directly to reductions in utility-based Scope 1 (natural gas) and/or Scope 2 (electricity) emissions, this existing structure can clearly also apply to the greater scope of GHG emissions, such as:

- On-site emissions from non-utility fuels such as gasoline and diesel (Scope 1).⁴
- Non-fuel emissions such as those from refrigerants (Scope 1).
- Electrification and other fuel switching (Scopes 1 and 2)
- On-site renewables and energy storage (Scope 2)
- Demand-side energy management activities such as load shifting, demand response, which don't result in energy reductions, but may decrease emissions (Scope 2).
- Off-site travel and fuels (Scope 3).
- Supply chain emissions (imagine a large manufacturer or school district encouraging their supply chain to participate in SEM) (Scope 3).
- Emissions from use of manufactured products (Scope 3).

As SEM is practiced today, its full decarbonization potential is unrealized. Steps can be taken to increase alignment between the SEM participants' goals and those held by utility funders and regulators.

SEM is an already existing and highly functional framework that can readily be expanded to support critical reductions in all GHG emissions types.

We propose that the SEM community, legislators, regulators, utilities, and customers work together to make this happen.

¹ Therkelsen, P., Fuchs, H., Miller, W., Whitlock, A., and Rightor, E. (2021). Strategic Energy Management Program Persistence and Cost Effectiveness. North American Strategic Energy Management Collaborative.

² In manufacturing, energy reductions can reduce emissions by 34%. Bottom-up estimates of deep decarbonization of U.S. manufacturing in 2050. Ernst Worrell & Gabe Boyd. <https://doi.org/10.1016/j.chaos.2021.129758>

³ https://library.cse1.org/sem/Files/library/11283/SEM_Minimum_Elements.pdf

⁴ https://www.ghgprotocol.org/sites/default/files/ghgprotocolstandards/Scope1_Calculation_Guidance_0.pdf

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 aspects of companies' businesses.



...GHG reductions in all aspects of companies' businesses

- On-site emissions from non-utility fuels such as gasoline and diesel (Scope 1).
- Non-fuel emissions such as those from refrigerants (Scope 1).
- Electrification and other fuel switching (Scopes 1 and 2)
- On-site renewables and energy storage (Scope 2)
- Demand-side energy management activities such as load shifting, demand response, which don't result in energy reductions, but may decrease emissions (Scope 2).
- Off-site travel and fuels (Scope 3).
- Supply chain emissions (imagine a large manufacturer or school district encouraging their supply chain to participate in SEM) (Scope 3).
- Emissions from use of manufactured products (Scope 3).




Position Paper Statement

- SEM is an already existing and highly functional framework that can readily be expanded to support critical reductions in all GHG emissions types.

We propose that the SEM community, legislators, regulators, utilities, and customers work together to make this happen.

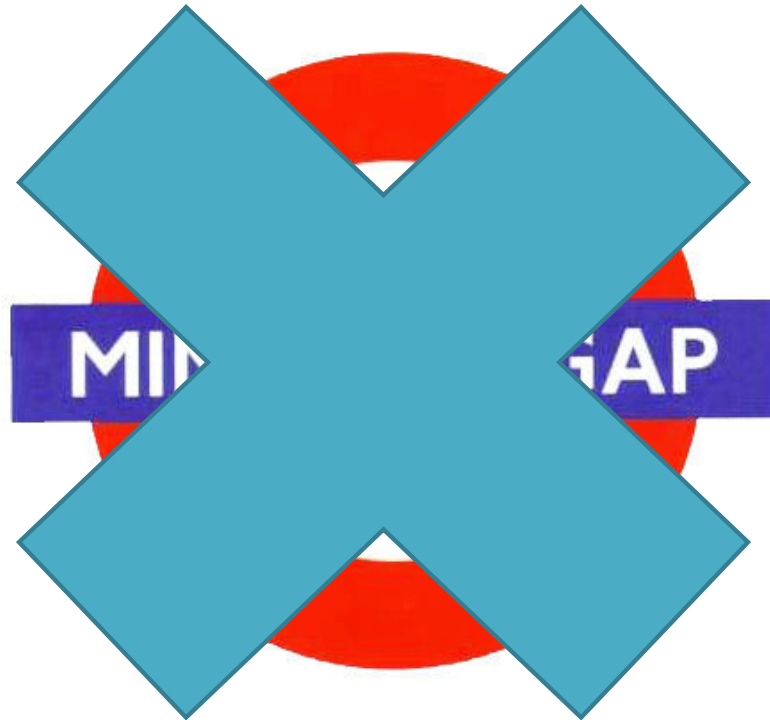


A photograph of a turtle and four rabbits on a red track with white lane lines. The turtle is positioned at the top center, facing downwards. Four rabbits, all white with black spots and black ears, are positioned in the four lanes on either side of the turtle. The text "Tamara Berger, BC Hydro" is overlaid in the center of the image.

Tamara Berger, BC Hydro



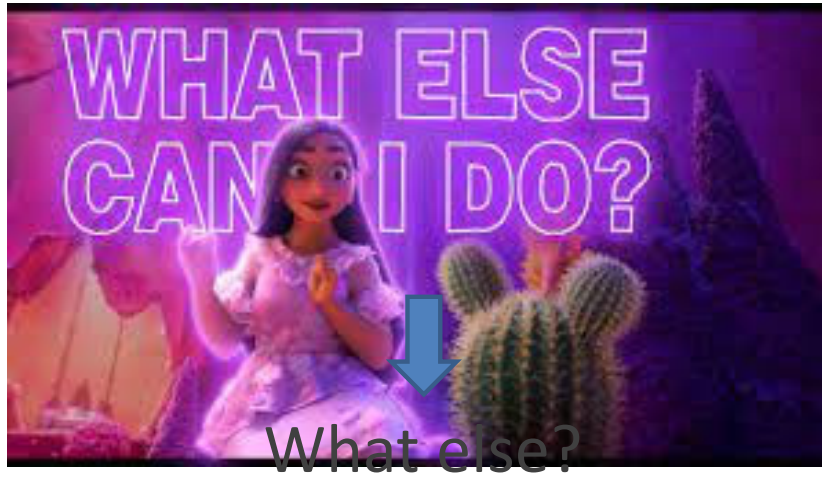
NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE



S

nts





Sl...ts





Q&A

M&V Working Group Update



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE



Introductions



Holly Farah
Rouj Energy Analytics



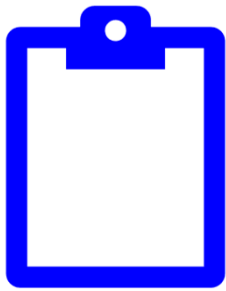
Anne Joiner
Stillwater Energy



Erin Wenger
SBW Consulting



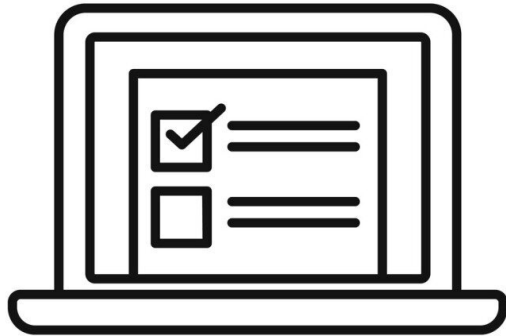
Overview of 2022 Activities



- M&V Group Survey
- Fall 2022: Non-Routine Event Detection
- Winter 2022: Recurve
- **Future webinars: looking for suggestions**



