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Working Groups



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NWSEMC/NASEMC Decarbonization Working Group

Decarbonization Working group Members

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Emily Startz

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Scott Jasinski

2022 NWSEMC Decarbonization Working Group

SEM as a Pathway to Decarbonization



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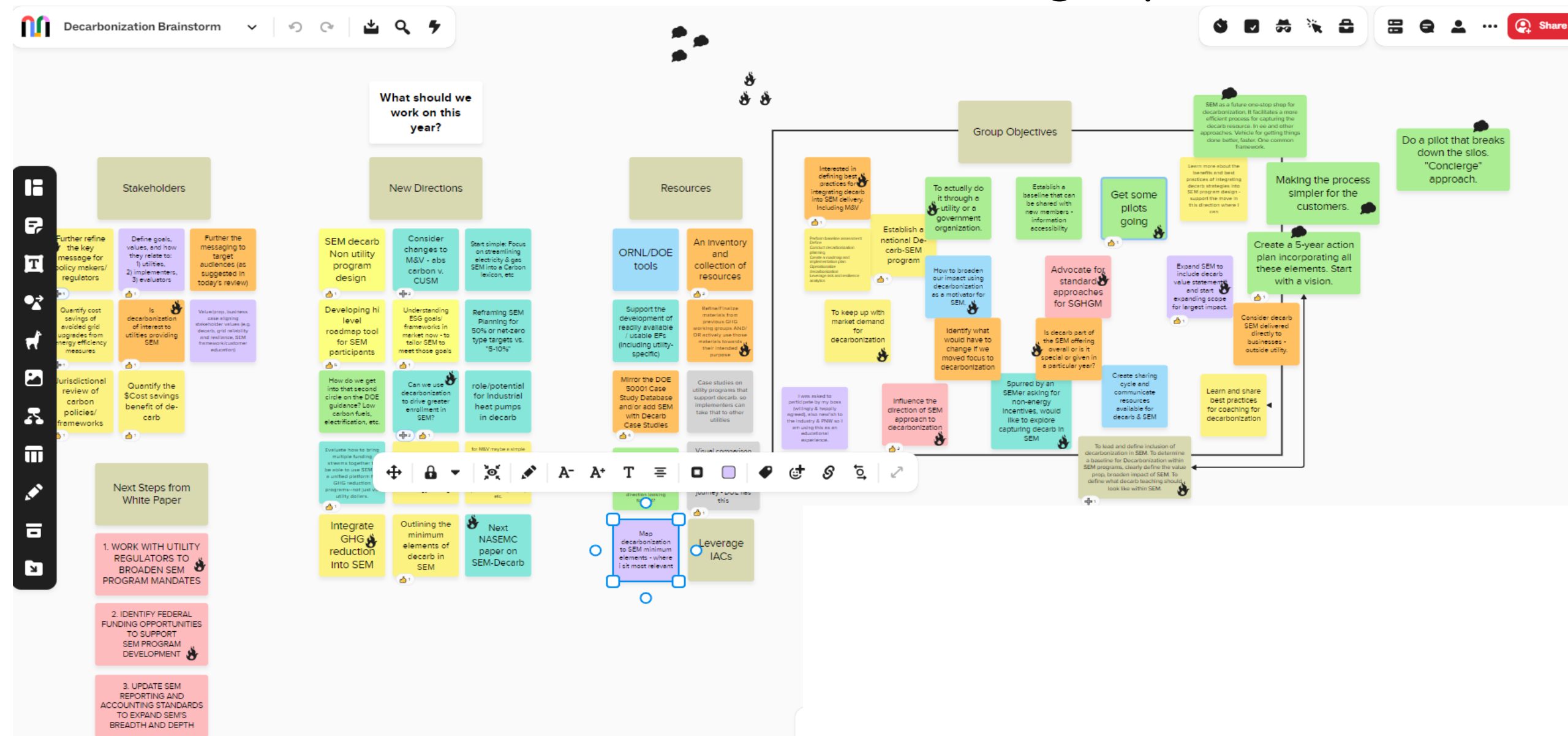
SEM is the ideal platform for decarbonization that, in addition to reducing utility-supplied energy use, can reach beyond energy efficiency to achieve GHG reductions in all energy aspects of companies' businesses.

