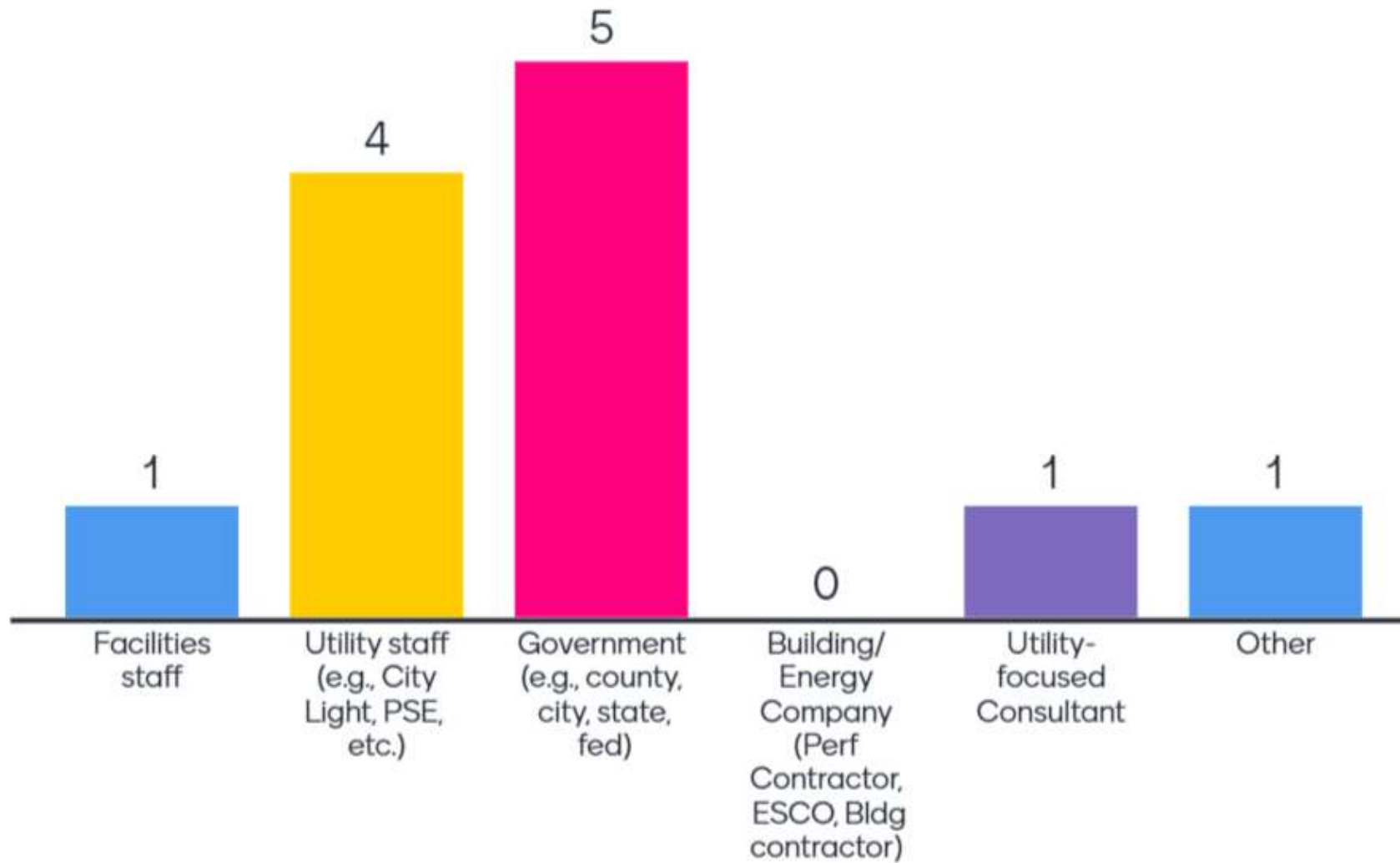


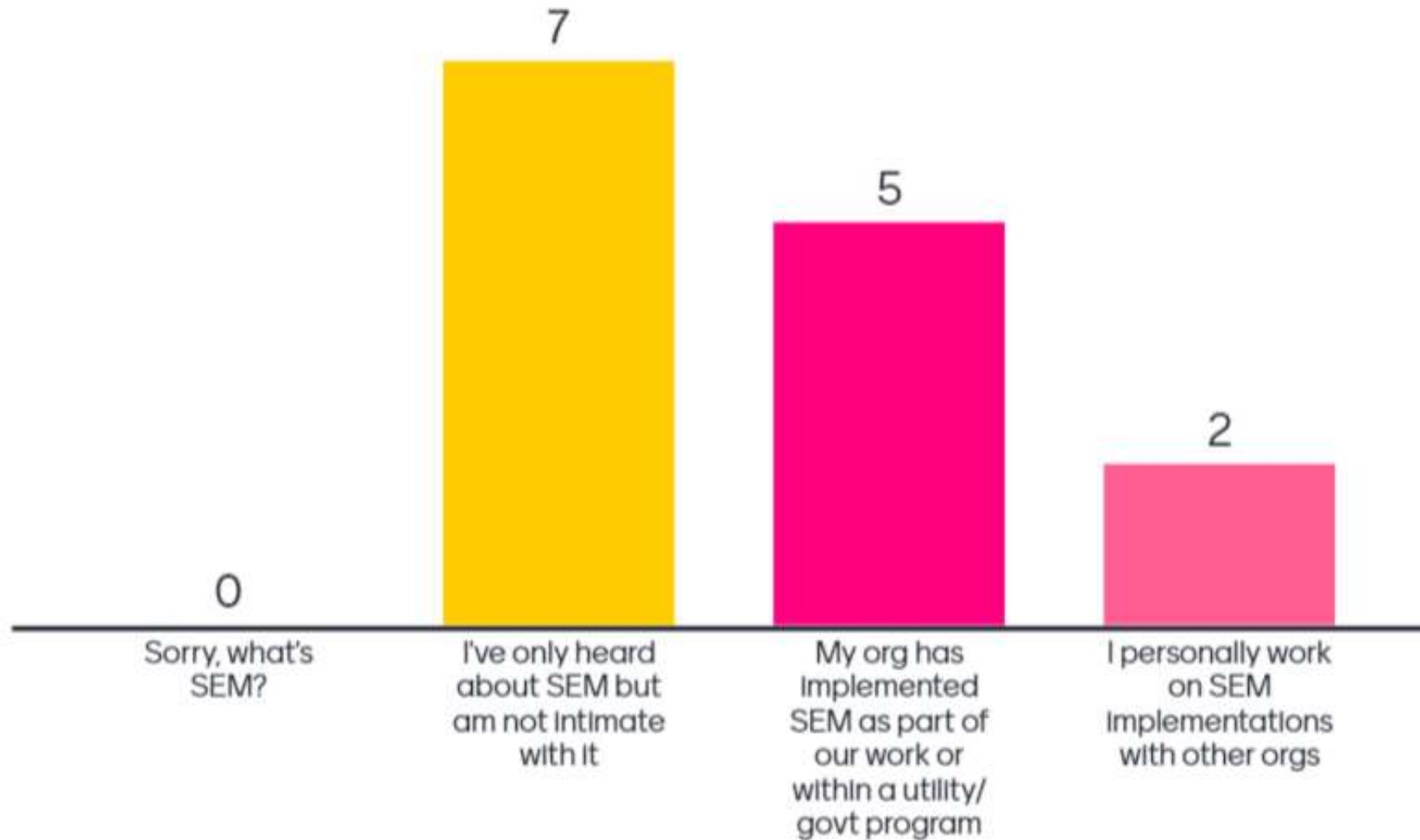
Strategic Energy Management: Fundamentals of SEM and What It Can Do For You and Your Facility

Seattle City Light Webinar
February 13, 2024

Poll: What is your role?



Poll: What do you know about SEM?




Who is Chad Gilless

- >25 years in energy and project management; >17 years in SEM
- Chair of the US Technical Advisory Group to ISO Technical Committee 301 Energy Management, developed ISO 50001 and other international standards
- Founder of the North American SEM Collaborative
- SEM efforts have been third party validated to save over 100 million kWh for ratepayer funded utility programs
- Principal of Stillwater Energy
- Always learning