Working Group Survey

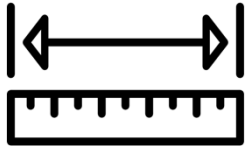


Future evolution of SEM M&V:

- Barriers to scaling SEM
- Specific Questions
- Future Topics



Survey Themes



M&V Process



Evaluation and Implementation Gap

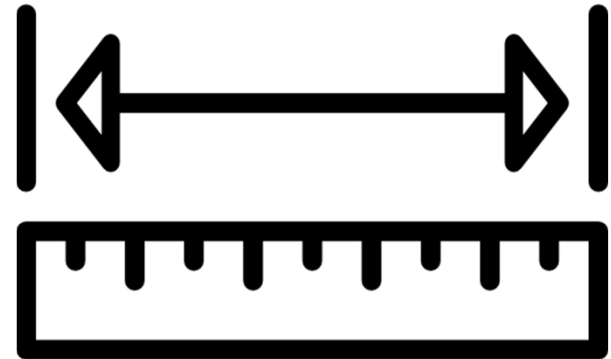


Other



M&V Process

- Quantification of Savings
- Issues Related to Data and Model Maintenance



M&V Process – Quantification of Savings

Barriers to Scaling SEM



Questions



Future Topics



- Multiple-year Influence
- Cost effectiveness for smaller sites
- Application of population-based methods
- Measure lives greater than one year
- Cost of M&V and coaching



M&V Process – Quantification of Savings

Barriers to
Scaling SEM



Questions



Future Topics



- Benefits of applying machine learning to SEM
- Quantifying time-dependent savings
- Measuring long-term persistence
- Decarbonization
- Re-baselining due to Covid, and post-Covid
- Standardization of M&V
- Attribution and persistence
- Impact of naturally occurring factors w/o SEM



M&V Process – Data and Model Maintenance

Barriers to
Scaling SEM



Questions



Future Topics



- Data acquisition/cleaning - access to interval data
- Coach time to build models for small sites
- Customer management of models; managing NREs



M&V Process – Quantification of Savings

Barriers to
Scaling SEM



Questions



- Innovating M&V methods
- Non-site-specific M&V calculations
- Peak demand
- Persistence. Characterizing savings trends



Future Topics



- Long-term COVID impacts
- Electrification and decarbonization



M&V Process – Quantification of Savings

Barriers to
Scaling SEM



Questions



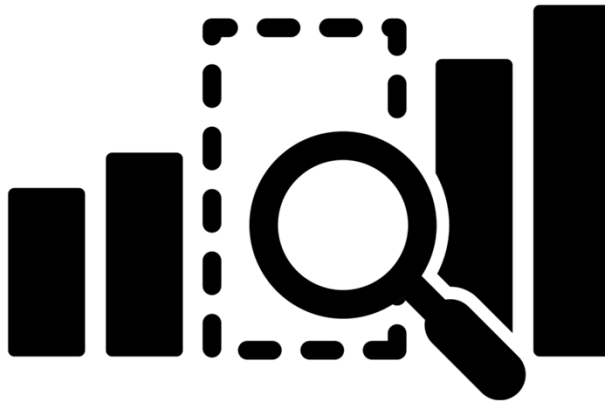
Future Topics



- Clean buildings and benchmarking laws
- Negative savings for multi-year program
- How many data points are enough?
- Testing the validity of IPMVP NRE/NRA
- Creating a catalog of NREs/NRAs
- When and how to re-baseline models
- Measuring the behavioral impact of res



Evaluation and Implementation Gap



Evaluation and Implementation Gap

Barriers to
Scaling SEM



Requirement variance between utilities and regulatory environments

Questions



Future Topics



Evaluation and Implementation Gap

Barriers to
Scaling SEM



Questions



Future Topics



- Viability of community/group models
- Interval data opportunity from utilities
- How good is 'good enough' from an evaluation standpoint
- How much 'program influence' proof is necessary
- Handling new SEM program startup



Evaluation and Implementation Gap

Barriers to
Scaling SEM



Questions



Future Topics



- Good enough SEM savings
- Methods to combine and integrate M&V and evaluation



Other

Barriers to Scaling SEM



Barriers

- Workforce
- Cost of program delivery

Questions



Questions

- Where others are? What's happening in and outside of the NW region?

Future Topics





Q&A



NORTHWEST INDUSTRIAL
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

The Northwest Roots of Strategic Energy Management

—
OCTOBER 2022



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

The background of the slide features a vibrant sunset over the ocean. Two people are captured in mid-air, jumping joyfully with their arms raised. Their silhouettes are dark against the bright, orange and yellow sky. The sun is a large, glowing orb on the right side of the frame, casting a warm light across the scene. The ocean waves are visible at the bottom, appearing dark and textured.

NW SEM 101 Working Group

Inception: February 2022

Members:

Leader: Kim Crossman [Great Work Energy](#)

