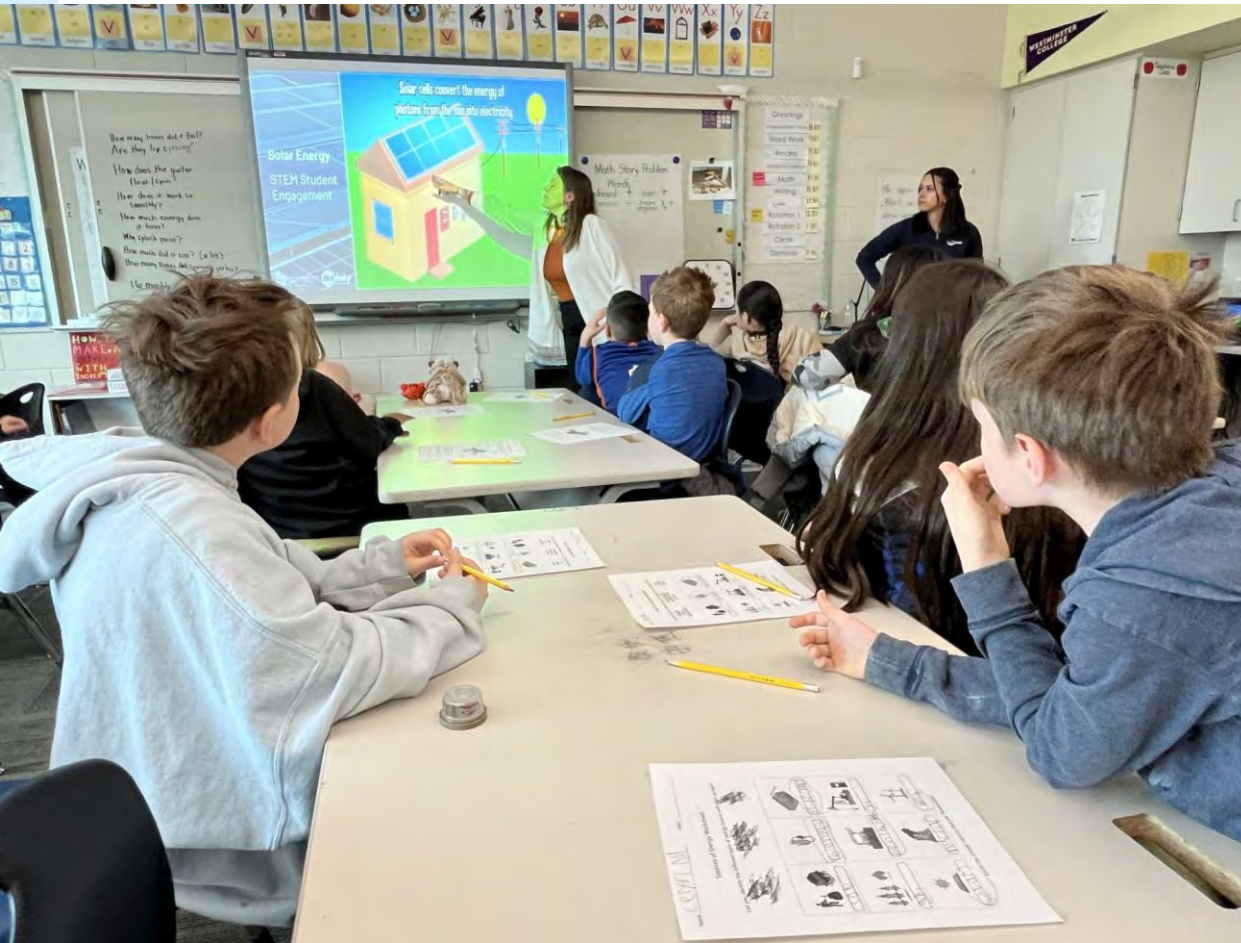
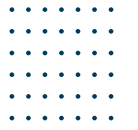


Schools and Decarbonization: A Great Match



- Future-focus values alignment
- Meets District sustainability/climate goals
- Often large, flat roofs
- Substantial electrical use offset by solar
- Reduces annual operating costs
- Reduces impact of electricity escalation
- Teaching opportunity
- Supports teacher retention

