



# Looking Beyond Operational Savings: Quantifying SEM's Influence on Capital Projects



# Thank You!

Erika Kociolek, Energy Trust

Dan Rubado, Energy Trust

Ted Helvoigt, Evergreen Economics

Jenny Fraser, Evergreen Economics

Ryan Bliss, ADM Associates





## Agenda

- What is SEM?
- Energy Trust's SEM offerings
- Research questions
- Why did we do this research?
- Methods (in brief)
- Findings
- Next steps

# What is SEM?

## Strategic Energy Management

Empowering customers to save energy through forming teams, setting goals, tracking energy consumption, and identifying opportunities to save energy



# Energy Trust's SEM offerings

## **Commercial**

Offered since 2011

Long-term engagement

Multiple campuses/facilities  
cycling in and out of active  
participation

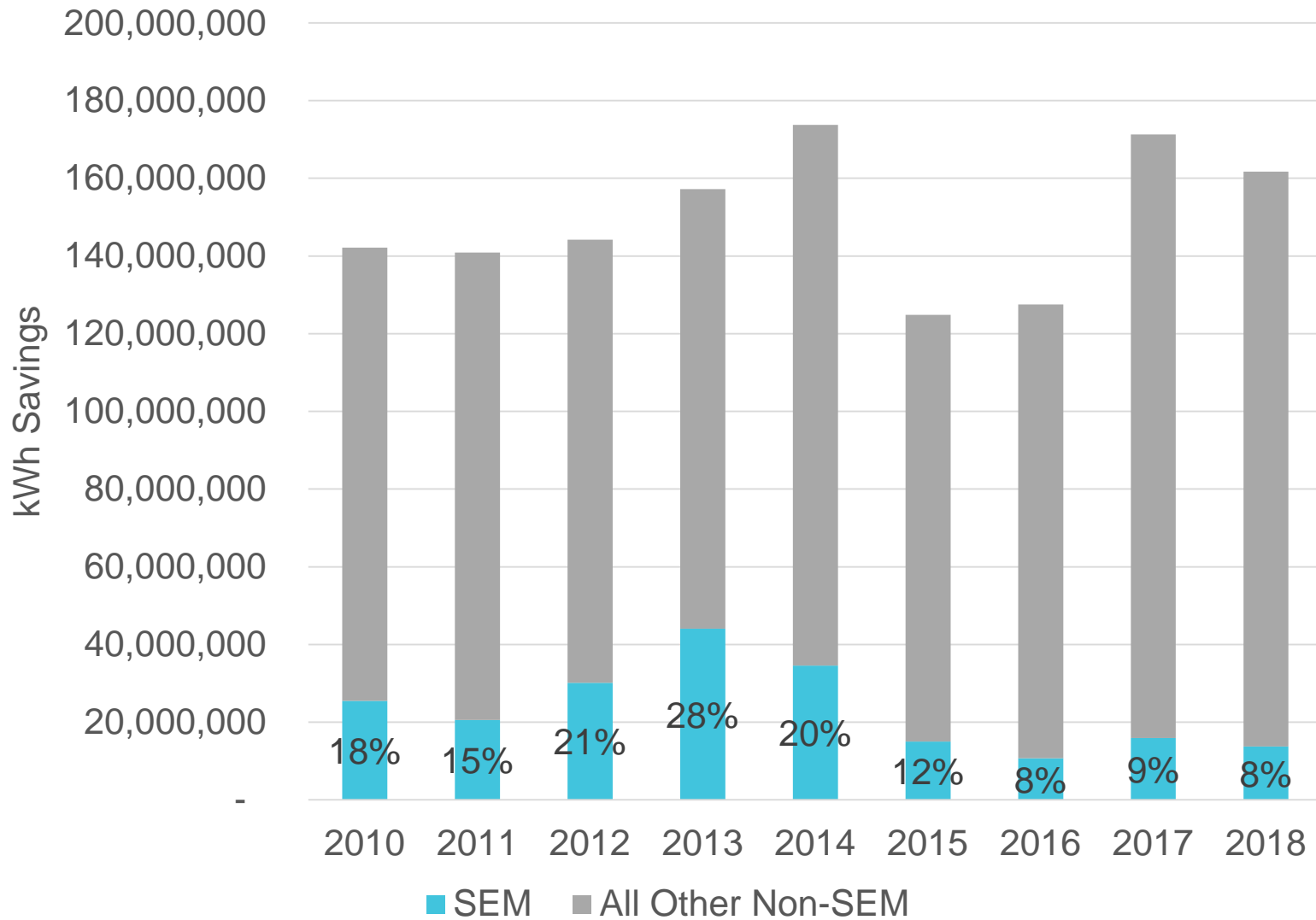
## **Industrial**

Offered since 2009

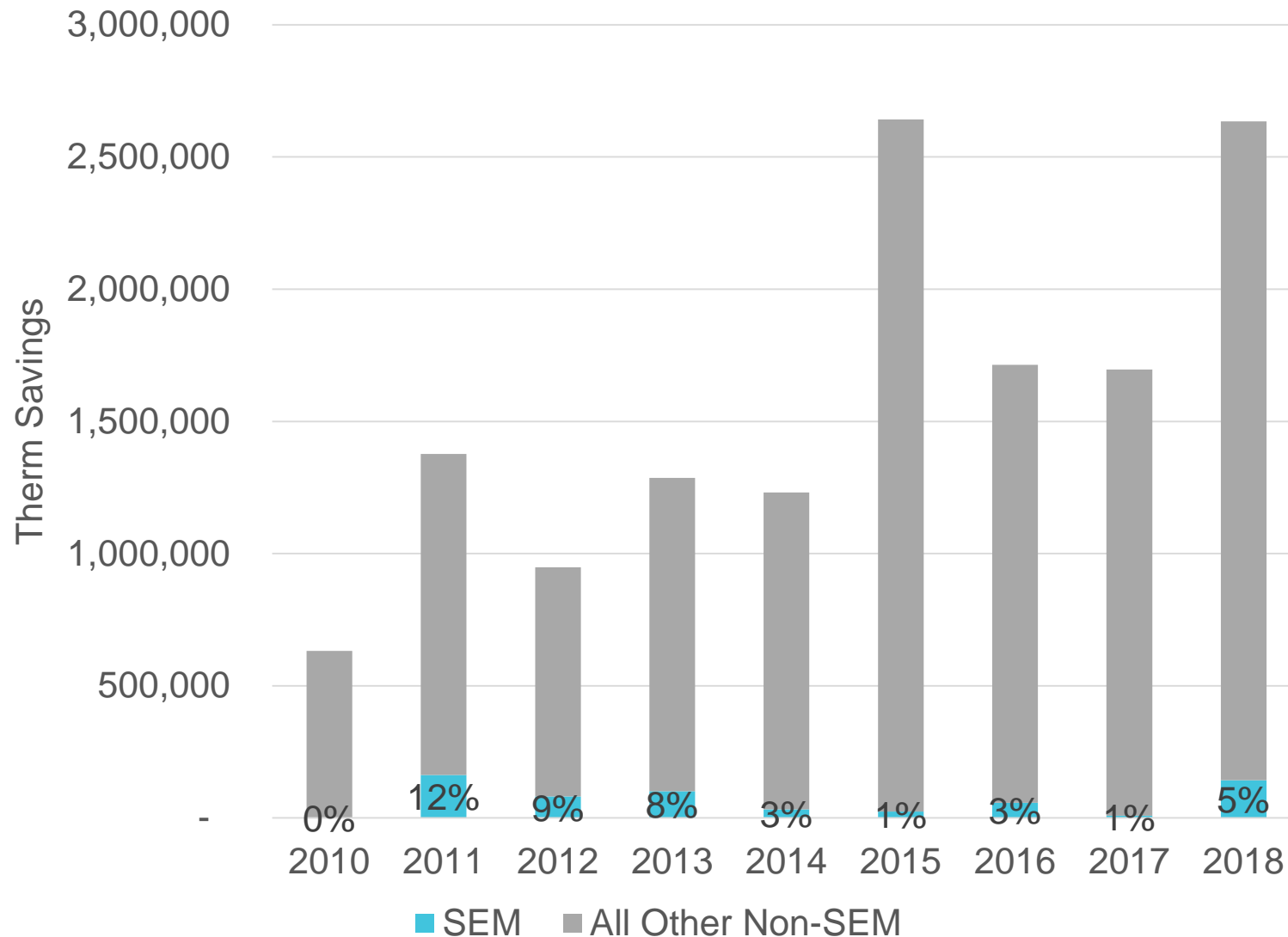
Typically a single campus/facility  
Shorter-term engagement\*