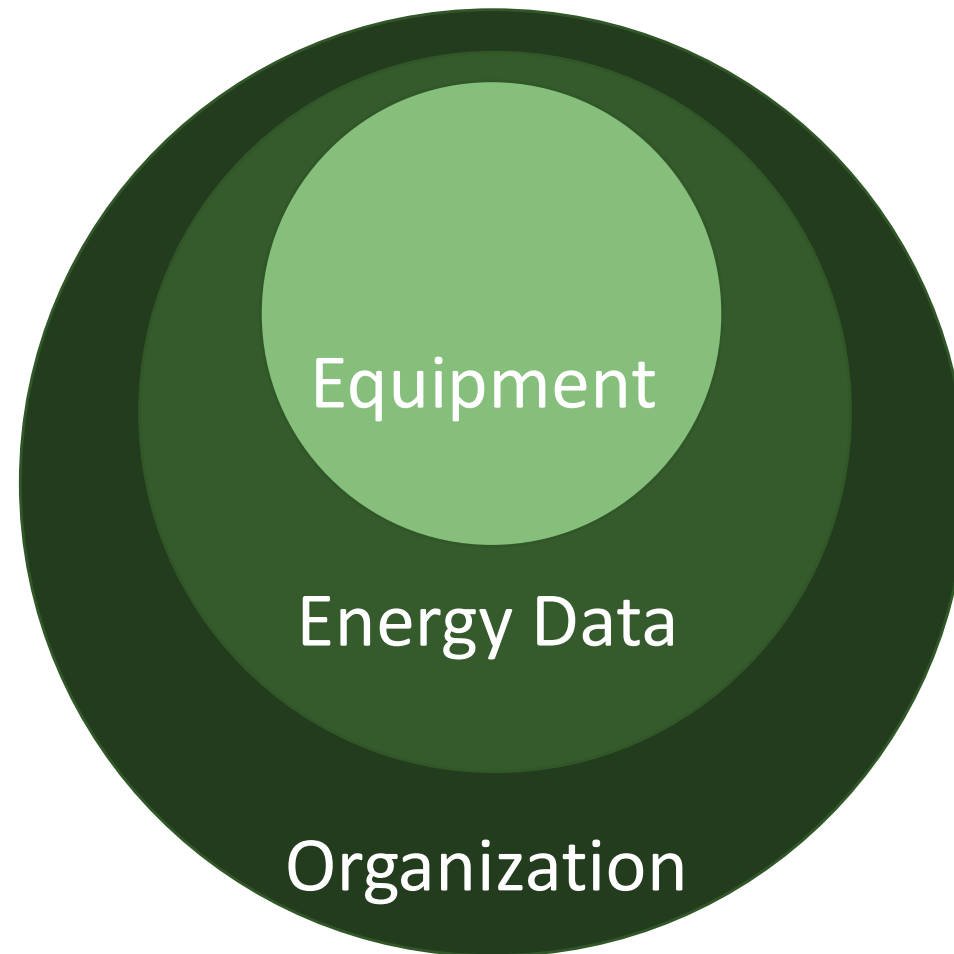


Why a System Approach to Energy?

S Y S T E M S	Yes	Bureaucracy	High Performer
	No	Chaos	Start up
		No	Yes
		COMMON SENSE	



Energy – equipment is only 1/3 of the picture



What do world class athletes do differently?



Poll: What do you want to learn or hear about today?

Detailed real world examples

How to get buy in

Data Analytics to facilitate useful reporting (load profile week, month, year) for automated facility energy use metering

Ways to get more employees on board with the SEM Program.

How to implement SEM measures on projects

Best practices of SEM

what does and doesn't qualify as an SEM measure?

How to determine if a building or campus a good candidate

Where trainings are available or further resources to understand more



What is SEM? What is an SEM Program?

SEM practiced by End User

- Organization commitment via policy and goals
- Energy champion, team, and executive sponsor
- Elevated energy metrics
- Employee engagement
- Regular energy plan
- Focus: energy reduction, GHGs

Utility/Agency SEM Program

- Delivers SEM via cohort, 1:1, or energy manager
- Measurement and Verification (M&V), via facility-wide models or bottom-up calcs of projects
- Energy scan for operational measures; Energy Management Assessment for organizational priorities



What is Clean Buildings Law? Accelerators?

Washington Clean Buildings (CB) Law

- Affects owners of buildings 50,000 square feet and up
- Requires SEM-type activities (Energy Management Plan, Operations & Maint. Program)
- Requires benchmarking in ENERGY STAR Portfolio Manager
- Requires hitting Energy Use Intensity target (EUI_t)

Clean Buildings Accelerators (CBAs)

- Utility programs that help end users address CB law
- Cohort workshops on CB concepts
- I:I coaching on technical concepts
- M&V via SEM-like approaches
- Leverage other utility incentives and programs



Puget Sound Energy: Max Rennie

Getting SEM started at your organization

- ◆ Establishing your own SEM program. You are not alone!
 - See if there are others at your organization that are interested starting an SEM program
 - Utility programs
 - Online resources (ISO 50001, SEMHub)
 - Clean Buildings Performance Standard

Online Resources and Contact Information

- ◆ **Online Resources**
 - SEM101 – SEMHub
 - ISO 50001 Ready – DOE
- ◆ **Contact Information**
 - Max.Rennie@pse.com
 - Beth.Gilbertson@pse.com

Seattle City Light: Graham Goodman

Strategic Energy Management at Seattle City Light

February 13, 2014
Graham Goodman

Energy Smart Industrial SEM



- Two-year performance period
- \$0.025-0.04/kWh
- Focus on behavioral, operational, and maintenance improvements
- May be a single building, facility, or campus
- Annual SEM Report includes:
 - SEM Annual Savings
 - Opportunity register that describes implemented energy efficiency measures
 - Documentation of Measurement and Verification
 - Performance Tracking System: Energy Sensei
- Sole Delivery dominant
- Energy Project Manager: supplemental \$0.025/kWh incentive for project portfolio exceeding 200,000 kWh

Clean Building Accelerator (CBA)



- Developed to help meet compliance objectives of Washington State Clean Building Performance Standard
 - Will be evolving to provide additional support with Seattle Building Emissions Performance Standard (BEPS)
- Two pathways:
 - Self-Led Online
 - Light, Cohort-based coaching
 - Four-month commitment
- Live virtual workshops
- Tailored 1:1 coaching
- Virtual walkthroughs
- Project recommendations, planning, and prioritization