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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

NASEMC/NWSEMC SEM Decarbonization Workgroup



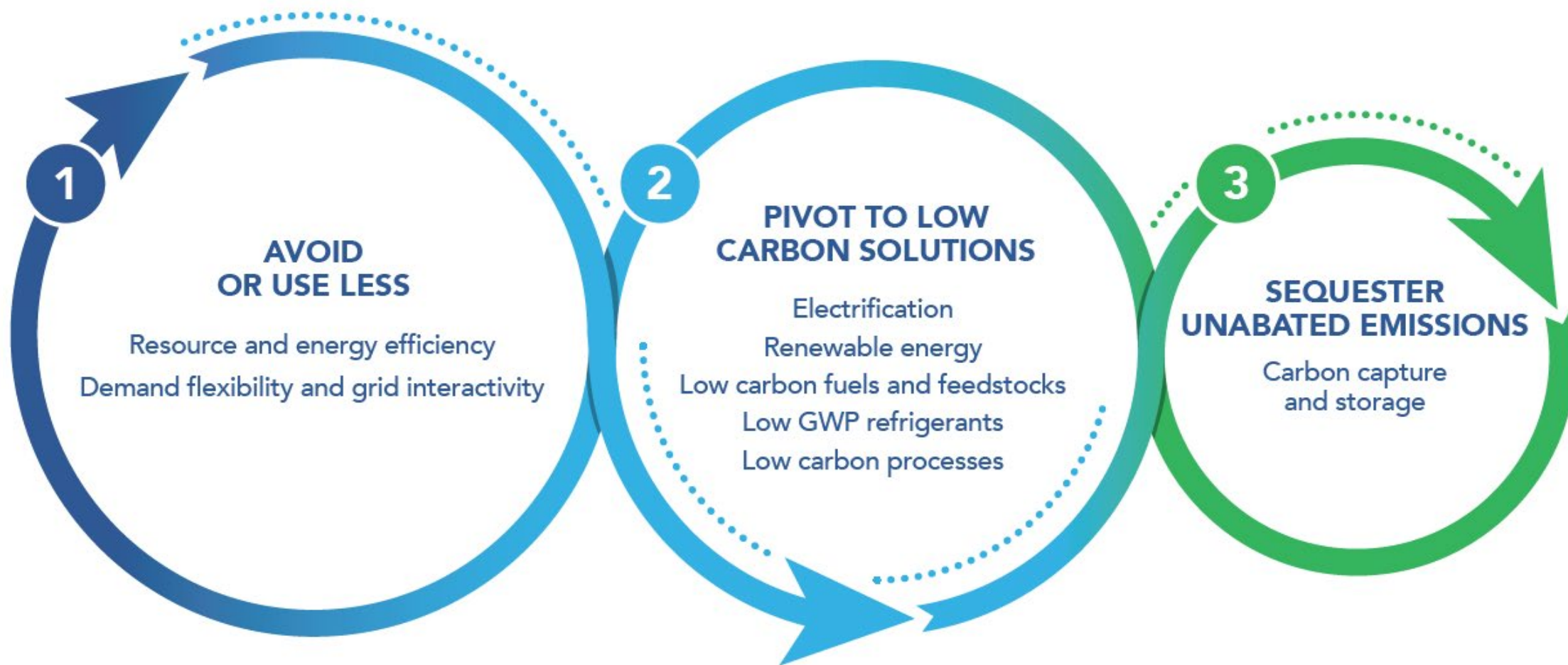
Decarbonization Workgroup

Next steps:

1. Work with utility regulators to broaden SEM program mandates
2. Identify Federal funding opportunities to support SEM program development
3. Update SEM reporting and accounting standards to expand SEM's breadth and depth

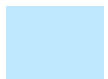


DOE Decarb Prioritization



Research Work

1. Articulation of how SEM as a decarbonization strategy will further energy efficiency efforts and benefit regulators, utilities, and customers.
2. Market study of commercial and industrial customers to confirm the need and desire for SEM to capture decarbonization opportunities, at the site level and also across all sites owned by participating corporations.
3. Voluntary survey for NASEMC members to ask their participants.
4. Interviews with NARUC, State PUCs, and their equivalent in Canada to determine feasibility of augmenting utility SEM programs with federal money to include decarbonization. Do they see decarbonization as part of their mandate?
5. Summary of interviews and outline plan.
6. Evaluation of funding needed to do this.
7. Research and recommendations on funding sources