K12 DECARBONIZATION – THE BIG PICTURE

ELECTRIFICATION RENEWABLY POWERABLE

- Facilities
- Vehicles

RENEWABLE ELECTRICITY

- District-owned and -located
- Renewable premium from utilities

EFFICIENCY

- Many items, large impact
- Lower demand = smaller systems

REUSE EXISTING FACILITIES

- Reduces impacts of new construction
- climate and environment

DECARBONIZATION METHODOLOGY

- Logical, not lavish, approach to achieve goal

Install solar when replacing roofs

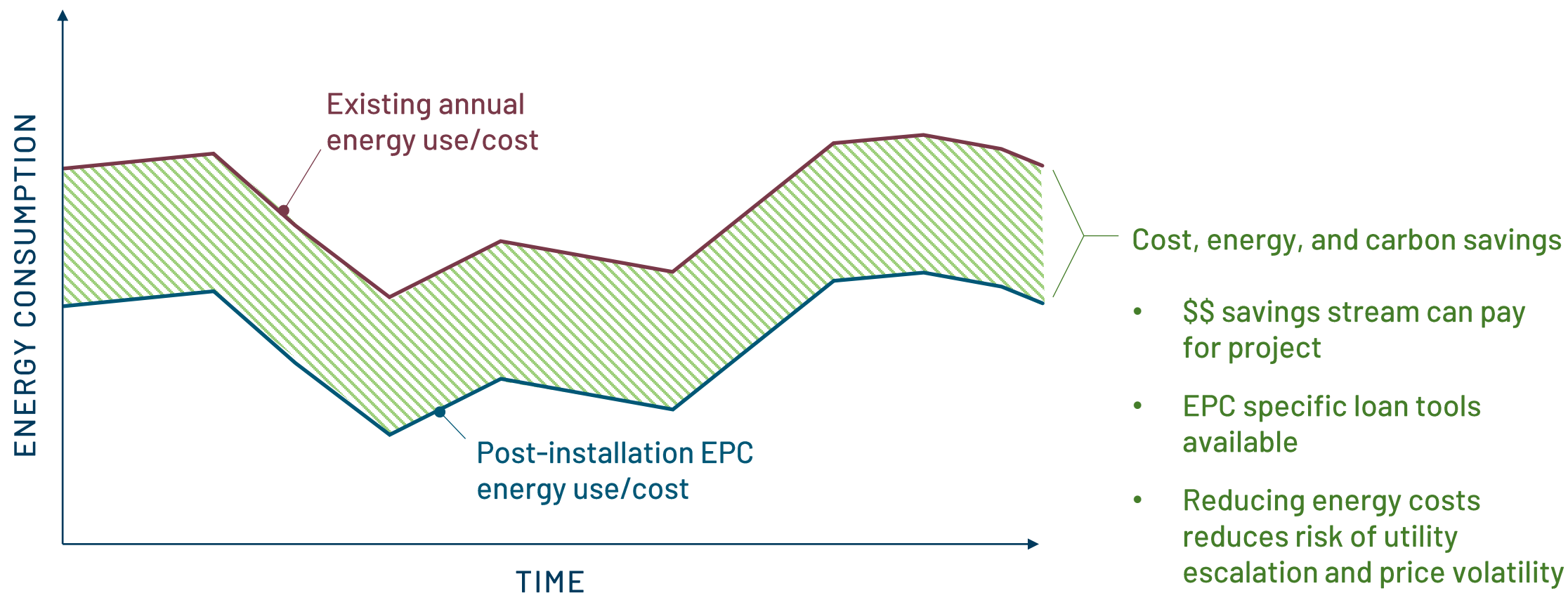
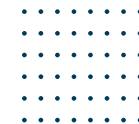
Electrify when worn out fossil fuel equipment & vehicles need replacing