Suzi Asmus, NRECA

Ed Birch, Strategic Energy Group

Anna Kelly, Power TakeOff

Tina Schnell, Ask Energy, Inc

Roots of Success



SEM Programs



SEM Program Design



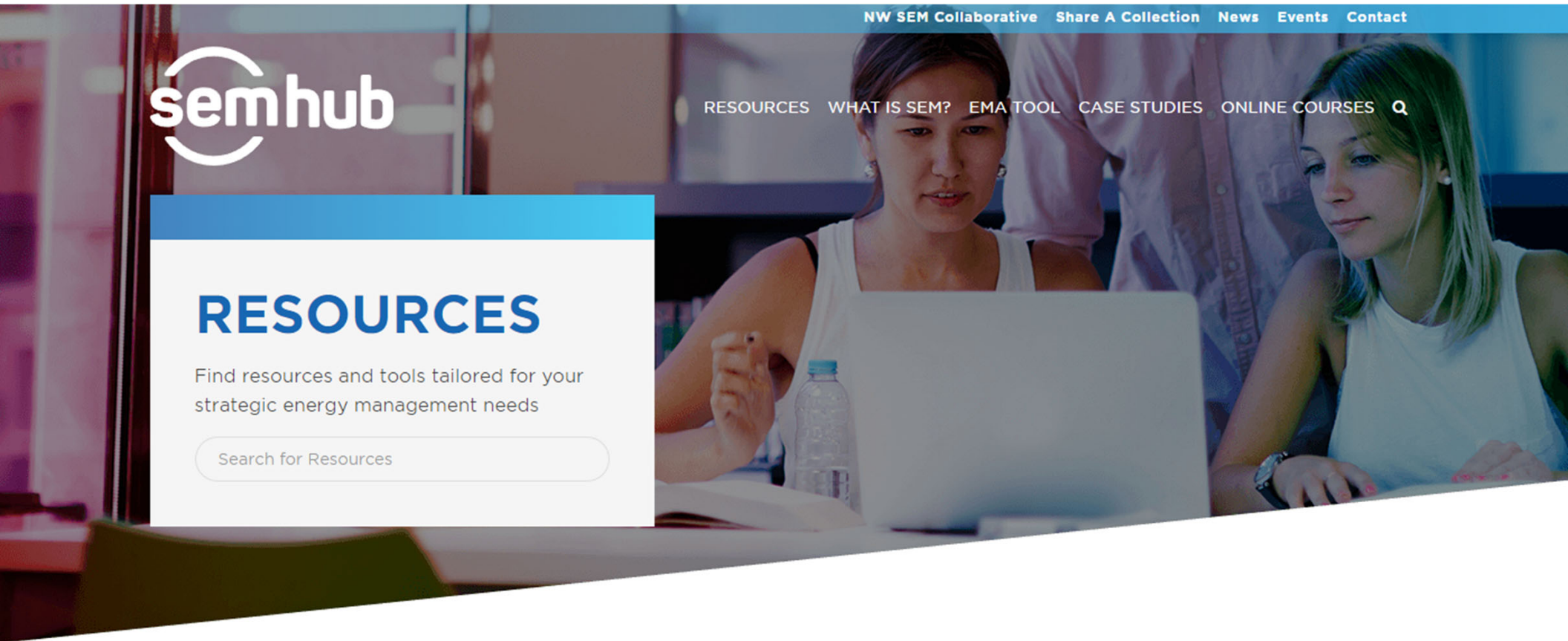
SEM Program Strategies



NW SEM Nexus



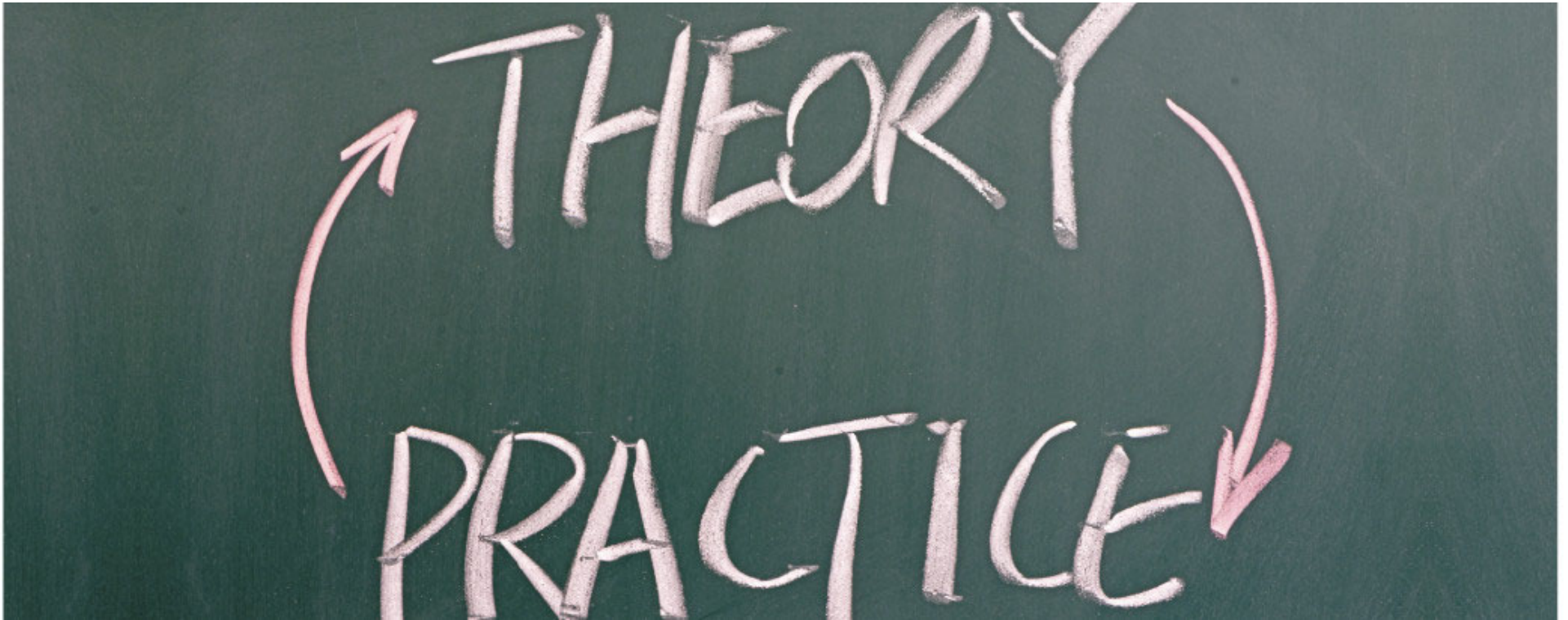
Collaborative Activities



History of SEM



SEM Evaluation and Research





NORTHWEST INDUSTRIAL
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

The Northwest Roots of Strategic Energy Management

—
OCTOBER 2022



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE



Q&A

Acknowledgements

SEM 101 Working Group Members

Kim Crossman

Suzi Asmus

Tina Snell

Ed Birch

Anna Kelly

NW SEM Collaborative Leadership Team

Dedicated Collaborators

Federal Contributors

CEE

Utilities

Program Administrators

Implementers

Evaluators

The community



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE



NORTHWEST INDUSTRIAL
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

The Northwest Roots of Strategic Energy Management

OCTOBER 2022



Business Plan Update



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

Business Plan Subcommittee

- ❖ Suzi Asmus
- ❖ Kathleen Belkhatat
- ❖ Peter Therkelsen
- ❖ Jim Volkman
- ❖ Kevin Wallace

“The NW SEM Collaborative is a self-sustaining organization with a diversified funding base by 2025.”







Annual Work Plan Objectives

2021

- Define the Business Plan elements
- Define strategy for a self-sustaining organization
- Understand the value proposition of the NW Collaborative

2022

- Further develop the preferred options
- Complete the business plan document
- Circulate the business plan document



Business Plan

The Future of the NW SEM Collaborative: A Regional Model



Bottom Line

- Preserve Northwest Workshop and Workgroups
- Merge with North American SEM Collaborative





**NORTH AMERICAN
STRATEGIC ENERGY MANAGEMENT
SUMMIT**

August 15, 2017



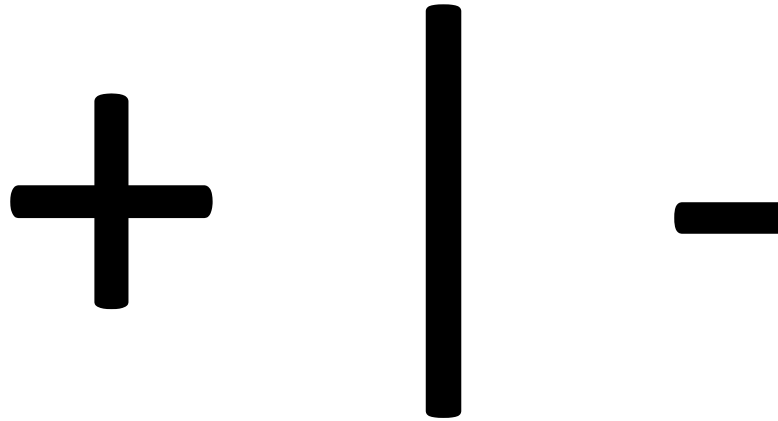








Exercise





**Stunt Cycle
NOT Included!**
it's shown just to
show scale.



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATION



Q&A

LUNCH



Cascade**Energy**®



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

Story from the field: collaboration and data in SEM

Miri Goldade

Engineering Manager - Portland

Biotech Company in SoCal



All Buildings Top 5 - Increase Room Temperatures (br, z, and eg) -P



Gem | Project #1 | Subsystem: HVAC | Type: Energy Management

Status	Due	Completion	Assigned To
Complete	2019-04-01	2019-05-29	Chris I

Background

Required Actions

- a) B800 - Raise Temperatures in Mechanical Rooms from 72oF to 75oF (Chris)
- b) B400/500/800 - Increase Electrical room HVAC set points from 74oF to 80oF (Chris)
- c) B400/500/800 - Increase server room temperatures from 62oF to 72oF (Mark I)