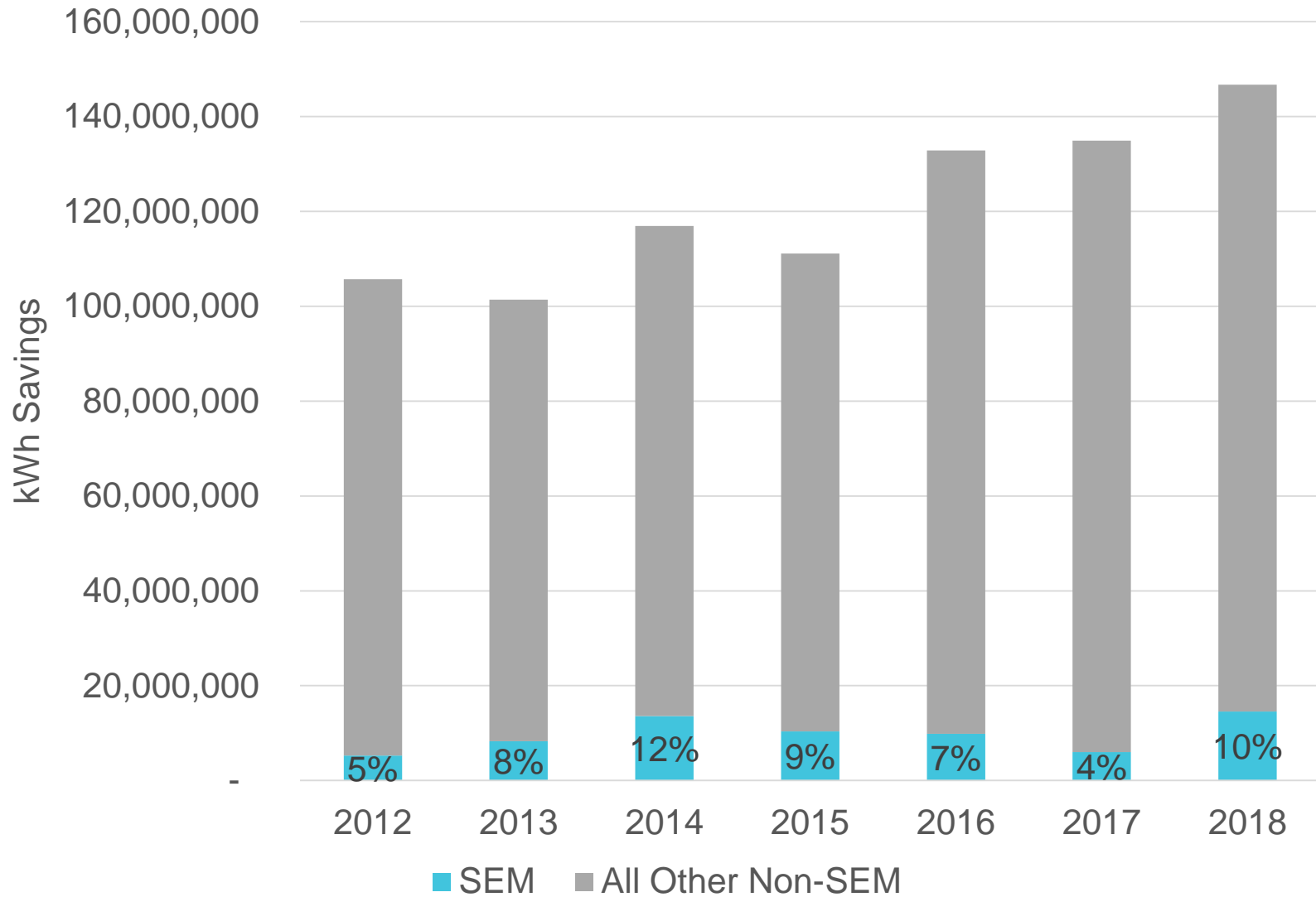
# Savings from industrial SEM over time



# Savings from industrial SEM over time

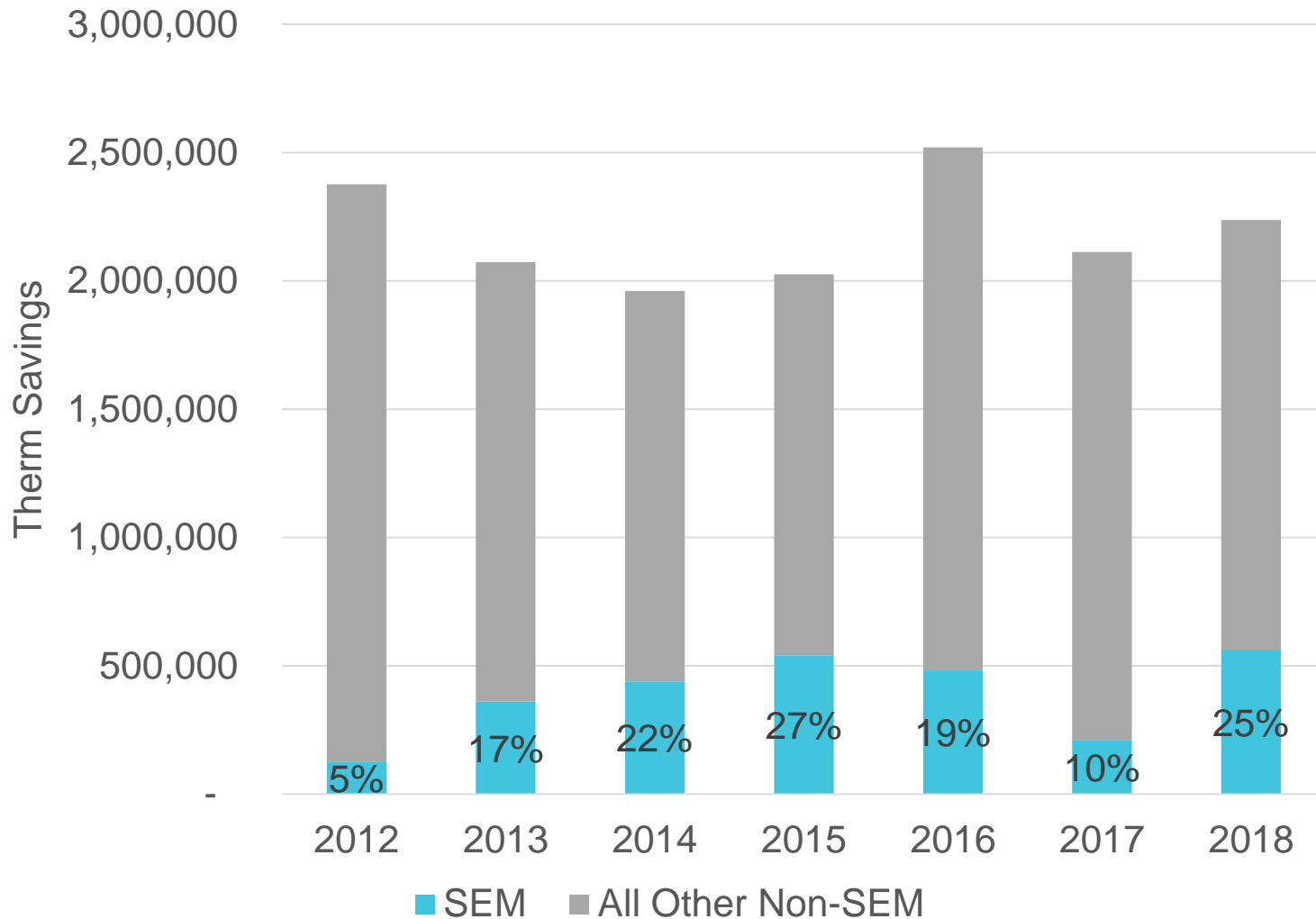


# Savings from **commercial SEM** over time





# Savings from **commercial SEM** over time



# The research questions

If, and to what extent, does participating in SEM affects a customer's likelihood to complete capital projects?

Does SEM impact the size of capital projects completed?



# Drivers for this research

Program staff hypothesize SEM participants do more capital projects - test this empirically

Update prior analysis of the impact of SEM on program participation

Assess the value of SEM beyond energy savings



# Methods (in brief)

## Commercial

- Used several different regression models to estimate the impact of SEM on sites' likelihood to complete capital projects and total savings from capital projects
- Used 2012-2018 data
- About 500 SEM sites



# Commercial Findings

- Sites enrolled in commercial SEM in a given year are **17%** more likely to complete a capital project than sites not enrolled in SEM in that year
  - If enrolled in SEM in the prior year as well, sites are **26%** more likely to complete a capital project than sites not enrolled in SEM in that year
- Savings from those projects equate to **49,000 kWh** and **440 therms** (on average) more than sites not enrolled in SEM



# Methods (in brief)

## Industrial

- Used regression models to estimate the impact of SEM on sites' number of capital projects and total savings from capital projects
- Randomly assigned non-SEM sites to SEM years, and developed weights
- Used 2012-2018 data
- About 100 SEM sites



# Industrial Findings

- SEM is associated with about **one** additional capital project compared to sites not enrolled in SEM in the two-year period after SEM
- Sites enrolled in industrial SEM achieve about **159,000 kWh** more in savings than sites not enrolled in SEM in the two-year period after SEM
- No statistically significant differences in therm savings between sites enrolled in industrial SEM and sites not enrolled in SEM



# Next Steps

- Exploring if, and if so, how, it may be possible to allocate some SEM costs to other program segments
- Recent and forthcoming SEM research:
  - Analysis of free-ridership responses by SEM participants and repeat participants (presentation tomorrow – session 8A)
  - Industrial SEM persistence study







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