Clean Building Accelerator (CBA)



Immediate, long-term cost and energy savings



Access to incentives and support services



Success stories for occupants and tenants



Persistent energy management practices



Scalable solutions for one or more buildings



Reduced emissions to combat climate change



Cleaner air and healthier communities

Clean Building Accelerator (CBA)



Upcoming Coaching Groups

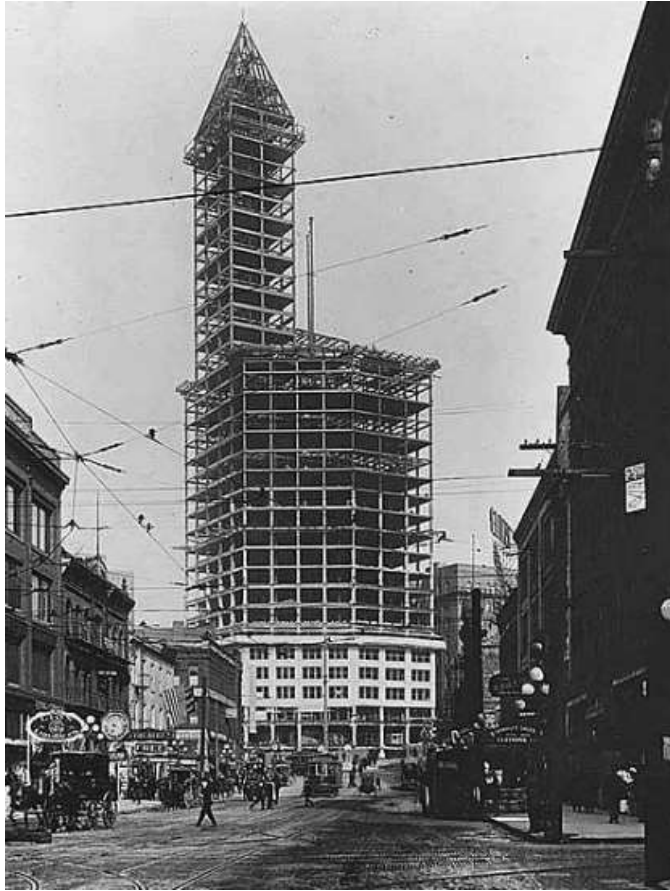
Starting February 27

Starting April 10

Starting July 30

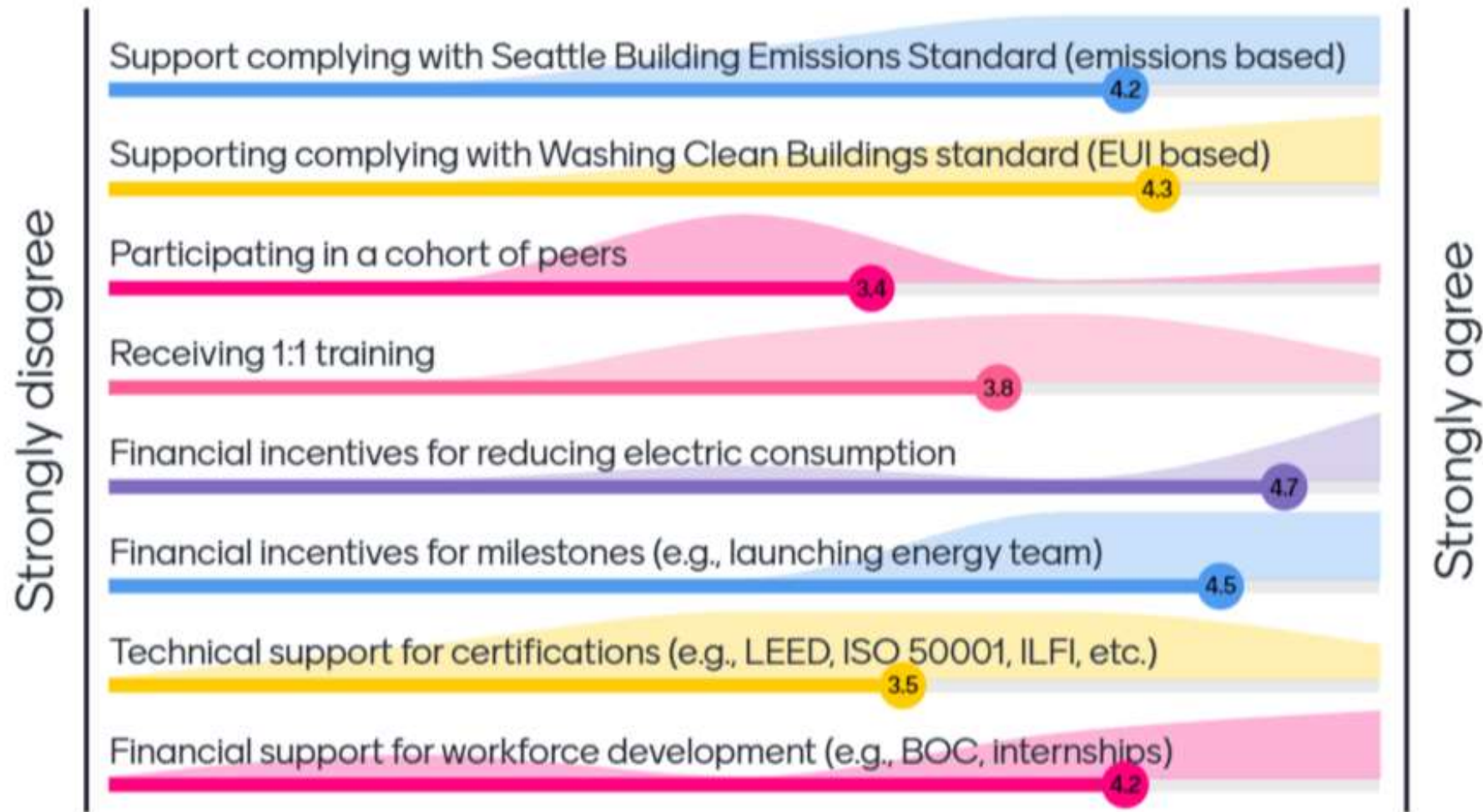
- To date, CBA has run 4 cohorts, serving over 30 organizations
- Who should participate?
 - Affordable Housing
 - Commercial real estate operated by businesses, organizations, and nonprofits that are serving frontline communities
- Questions about the program and eligibility can be directed to cleanbuildings@seattle.gov
 - Information session on February 21 for next cohort