5 Notes

0 Files

Persistence

+ Add Note

Nicolle 2019-03-04 02:11	1	Will need to follow up with Joe McCrea		
Noah 2019-02-25 02:35	2	Changing alarm values for electrical room values in 800 - alarm setpoints are not able to be changed Nate has submitted SR 44655 for siemens to readjust temps and alarms		
Jamie 2019-01-10 08:13	3	Server room set points adjusted to 72 in B400 & 800. B500 will need controller modifications. B800 Mechanical spaces complete- 75 deg for mechanical, 78 deg for electrical rooms B400/500- Need list of rooms		
Kristine 2018-11-29 08:07	4	KM to give NG list of electrical and mechanical room numbers		
Jamie 2018-11-01 10:57		Gathering list of room numbers. Elec and mech rooms will be quick. Have to make a decision on server rooms. Mark reached out to IT on server rooms.		

Savings

Amount	Units	Precision
3,000	kWh/yr	Rough

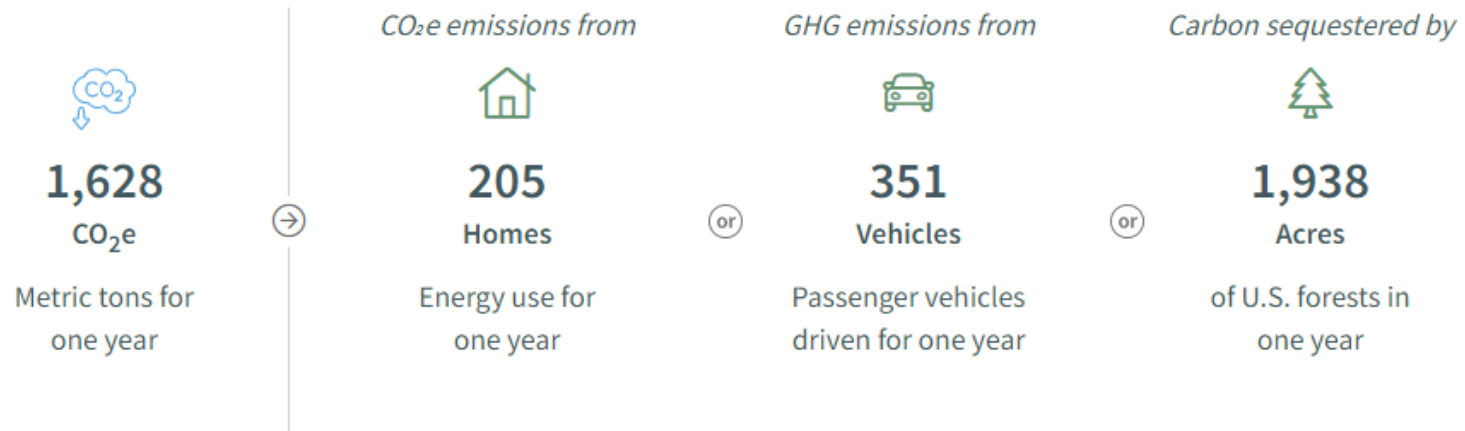
Avoided Cost	\$600 /yr
Avoided Emissions	1.37 Metric Tons CO ₂ e/yr
Other Savings	3,000 kWh/yr
Energy Impact	High
Effort	Low
Source	Treasure Hunt
Expenditure Budget	N/A
Hours Budget	N/A
Has Incentive	No

151 Total Projects



Emissions Equivalencies ?

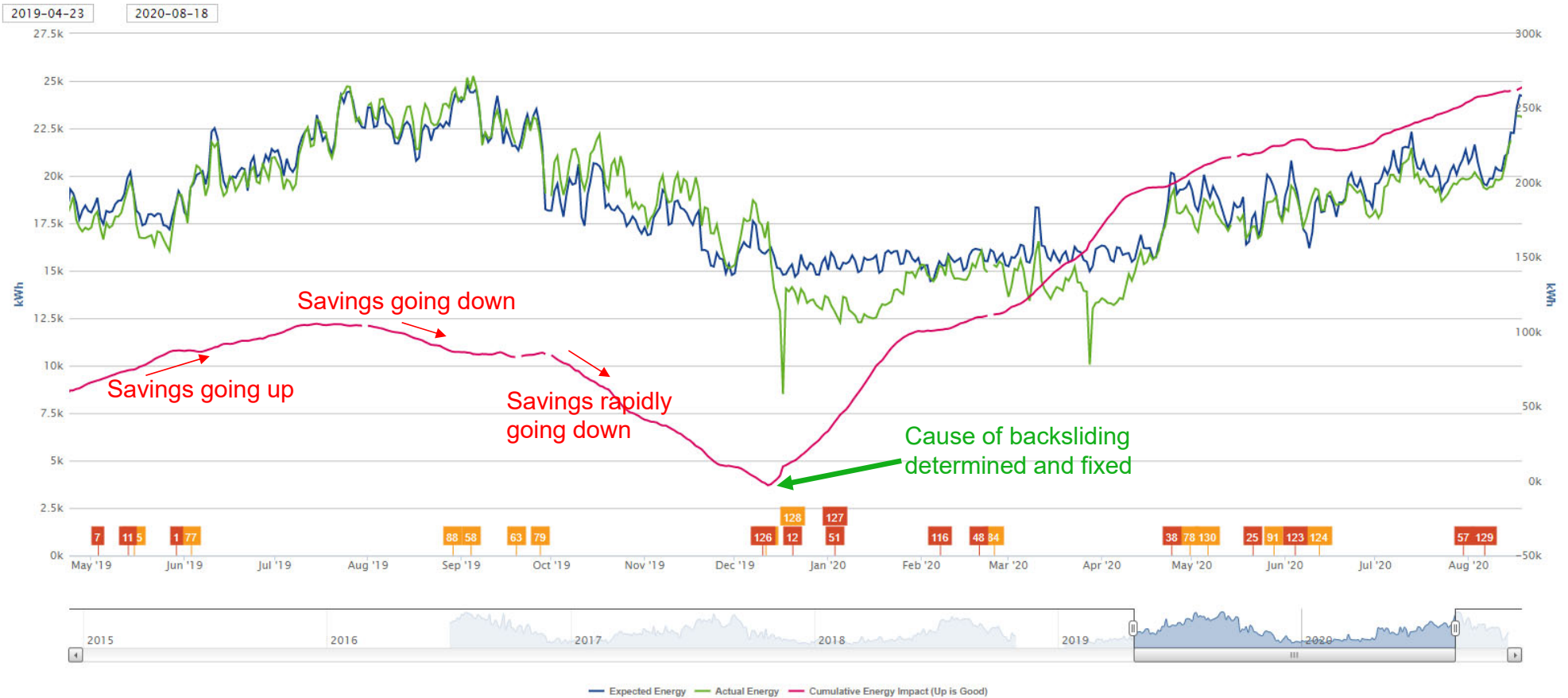
Converted from avoided emissions on completed projects.