NASEMC



In-kind



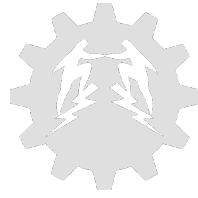
ACEEE



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K-12 Schools Working Group

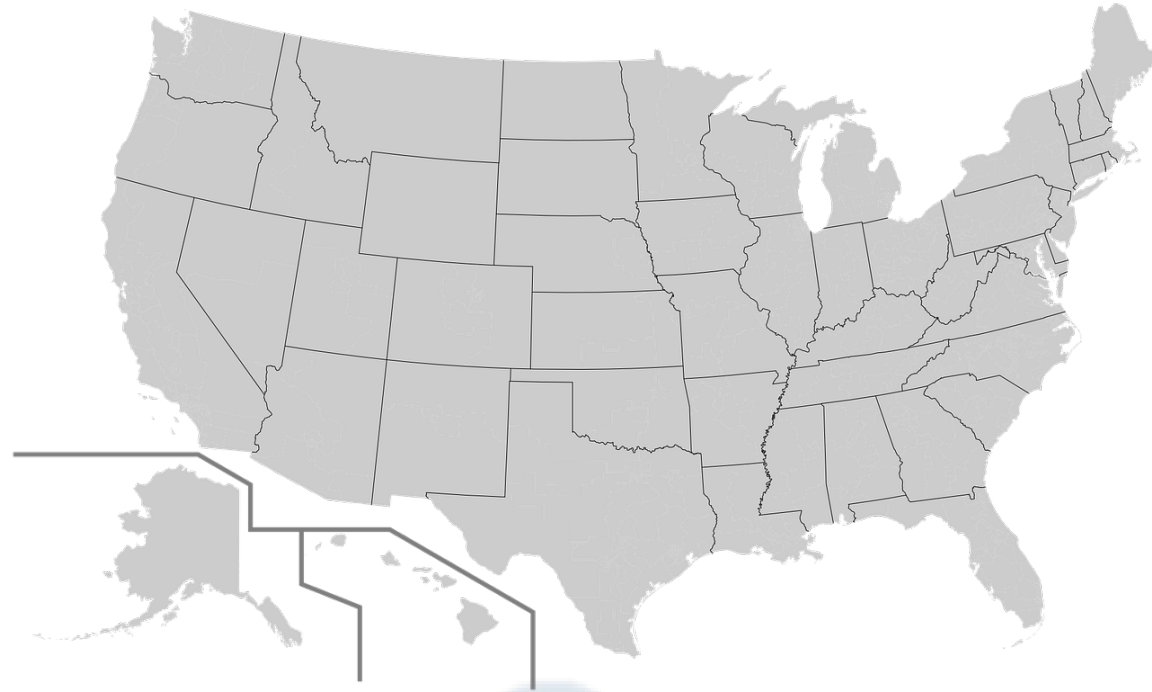
Wendy Gibson & Kathleen Belkhatat

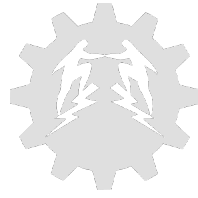


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Members

- Oregon
- Washington
- Tennessee
- New York
- California

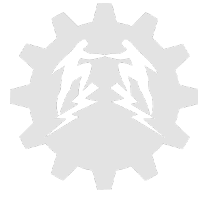




Overview

- Started in 2024
- Defined areas where we see gaps and opportunities (subgroups)
 - Resource constraints
 - Curriculum
- SEM Summit in August
- More work to do in 2025





Problem Statements & Needs

Resource Constraints

- Schools lack adequate resources to implement energy efficiency measures
- Need: maximize a child's learning environment, meet climate goals and maintain occupancy health and comfort.

Energy Curriculum

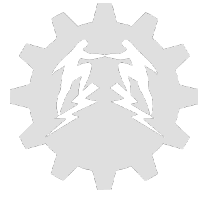
- Lack of consistent/sufficient energy curriculum
- Need: Easy to access, engaging content to enable educated consumer base or workforce to implement energy efficiency.



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The AI Revolution in SEM: A New Era

Brought to you by Beyond the E



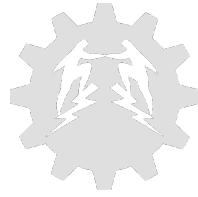
What is Beyond the E?

