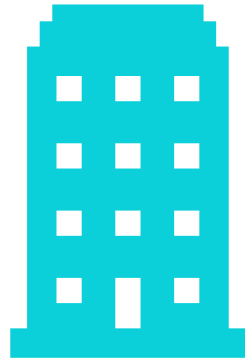


Commercial Sector

**Oregon Utility Roundtable
November 1, 2023**



Agenda



Energy Management in the
Commercial Sector



Commercial HVAC Reimagined



Energy Management



Easy Wins with EPMS



Energy Project Manager measure

No direct savings claimed
\$0.025/kWh 'bonus' for completed projects



Build a relationship and a pipeline

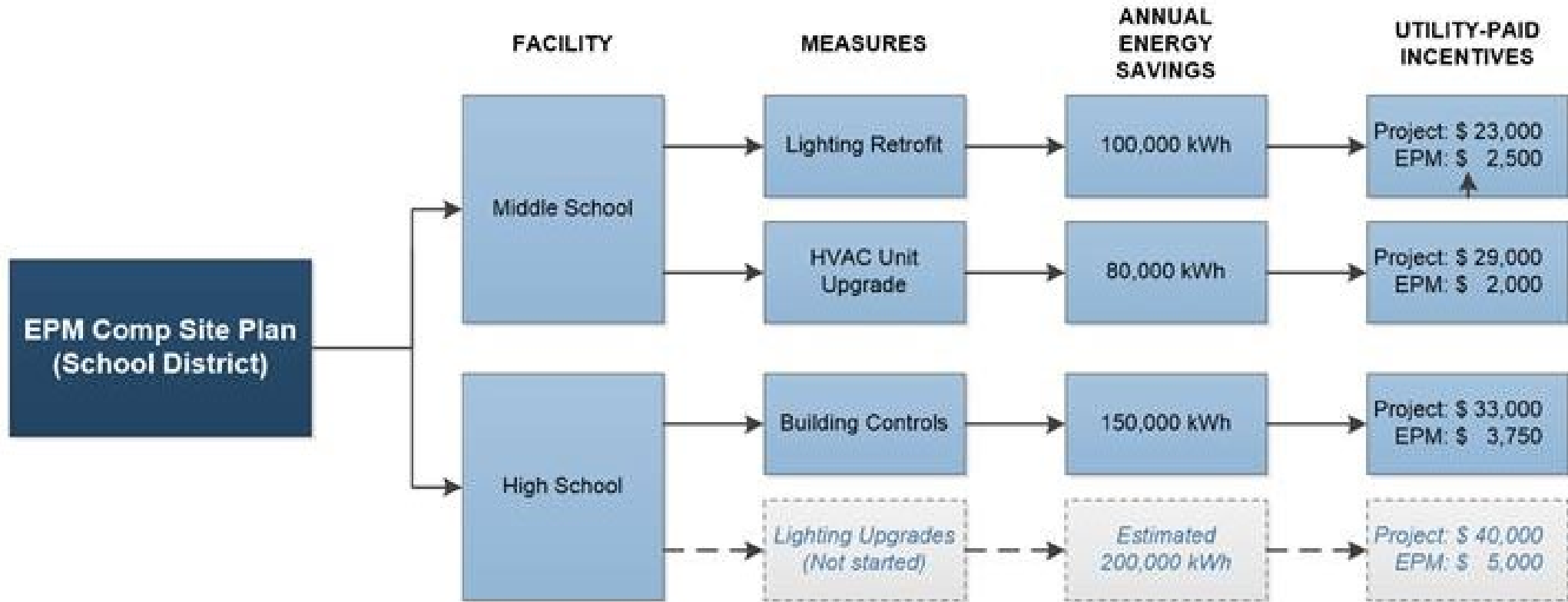
Comprehensive Site Plan with 200,000 kWh
Minimum one non-lighting measure



Aligns with future Building
Performance Standard

Likely requires Energy Managers and Energy
Management Plans
Increase transparency for utility funding

School District Example



Comprehensive Site Plan

EPM Name	Jane Smith
EPM Title	Facilities Manager
Site Name	Rural School District

EPM Commencement Date	4/1/2023
Energy Cost (\$/kWh)	\$0.070
Baseline Usage (kWh/yr)	5,000,000