Cusum Graph

MARKERS

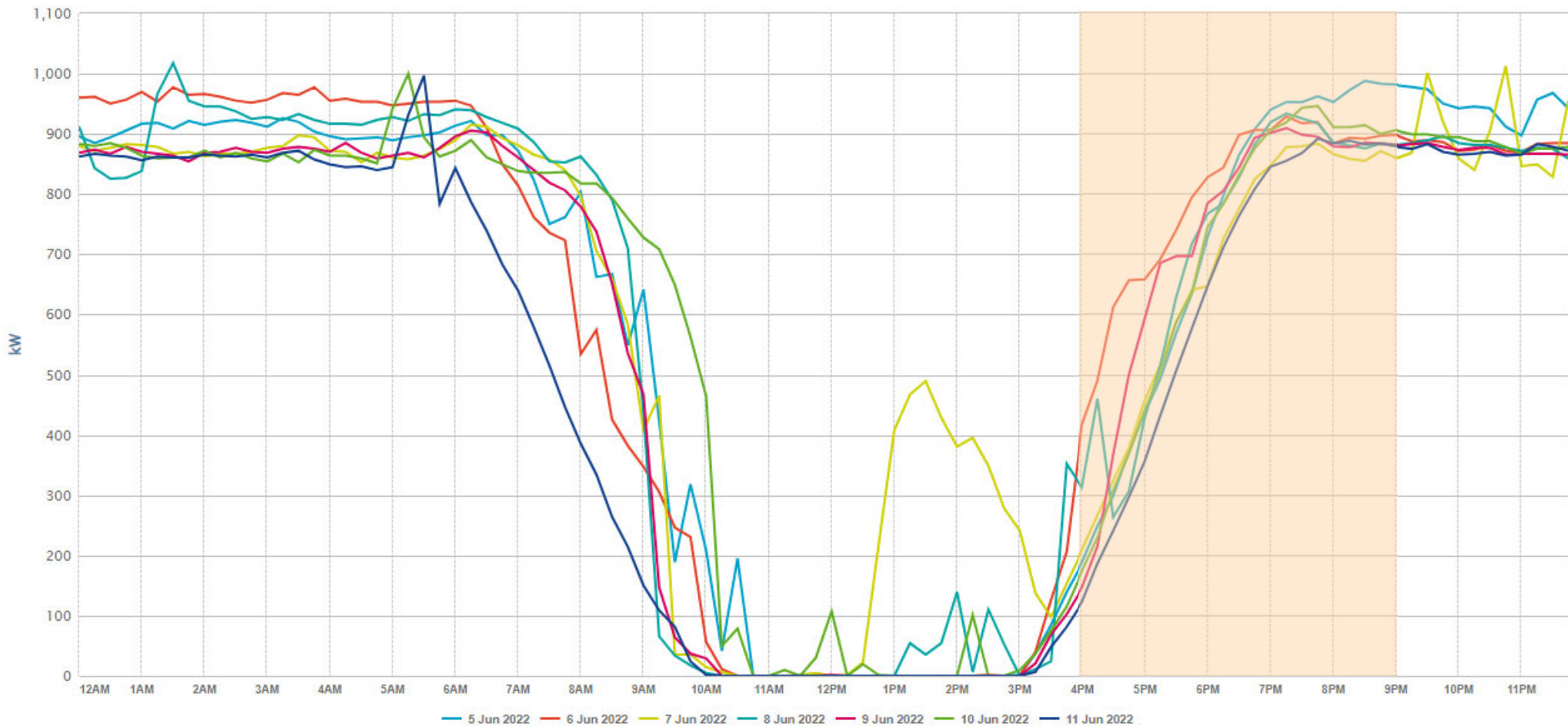




Quarter-Hourly Peak Demand (kW)

B800 Electric Daily Comparison

MARKERS





LUNCH



Cascade**Energy**®



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

Agenda



1:30 pm

Open Space Sessions



3:30 pm

Break



3:45 pm

Evolution of SEM Report Out



4:15 pm

Wrap up & Evaluation



4:30 pm

Happy Hour

hosted by Cascade Energy





Open Space Sessions



You Set the Agenda!

- Creates time and space for people to engage deeply and creatively around issues of concern to them.
- Open Space sessions are best when there is:
 - A real issue of concern
 - Diversity of players and perspectives
 - Complexity of elements
 - The presence of passion (including conflict)
- Roles in Open Space
 - Host** - announces and convenes a conversation
 - Participant** - participates in a conversation
 - Bumble-bee** - moves between conversations, cross-pollinates
 - Butterfly** – takes time out to reflect



Open Space Structure



Call for topics/ build the agenda (15 min)



Open Space Breakout Sessions 1 (30 min)







Open Space Breakout Sessions 2 (30 min)



Harvest Session (20 min)



Open Space Session Harvest Template

TITLE:		HOST:
 QUESTIONS	 INSIGHTS	
→		
 NEXT STEPS	↙	
→		 ONE TAKEAWAY



Open Space: Four Principles and One Law

Principles

- Whoever comes are the right people
- Whenever it starts is the right time
- Whatever happens is the only thing that could have
- When its over its over

The Law of Mobility

- If you find yourself in a situation where you are not contributing or learning, move somewhere where you can





BREAK



Cascade**Energy**®

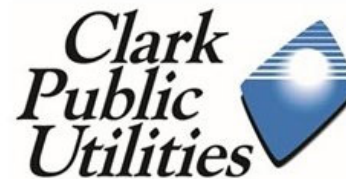
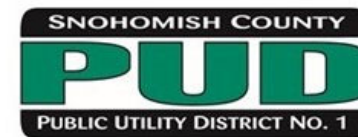
CLEARResult®

ENERGY 350



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

BREAK





Evolution of SEM



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

Evolution of SEM

Fall Workshop Report Out



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

Goal

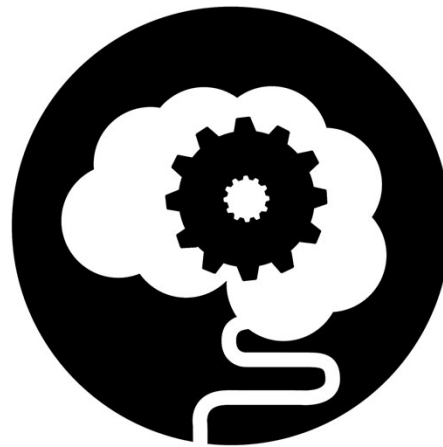
Develop an understanding of the evolution of SEM in the Northwest

The NW SEM Collaborative enables members to drive increased savings and resilience through wider adoption and deeper engagement.