Commercial and Multifamily Strategic Energy Management (SEM)

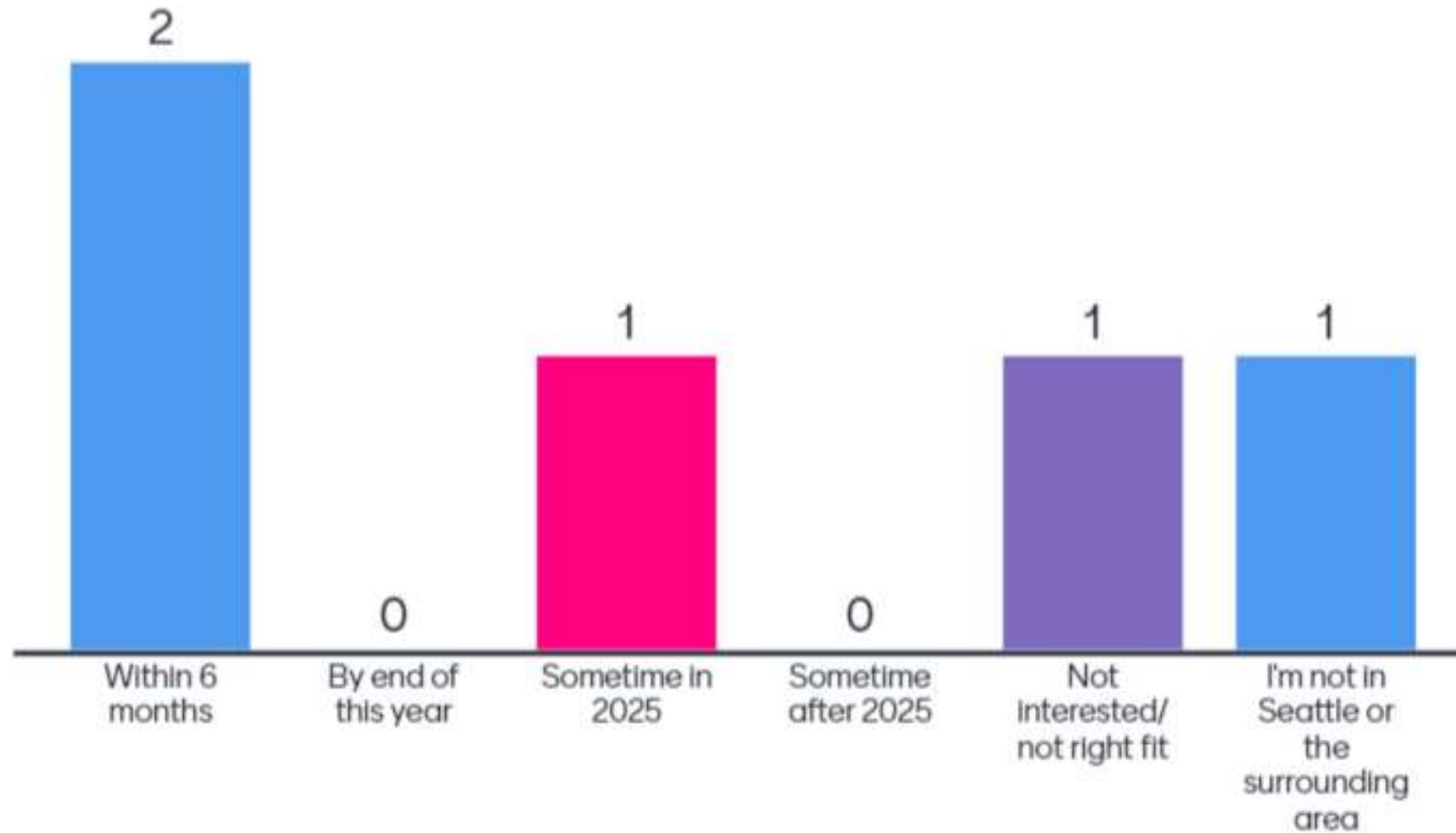


Under Construction!

Poll: what would best motivate you to participate?



Poll: When would your org. be ready to participate?



THANK YOU



Seattle City Light

Please send questions to
graham.goodman@seattle.gov

Puget Sound Energy: Ian Tachibana

Clean Buildings Accelerator



Feb 13, 2024

Presented by: Ian Tachibana,
Energy Management Engineer

HB1257: Clean Buildings Law

- ◆ The first statewide **commercial buildings performance standard** in the US
- ◆ Applies to **existing commercial buildings** greater than 50,000 sq. ft.
- ◆ The objective is to **lower greenhouse gas emissions** in existing covered buildings by meeting EUI targets by building type