We work to enhance what SEM brings to energy efficiency by looking at indirect and long-term benefits such as:

- Engagement
- Program design
- Customer service
- Non-energy resource conservation

This year, the Beyond the E Working Group developed a work product around the concept of **AI Best Practices and Use Cases for SEM.**





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2024 Beyond The E Team



Karen Brooks

**SEM Program Manager
SEM & MFSEM Coach
Strategic Energy Group**



Marti Mendenhall

**Senior Facilitator and
Curriculum Development
SEM & MFSEM Coach
Strategic Energy Group**



Lana Stern

**SEM Program Manager
SEM & MFSEM Coach
Alternative Energy Systems
Consulting**

Key Contributors: Joseph Ball (PG&E), April Cannon (ASK Energy), Robert Greenwald (Prism Engineering), Jay Mullin (Goldfin Consulting Inc.)

2024 Beyond the E 2024 KICKOFF: Topics Discussion

Multi-utility focus (energy, water, solid waste, transportation)

[Rose] [Positive]	Seems like this is right in the wheelhouse of NEES	Water supports buy-in and can save energy		Can help reinforce root cause/ systems thinking
[Thorn] [Negative]				
[Bud] [Promising]	Can be interesting how these interact with energy, but can also be distractions	Can we use stormwater from existing water treatment facilities (who are SEM customers)		

Story telling in facilitation

[Rose] [Positive]	More than this one, storytelling or facilitation is a really effective use of a commitment. It would be a powerful tool to introduce to the network			
[Thorn] [Negative]				
[Bud] [Promising]	As a related extension of this idea, it might be interesting to think about supporting this to tell their own stories to engage their stakeholders	It feels like there's always an interesting question of how to keep ECS engaged with SEM while also ensuring that it's not too easy to address		

Executive/Organizational engagement and commitment toolkit (modify existing)

[Rose] [Positive]	Could help build commitment in context of net zero			SEM can bring sustainability policies to life
[Thorn] [Negative]	Corporate greenwash could lead to SEM participation with no real outcome			
[Bud] [Promising]	See also the Bud in the 1st storytelling in	Graduate SEM Programs. Do they exist?		

Carbon Neutrality and SEM: Examine strategies for organizations to achieve carbon neutrality through SEM initiatives

[Rose] [Positive]		ISO 50001 Navigator Tool		Lots of interest in market
[Thorn] [Negative]	This might overlap too much with the GHG emissions group	Focus on Electrification in CA is problematic in industrial SEM	Not allowed to incorporate or support fuel switching, electric only oil	Fuel switching is expensive
[Bud] [Promising]	Local legislation (ex. Seattle Building Emissions Performance Standard)	Focus on Electrification in CA shows C-SEM promise		How to make this topic more politically "routinized" so it can reach large audience/ company based

Regulatory and Policy Implications: Explore the latest energy regulations and policies affecting SEM and how organizations can navigate compliance effectively.

[Rose] [Positive]	Increased EULs per Impact Evaluation		Washington Green Buildings/ Seattle Building Emissions Performance Standards	
[Thorn] [Negative]	World have to focus on a state. I don't feel like we have the standards to cover every state or country	This would vary a lot by jurisdiction		Fuel switching incentive policies
[Bud] [Promising]	CA using Total System Benefits (TSB over TRC)			

Behavioral Energy Management: Explore the role of employee engagement and behavior change in achieving energy efficiency goals within organizations.

[Rose] [Positive]	This is central to a lot of SEM engagements	I love this over the could easily come up with a book for it to use and why it could be useful and fun - Matt	Behavioral changes have the potential to reduce energy consumption	
[Thorn] [Negative]				
[Bud] [Promising]	Is there prior working group work we could build on?			

Global Energy Trends: Provide insights into international energy trends and their implications for SEM strategies on a global scale.

[Rose] [Positive]	Learn from areas typically not in our purview			
[Thorn] [Negative]	Interesting but doesn't seem central to the Beyond the E focus of this group			May have limited practical application
[Bud] [Promising]				

Intersection of SEM and Health/Safety (i.e., safety - closing windows doors, bad actors, etc.; health - bldg. pressure, air quality, proper lighting; could include mental health (SAD))

[Rose] [Positive]	provides more buy in for SEM interventions	It's an interesting conversation to have as it relates to how we can better understand the intersection of health and safety in the context of energy and building performance		
[Thorn] [Negative]				
[Bud] [Promising]				

SEM & AI - How to use effectively.