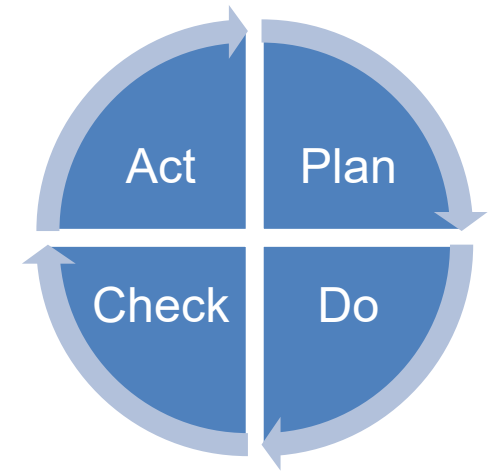


Subcommittee Evolution of SEM: Brain Trust

- Todd Amundson
- Jim Volkman
- Sara York
- Suzi Asmus
- Jackie Ostroff
- Genevieve London



2021/2022 Work Plan



Plan: Develop database of metrics

Do: Establish reporting mechanism

Check: Modify or add metrics as appropriate

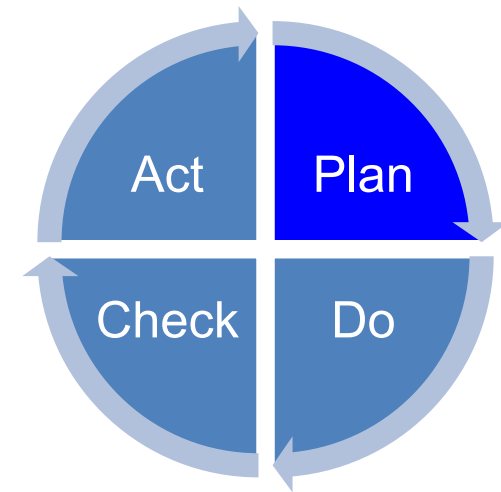
Act: Deliver presentation to report findings at Fall Workshop and upload presentation to NW SEMHub

Act/Plan: Identify needs (frequency, responsibility, etc.) for ongoing reporting and analysis

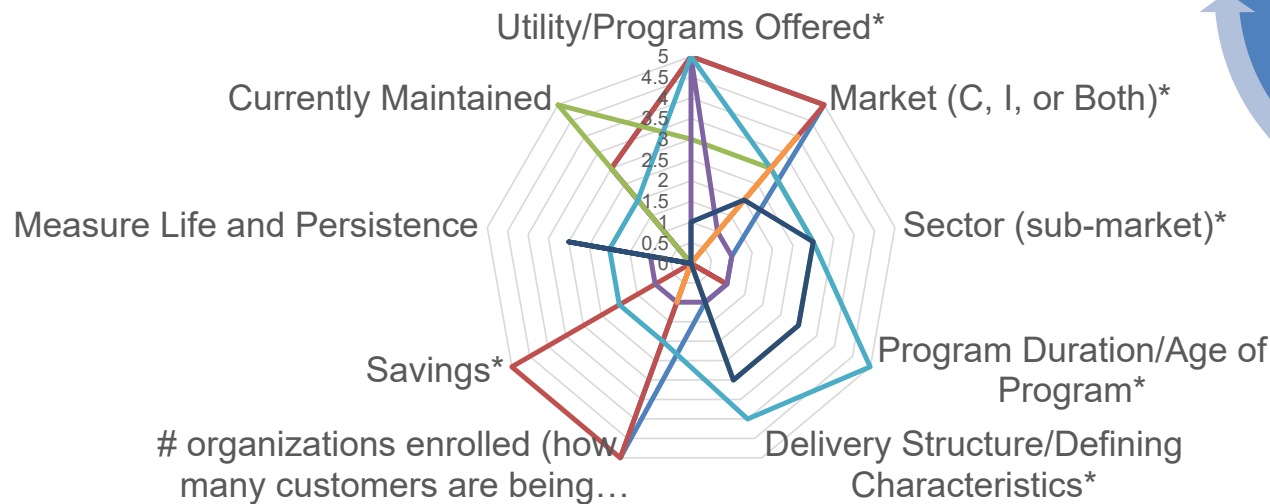
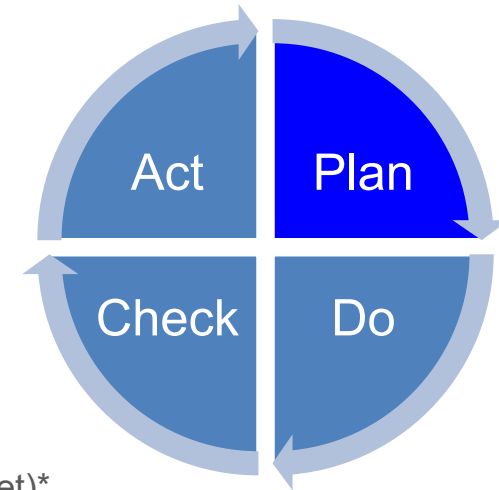


Minimum Metrics

1. *Programs available (industrial/commercial)*
2. *# of different organizations served (industrial/commercial)*
3. *# of units served (industrial/commercial)*
4. *Longevity of programs*
5. *Sectors supported (some SEM is sector specific)*
6. *Delivery framework (CEE elements primary)*
7. *Claimed energy savings (or other....TBD)*
8. *Measure life claimed*