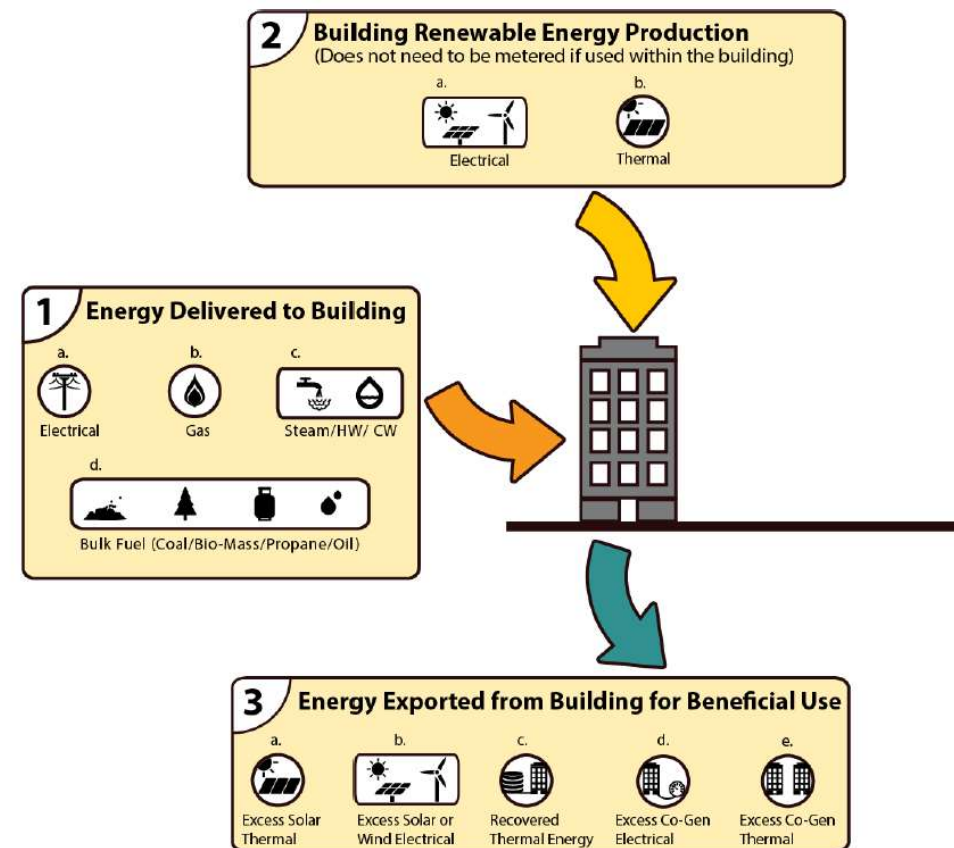
What are EUI's?

EUI = Energy Use Intensity

EUI_t = Energy Use Intensity Target

$$\frac{\text{annual net energy use (kBTU/year)}}{\text{Gross floor area (sq ft)}}$$

- ◆ Normalized way to measure energy use for different building types
- ◆ **Energy Star Portfolio Manager (ESPM)** is the required reporting tool
- ◆ Targets will be reviewed every **5 years**



Deadlines & penalties

- ◆ Compliance required by **June 1** of each year below with 5 year review cycles



- ◆ EMP and O&M program must be operationalized **one year prior to deadline**
- ◆ **1 year of energy data required** and EUI must be at or better than target