[Rose] [Positive]	Using a tool that can produce ideas, content, etc.	Generating stories from others is repeated industries to see how well this has worked for them; price / costs	This can be the foundation for a more robust system and allow us to understand the value of the data we have in the building and how to utilize and protect the data	Create a guideline or "toolkit" on how to utilize and protect the data
[Thorn] [Negative]	The time and commitment it takes to review for errors			
[Bud] [Promising]				Possibility of AI to help with energy models and MS&V

What SEM-related AI concepts or questions should we pursue this year?

How can we use AI to identify EE projects for companies by segment (manufacturing, food, commercial etc)? - Logan

The use of AI in final reporting KB

How to cope with the increase in energy usage KB

"It's estimated that 80% of the data center power will... be consumed by AI over the next 15 years. So, at the end of the day, access to power is a key differentiator."

DigitalBridge Group CEO Marc Ganzi, Q2'23 earnings call

How can SEM bring in organizations that utilize data centers (Diana, MCE)

Use & limitations in quantifying savings (baseline models) (Jay)

Possibility of AI to help with energy models and M&V

What are the risks of AI for SEM? (Josh)

As consultants, what are the IP and privacy considerations re: AI (Josh)

AI in building automation systems - what exists already, what's in development for the future, pros, cons, things to look out for - Lana

What opportunities can SEM programs suggest for customers (Diana, MCE)

How can participants use AI in their energy management efforts (Jay)

Predictive Maintenance: AI-powered predictive maintenance systems can anticipate equipment failures in energy infrastructure, such as power plants or transmission lines, minimizing downtime and reducing maintenance costs. KB

Energy Management in Buildings: AI-based systems can optimize energy usage in buildings by adjusting heating, cooling, lighting, and other systems based on occupancy patterns, weather forecasts, and energy prices, leading to energy savings and increased comfort. KB

1. How can AI be utilized to optimize energy usage in industrial settings?

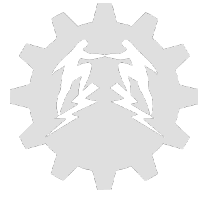
2. What AI-based solutions can be developed to forecast energy demand more accurately?

3. How can machine learning algorithms improve the efficiency of energy production and distribution?

4. What are the potential applications of AI in smart grid technology and energy infrastructure management?

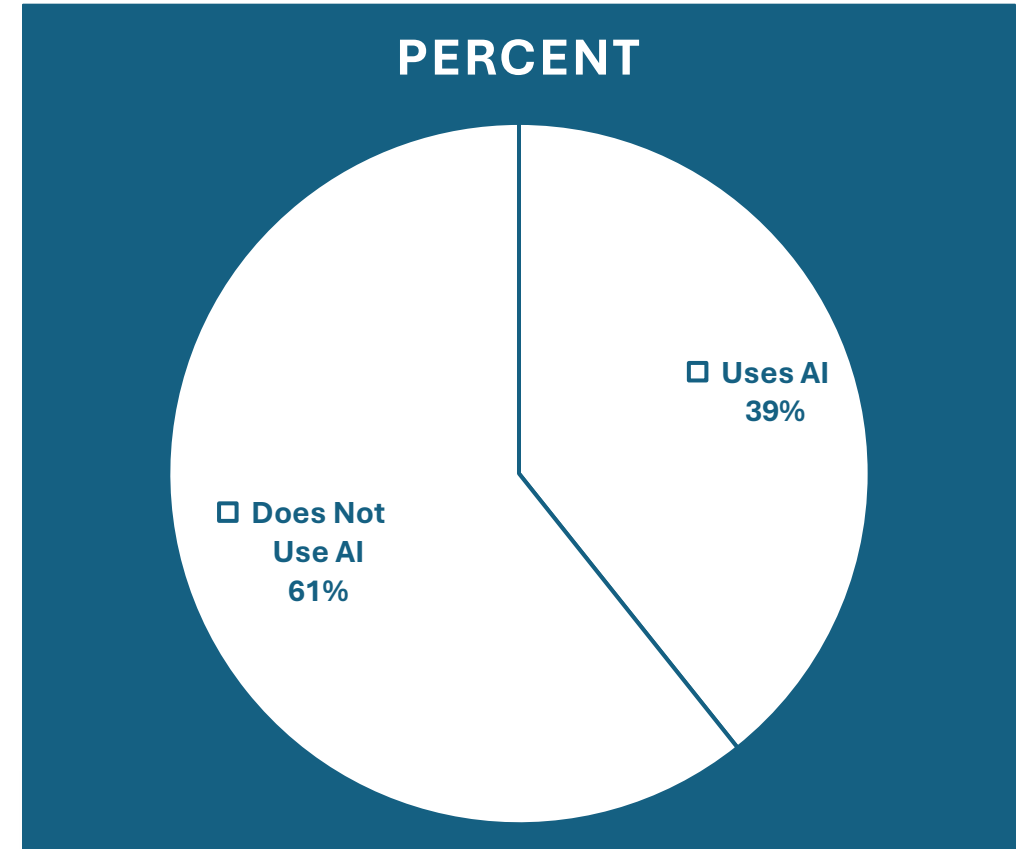
5. Can AI be used to identify and prioritize energy-saving opportunities in commercial and residential buildings?