Early Stage of Subcommittee 3

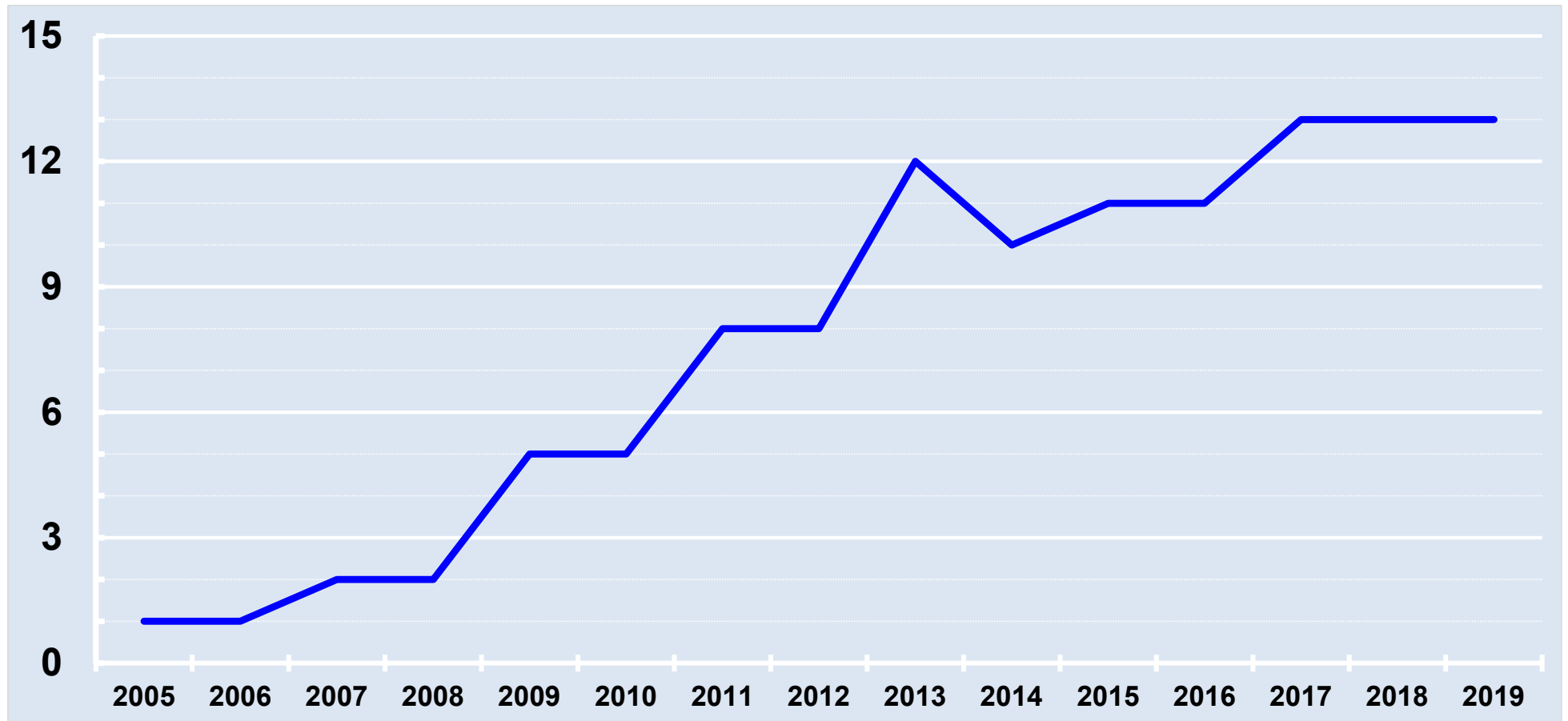


- NW SEM Collab Survey
- CEE Survey
- SEM Meta-Analysis
- SEM Persistence and Cost Effectiveness (ACEEE 2021)

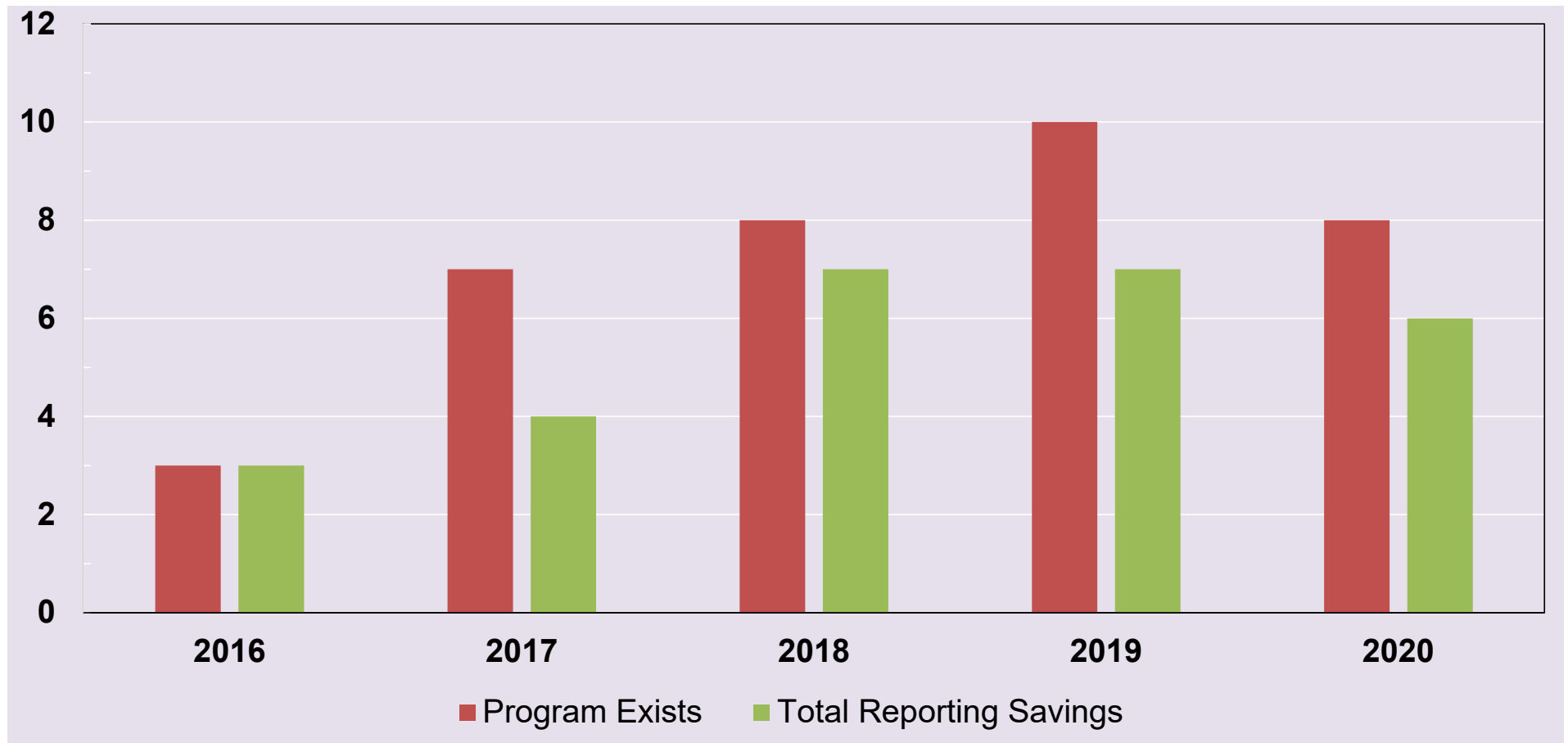
- NEEA (Regular Reporting, 2016 - Present)
- ACEEE 2019 Paper
- Benchmarking WG



NW SEM Meta-Analysis All SEM Programs

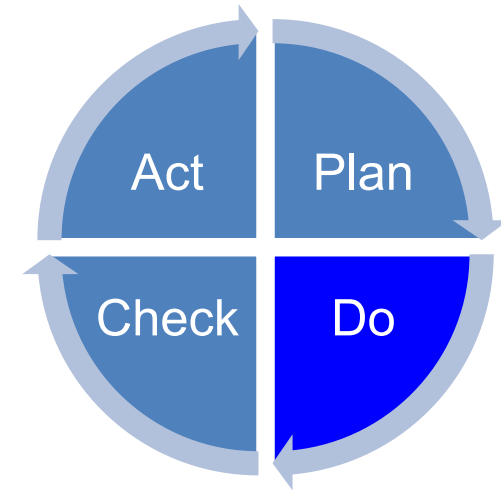


NEEA Funder Industrial SEM Programs Reported



Visualizing

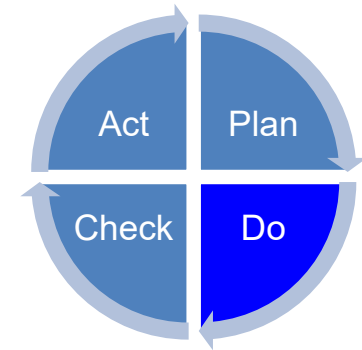
- *From who's perspective?*
- *What to measure?*
- *What's available now?*
- *What/when is the baseline?*