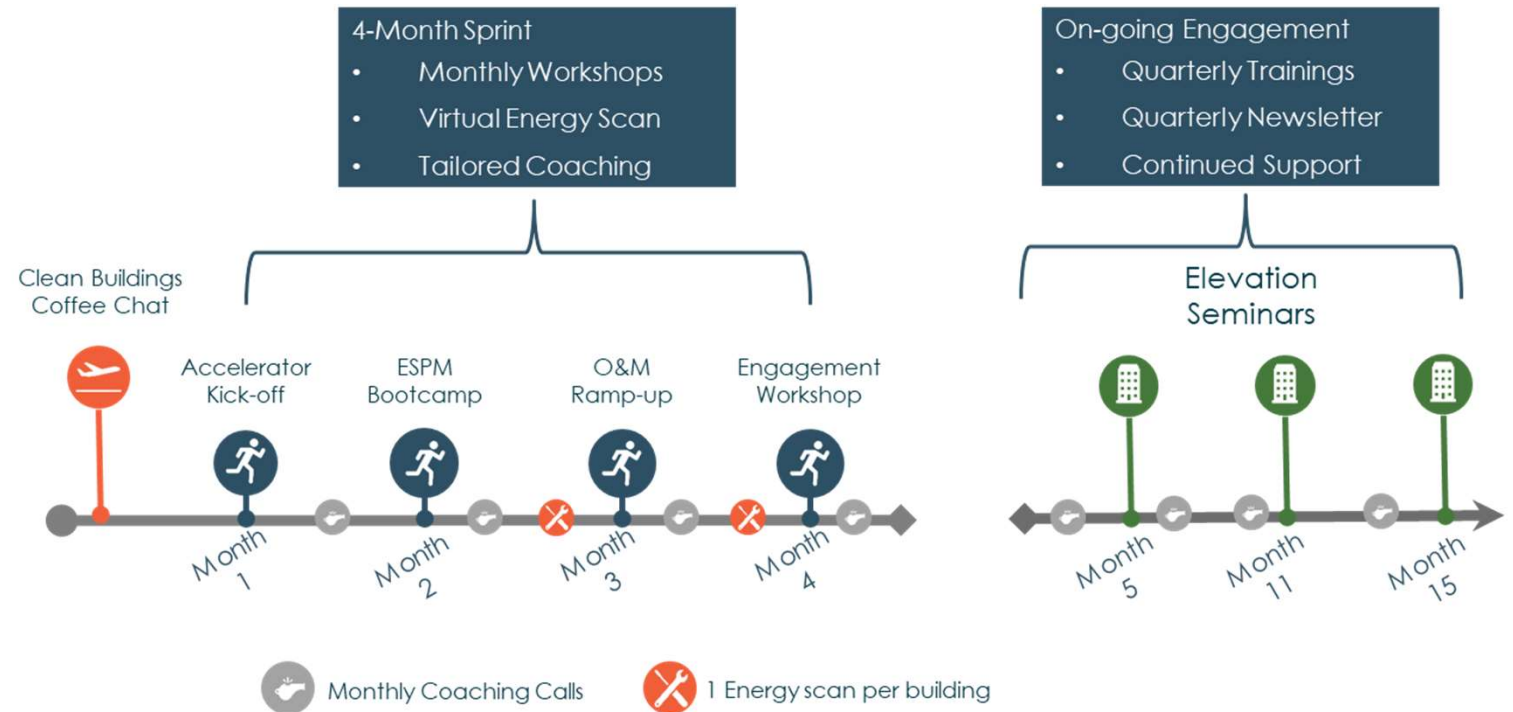
- ◆ Annual noncompliance penalty:

Mitigation plan: \$5000 + \$0.20/sq. ft./year

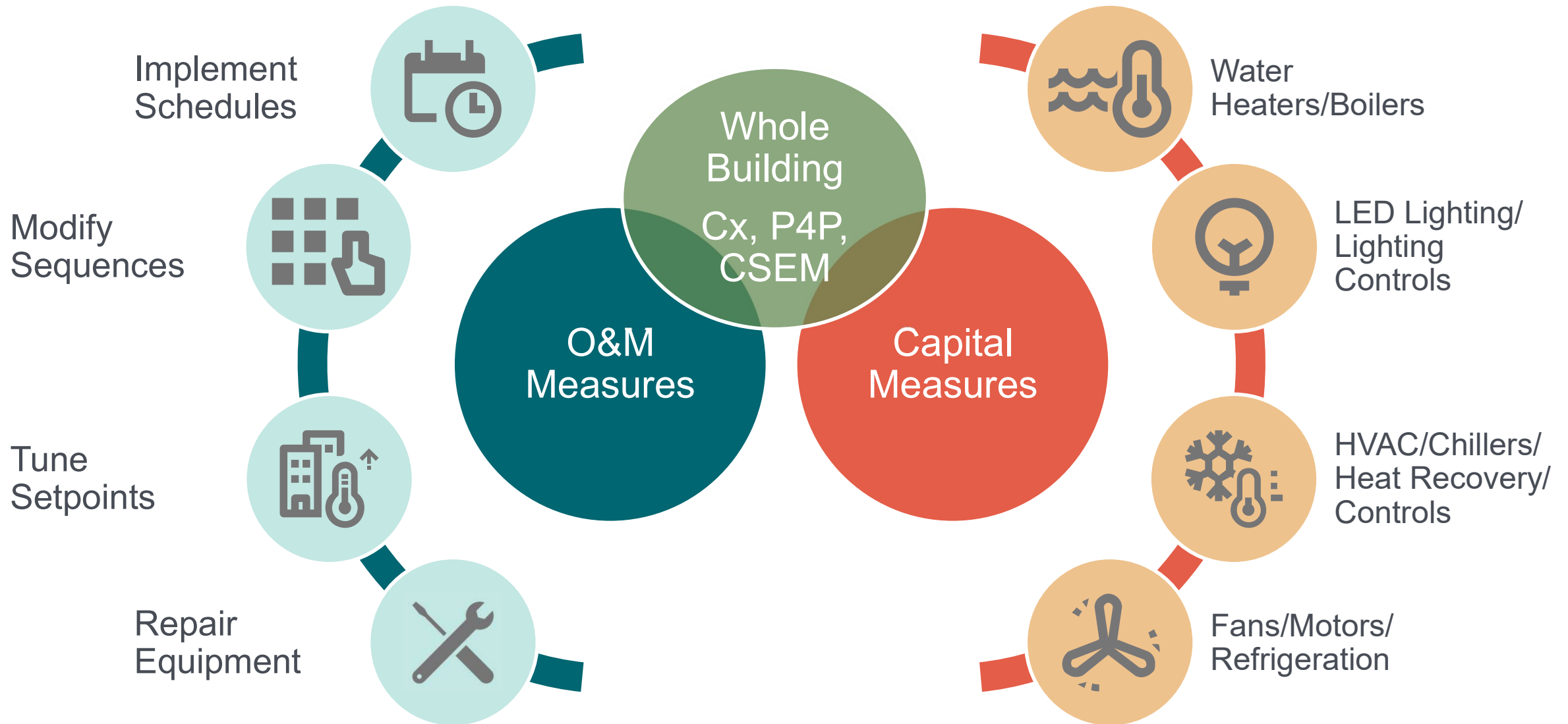
No mitigation plan: \$5000 + \$1/sq. ft./year

Clean Building Accelerator

- ◆ Designed to **help customers comply with the law**
- ◆ Partnered with Stillwater Energy
- ◆ Achieve energy savings with participants own buildings (up to 3 buildings)
- ◆ Program is **no-cost** to participants



Utility Incentive Programs



Visit other PSE programs at: <https://www.pse.com/business-incentives>

Where are we at?

- ◆ 12 cohorts, guided over 90 participants
- ◆ ~50% of the participants roll into other incentive programs
- ◆ Winner of E Source Achievements in Customer Experience; Winner of Public Utilities Fortnightly Top Innovator Award; Winner of Association of Energy Services Professionals Program Design and Implementation award
- ◆ Top 5 finalist for Edison Electric Institute 2023 Award; Nominated by NEEA for Leadership in Energy Efficiency Innovative Collaboration Award
- ◆ CBA adopted by several other utilities
 - Snohomish PUD
 - Pacific Power
 - Avista
 - Seattle City Light

Accelerator Kick-off dates

Tuesday
March 19, 2024
9-11 a.m.

Tuesday
June 11, 2024
9-11 a.m.

Not sure if the Clean Buildings Accelerator program is right for you?

Virtual orientation sessions: **Wed Feb 14; Tue March 5; Wed April 17th** – ALL 11a-12p

Panel Q&A

Poll: What questions do you have?

Are any of these resources available for organizations out of state?

In your experience, who in an organization really starts the ball rolling on SEM? Is it usually top-down due to performance standards (for example), or is it usually more of a grass-roots effort

Is there data that shows how much more energy is saved by orgs that use SEM? Like, 10% more than those that don't? (Not guessing at a real number, just giving example of data I'm asking about)

Do the accelerator cohorts take a lot of time to participate in?



Resources

- Lighting Design Lab webinar featuring Ethan Rogers from US DOE, Feb 15, 2024, covering ISO 50001 (the global SEM standard) and DOE's 50001 Ready program
- <https://www.semhub.com>
 - Has links to many studies/reports, resources, etc. (e.g., studies for Energy Trust of Oregon on SEM persistence, and many more)
- <https://www.aceee.org/proceedings>
 - Has papers presented at ACEEE Summer Study conferences; there was an SEM panel at the 2015 industrial summer study with dozens of papers
- <https://www.aceee.org/nasemc>
 - North American SEM Collaborative; website has research, links to webinars



Thank You!

Chad Gilless, Stillwater
Graham Goodman, SCL
Max Rennie, PSE
Ian Tachibana, PSE