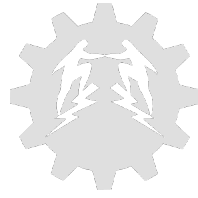
6. How can AI help in real-time monitoring and control of energy systems to minimize waste and maximize efficiency?



Overview of Survey Results

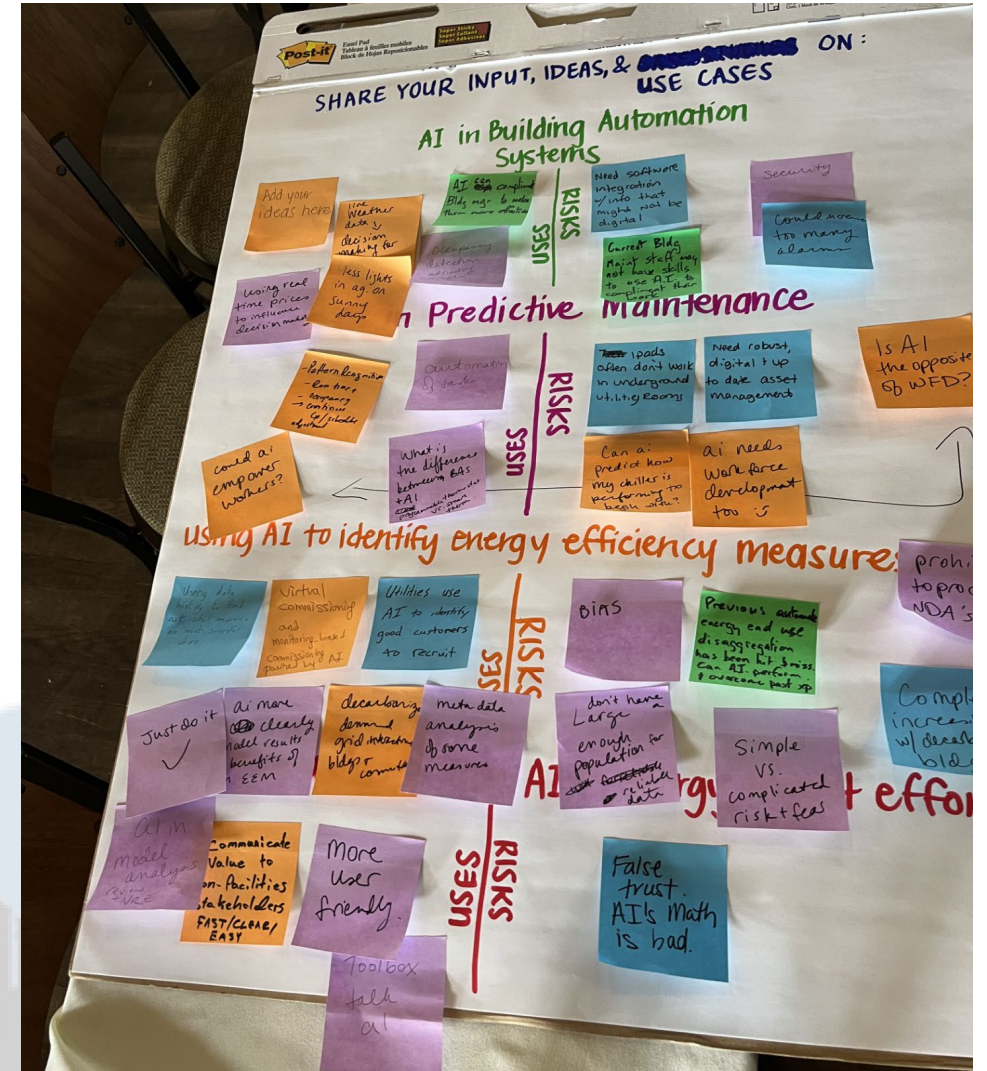
- 11 out of 28 surveyed members of the SEM Community responded that they use AI.
- Common uses include brainstorming and refining communications, process understanding, and creative tasks.
- Don't feel left behind if you're not using AI!