Date updated	7/1/2023
BEETS App ID	VYPMCR1550500959

Rural School District Energy Project Manager Comprehensive Plan

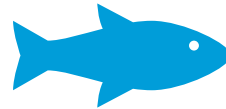
Project Planning and Tracking								Project Completion Information			
Project Description	Project Type	Project Status	Est. Project Cost (\$)	Est. Savings (kWh/yr)	Est. Completion Date	Brief Description of Savings Approach	Notes	Completion Date	Verified Site Savings (kWh/yr)	Verified Busbar Savings (kWh/yr)	BEETS Application ID
Middle School Lighting Project and Controls	Lighting	Completed	\$100,000	100,000	Jan 23'-Nov 23'	Lighting Calculator	Middle School	5/1/2023	100,000	109,056	XYZ123
High School Lighting Project and Controls	Lighting	Developing	\$180,000	200,000	Jan 23'-Nov 23'	Lighting Calculator	High School				
Building Controls	Custom	Equipment Order	\$75,000	150,000	Feb 23'-Oct 23'	Project Assessment Report	High School				
HVAC Unit Upgrade	UES	Completed	\$50,000	80,000	Jan 23'-Nov 23'	Prescriptive	Middle School	9/1/2023	80,000	87,245	ABC789
District wide SEM	SEM	Developing	\$5,000	75,000	Jun 23'-Aug 23'	Used cohort average of 2.5%	All District Buildings				
Total			\$410,000	605,000					180,000	196,301	

Digging Deeper with SEM



Strategic Energy Management measure

Focus on low-cost operational improvements
No cost documentation required
\$0.08/kWh for annual/incremental savings



Teaching your customers to fish

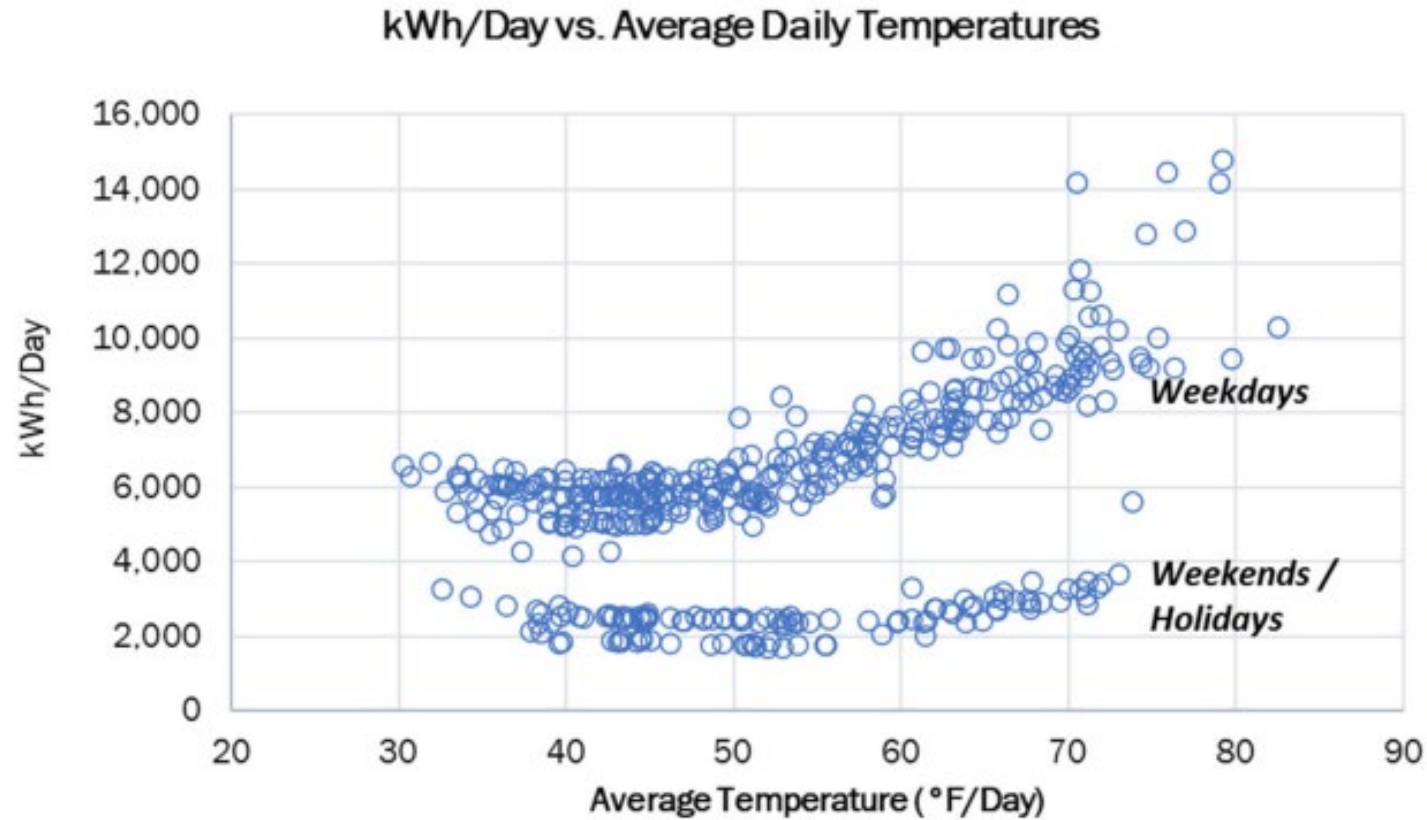
Minimum 2-year engagement
Normalized energy consumption model
Performance Tracking System- up to \$15k for installation