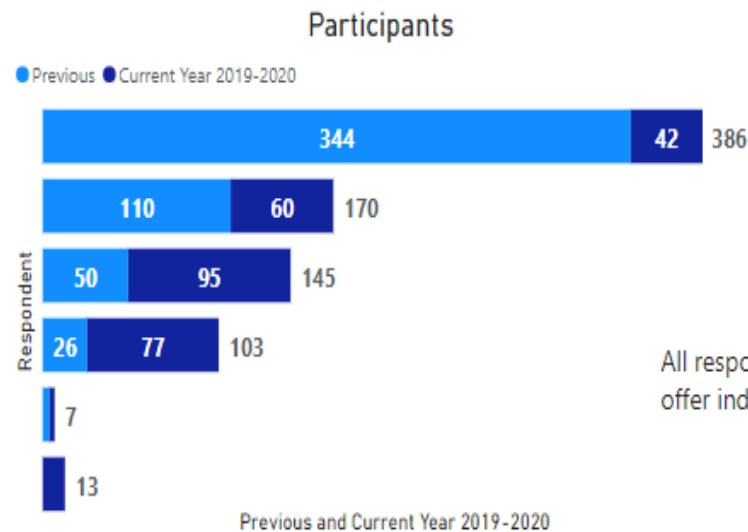
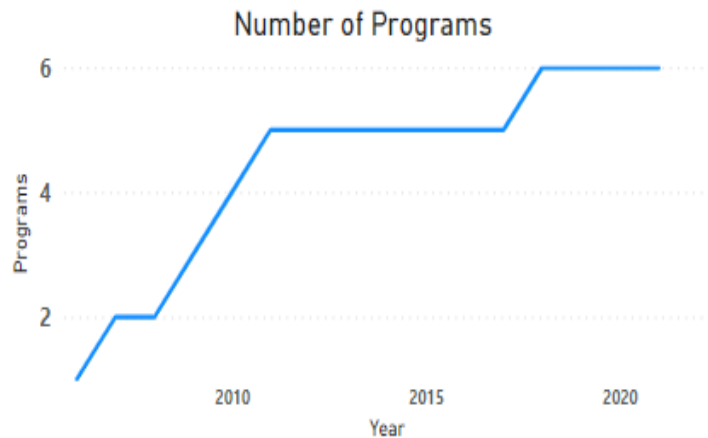
“.....drive increased savings and resilience through wider adoption and deeper engagement.”



CEE Survey Responses



PROGRAM STATS



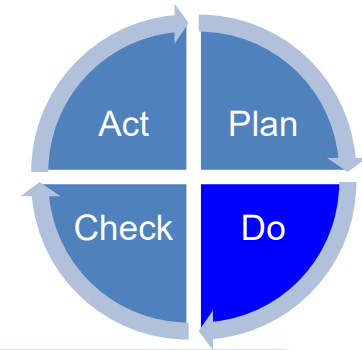
Sector

- ☐ (Blank)
- ☐ Commercial
- ☐ Industrial

All respondents use a **cohort** format and two also offer individual programs.



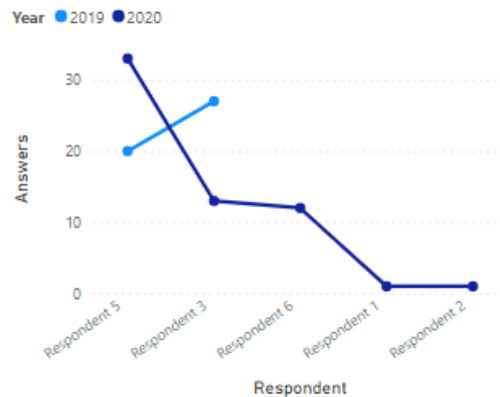
CEE Survey Responses



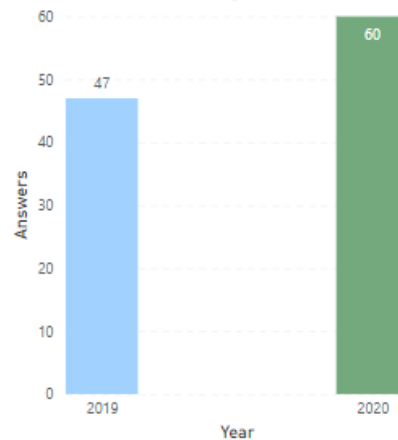
PROGRAM RESULTS

*Not all respondents reported for all years

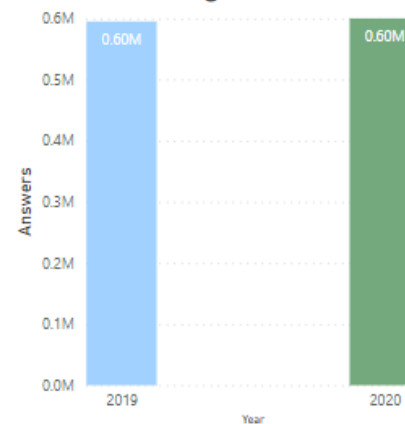
Electric Savings by Respondent



Electric Savings (M kWh)



Gas Savings (Therms)



Total Annual Investment (Dollars)

8M

2020 Total Electric Savings (M kWh)

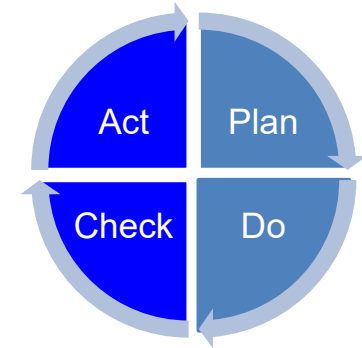
60

2020 Total Gas Savings

600K



What's Next



- Incorporate and align previous relevant data with the CEE Survey
- Incorporate dashboard onto SEM HUB
- 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

Help out: Utilities and programs, please participate in future CEE surveys



Ongoing Considerations

- *How do Clean Buildings programs fit into this survey?*
- *Framework to build and improve from*





Closing Remarks



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

Faith DeBolt, LT Vice Chair SBW Consulting



Reflections from the Day



World café

Working group report outs

Open space

Evolution of SEM

History of the Future



Changing Landscape

**Legislation
Funding
Good business**



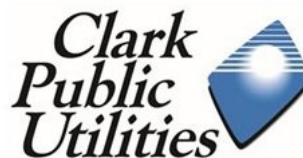
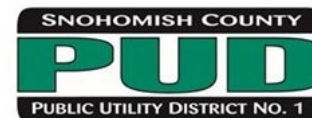
New Horizons



Scale Pace
Equity



Thank
You!



CLEARResult®



CascadeEnergy®

ENERGY350



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

We appreciate your feedback!





Thank you!



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

HAPPY HOUR

TIME: 4:35 - 6:00

THANK YOU, SPONSOR:

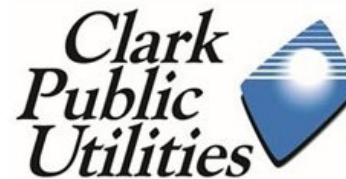
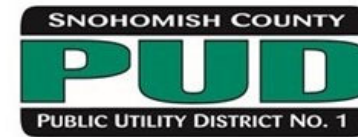


Cascade**Energy**®



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

NW SEM Collaborative Funders



Thank You



Cascade**Energy**®



NORTHWEST
STRATEGIC ENERGY MANAGEMENT
COLLABORATIVE

Thank You

CLEAResult[®]



Thank You