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Shoutout to SEM Summit





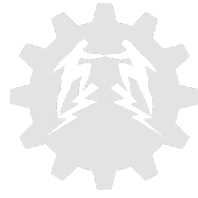
The AI Revolution in SEM: A New Era



TABLE OF CONTENTS

1. Introduction and Survey Results	1
2. Basic Guidelines for Interacting with AI	3
3. Guide to AI Prompts in SEM	6
4. AI in SEM Delivery	11
5. AI in Building Automation Systems	14
6. AI in Predictive Maintenance	17
7. Summary	21
8. AI Glossary	22

Scan QR code
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product!



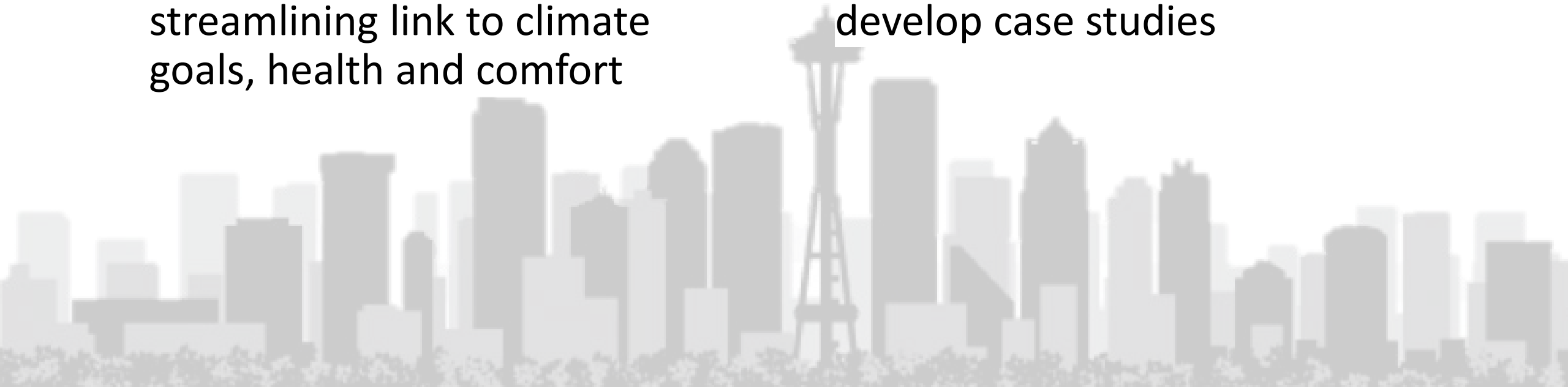
Objectives

Resource Constraints

1. Provide avenues to identify and secure additional resources
2. Provide recommendations for streamlining link to climate goals, health and comfort

Energy Curriculum

1. Provide list of curriculum resources
2. Identify best practices and develop case studies





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SEM Summit Recap

Explored ways to address climate anxiety in students by directly empowering students to engage in impactful, visible SEM activities such as:

- Treasure hunts
- Energy modeling data collection
- Energy planning
- Creating an energy dashboard

Thanks

5 Infield LF 298
24 Tomas RF 298
44 Goldschmidt 1B 346
11 Pollock CF 305
2 Hill DH 219
7 Castillo C 242
19 Lamb 3B 277
16 Chirgus 2B 233
13 Ahmed SS 228
38 Ray P 2.63