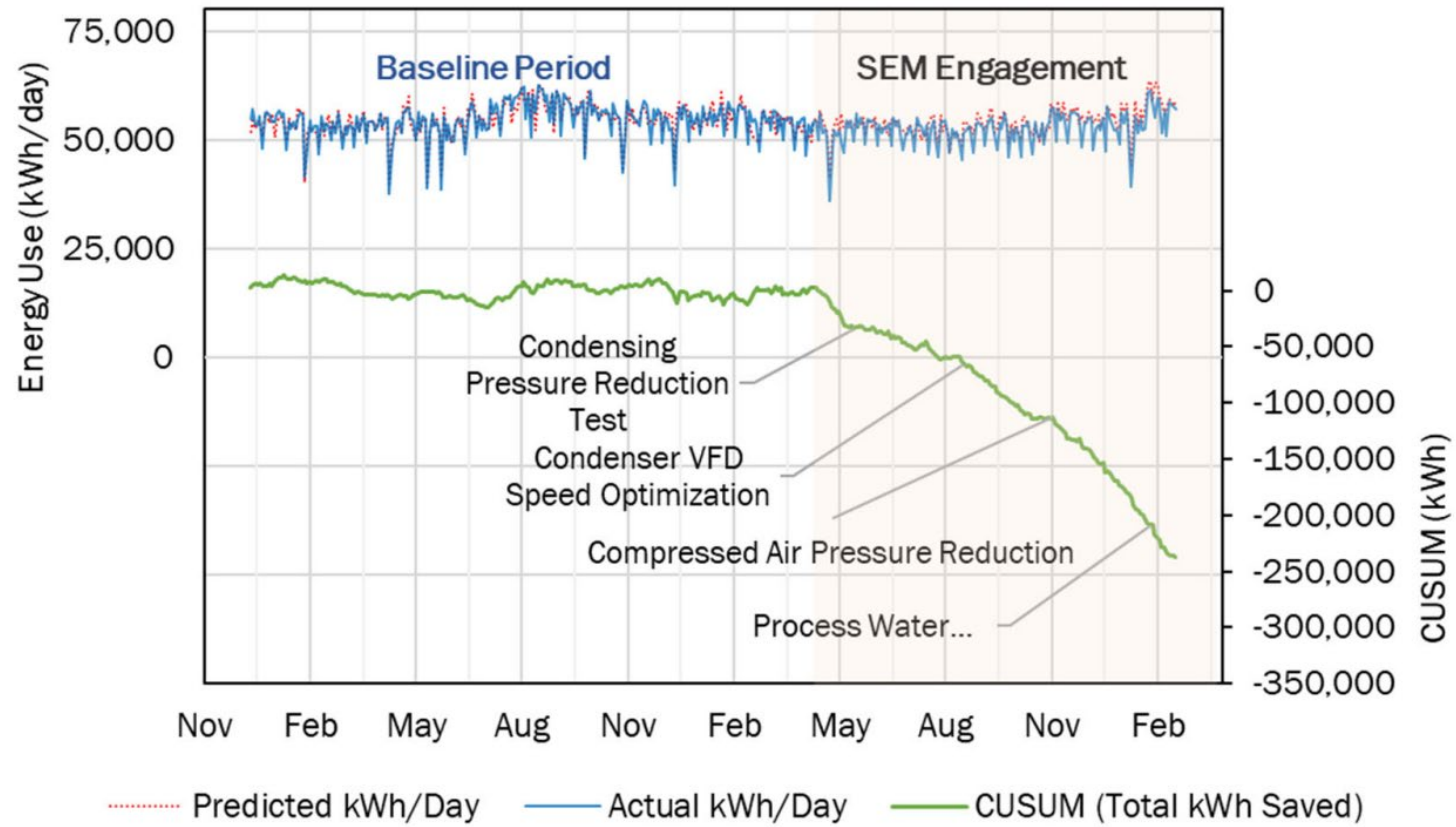
Worth the investment?

Carrot vs Building Performance Standards Stick
Increased utilization of other measures
Significant value add for some customers

Building a Baseline Model



Tracking Savings





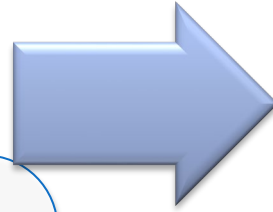
HVAC Reimagined



Updated HVAC UES Portfolio

2021-22

- Advanced Rooftop Unit Controls
- VFD on Fans
- Connected T-stat
- Air-Source Heat Pump
- Ductless Heat Pump
- Variable Refrigerant Flow
- Packaged Terminal Heat Pump



2023-24

- Advanced Rooftop Unit Controls
- VFD on Fans
- Connected T-stat
- Air-Source Heat Pump
- Ductless Heat Pump
- Variable Refrigerant Flow
- Packaged Terminal Heat Pump
- Heat Recovery Ventilation
- Efficient Pumps
- VFD on Pumps
- Demand Control Kitchen Ventilation

Air Source Heat Pumps

		Replacement Equipment				
		Any Air-Source Heat Pump	Equipment size			
			Efficient Split System >65,000 BTU/H	Efficient Single Package >65,000 BTU/H	≥65,000 and <135,000 BTU/H	≥135,000 and ≥240,000 BTU/H
Existing Equipment	Electric Resistance Heat	AHRI Certificate \$700/ton¹	AHRI Certificate 8.1 HSPF2 or 9.5 HSPF \$850/ton³	AHRI Certificate 7.0 HSPF2 or 8.2 HSPF \$850/ton³	AHRI Certificate 3.5 COP \$850/ton³	AHRI Certificate 3.4 COP \$850/ton³
	Non-Electric Resistance Heat	x	AHRI Certificate 8.1 HSPF2 or 9.5 HSPF \$150/ton²	AHRI Certificate 7.0 HSPF2 or 8.2 HSPF \$150/ton²	AHRI Certificate 3.5 COP \$150/ton²	AHRI Certificate 3.4 COP \$150/ton²

1 Retrofit measure

2 Upgrade measure

3 Combined reimbursement for retrofit and upgrade measures

Ductless Heat Pumps

		Replacement Equipment		
Existing Equipment		Any DHP	Non-Ducted DHP	Ducted or Mixed
Electric Resistance Heat	AHRI Certificate \$1,000/ton¹	AHRI Certificate ≥ 10.4 HSPF2 or ≥ 11.0 HSPF \$1,300/ton³	AHRI Certificate ≥ 9.4 HSPF2 or ≥ 10.0 HSPF \$1,300/ton³	
Non-Electric Resistance Heat		AHRI Certificate ≥ 10.4 HSPF2 or ≥ 11.0 HSPF \$300/ton²	AHRI Certificate ≥ 9.4 HSPF2 or ≥ 10.0 HSPF \$300/ton²	

1 Retrofit measure

2 Upgrade measure

3 Combined reimbursement for retrofit and upgrade measures

UES Measures for Common Systems

Packaged RTUs

ARC

T-Stat

ASHP

Dedicated Outdoor Air Systems (DOAS)

DHP

VRF

HRV

Built-up AHU with Chilled Water Loop

Efficient Pumps

VFDs on Pumps

VFD on Fans



Thank you!