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AVG	238			28
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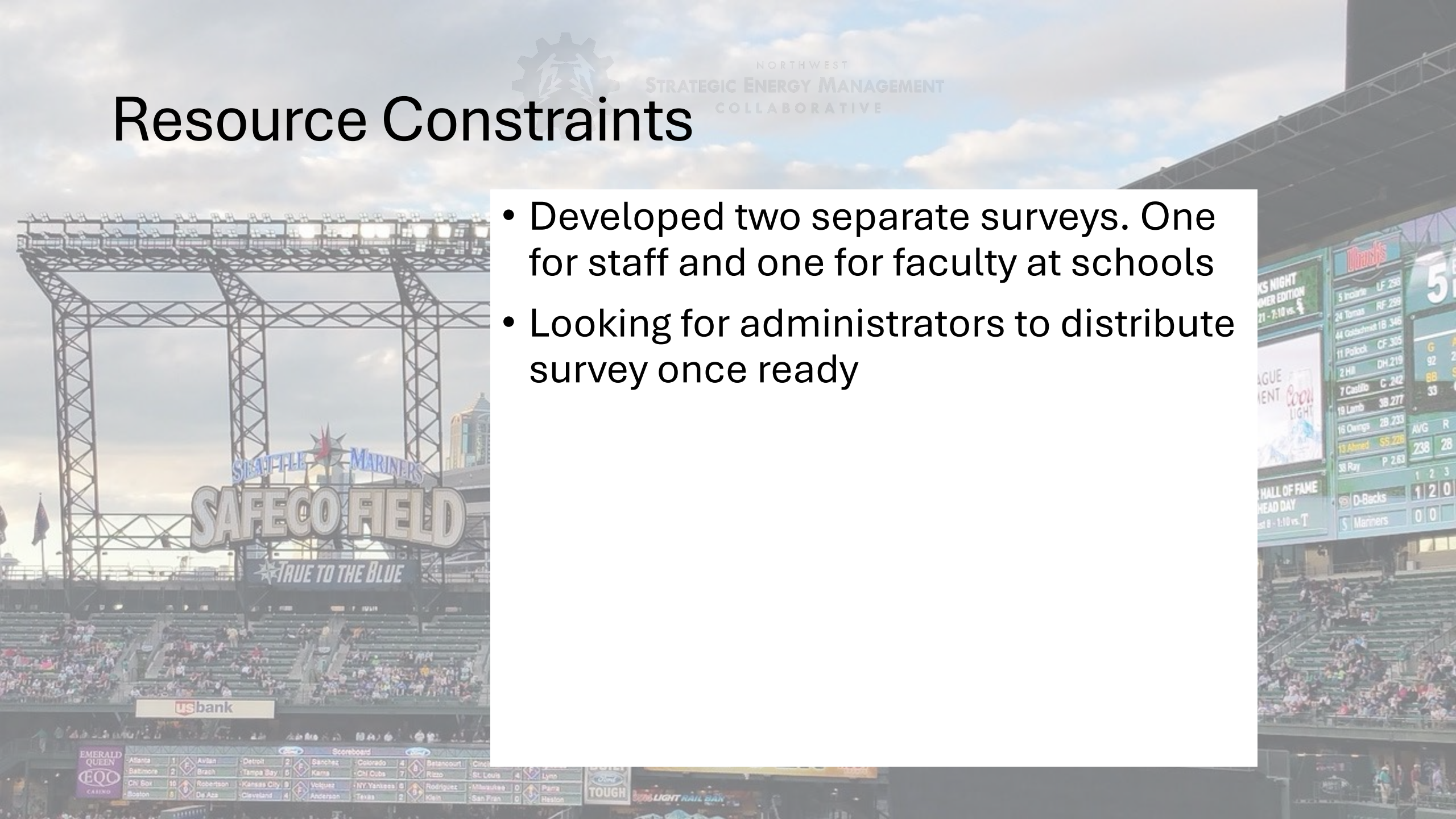
1 2 3
D-Backs 1 2 0
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Resource Constraints

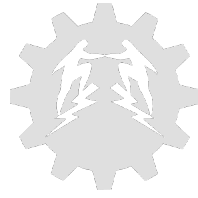
- Developed two separate surveys. One for staff and one for faculty at schools
- Looking for administrators to distribute survey once ready



Energy Curriculum

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- Identified methods to explore
 - Infuse into existing curriculum
 - Student clubs
 - Classroom guests
 - Student internships
 - Certification/energy bootcamp for teachers
 - Parenting advocacy



Next steps

- Resource Constraints
 - Finalize and distribute surveys
 - Conduct persona activity
- Curriculum
 - Expand upon curriculum inventory:
<https://app.smartsheet.com/sheets/GPR4RvPwHxm2q4rX6G78CJW5PXgMXFRpQmjxmfv1>
 - Design student specific SEM activities