Seek high efficiency electric alternatives

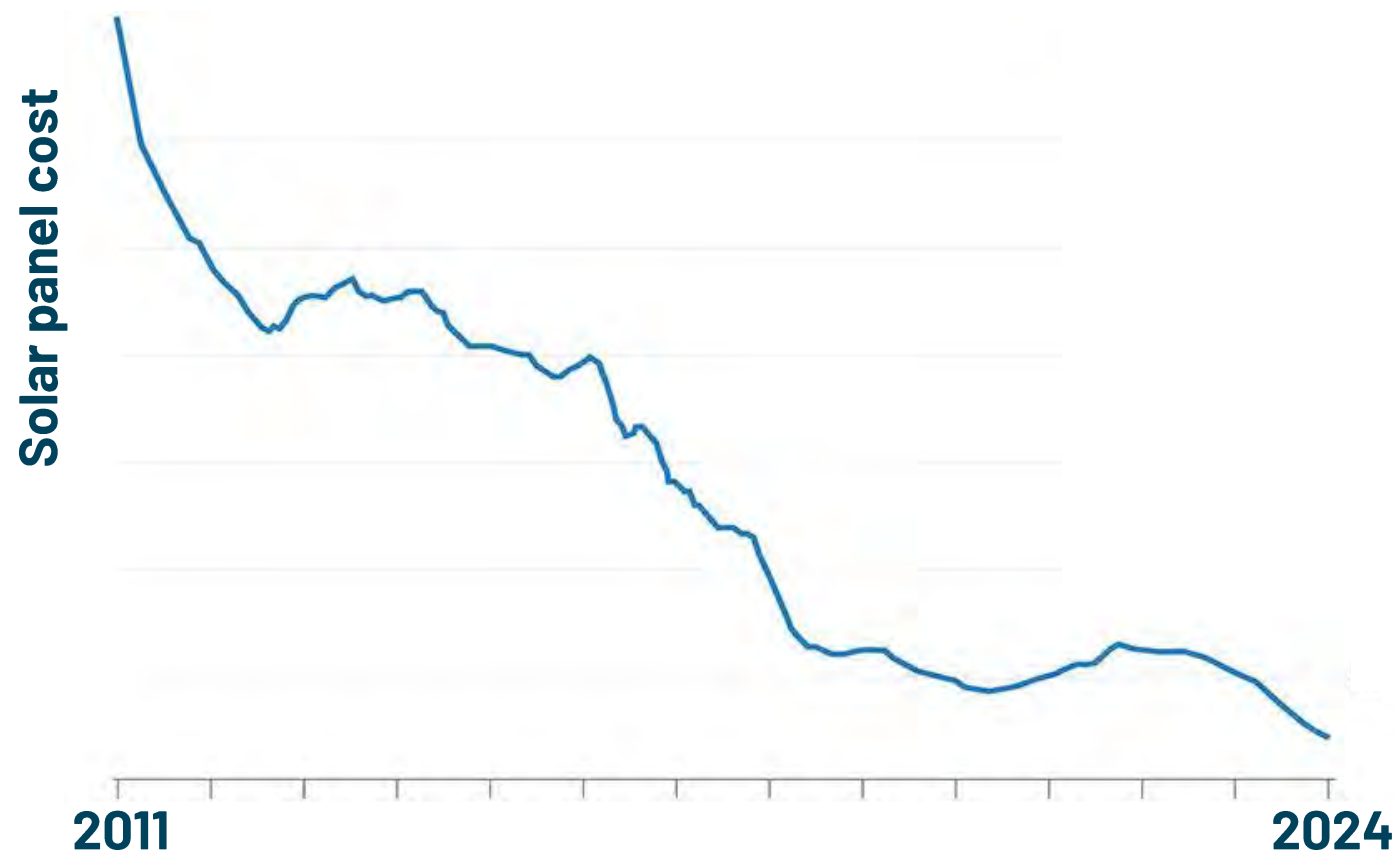
Reduce demand through efficiency

- Use proven technologies – “state of the shelf”

Creating a Savings Stream – A Core EPC Element

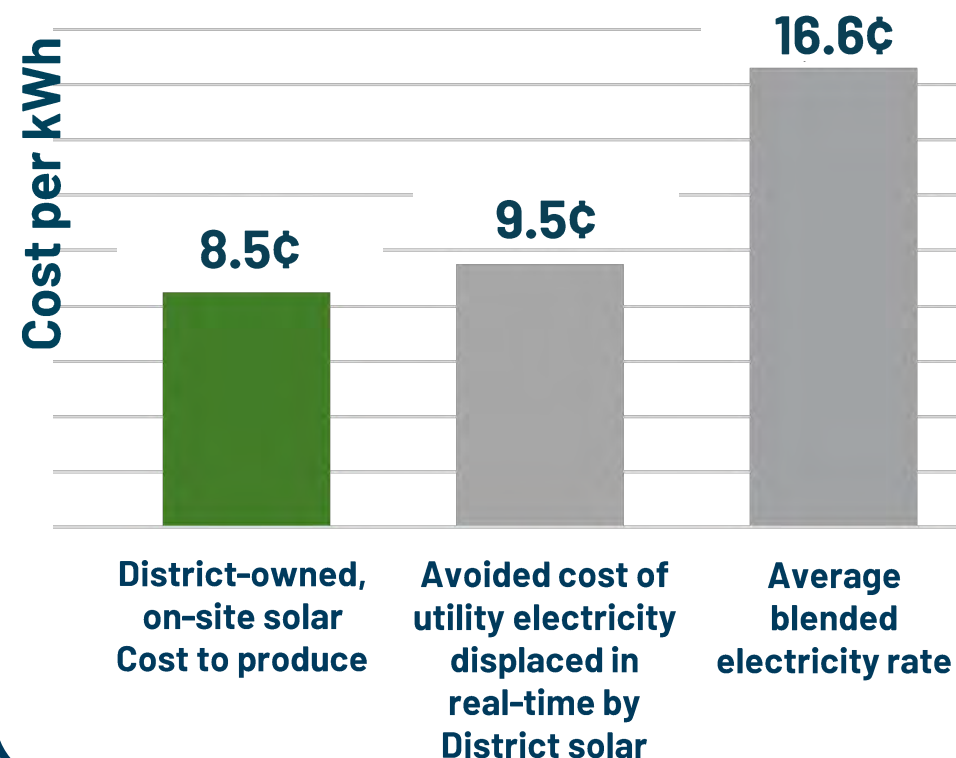


Solar Is Now a Great Value



WI school district case study (McKinstry client)

It is cheaper for them to produce their own electricity than buy it from utility



Salt Lake City SD – Journey to Zero Carbon



- Urban district, City pop. 200k
- 40 schools – 4.2 million sq/ft
- 21,000 students
- \$350m annual budget
- Fully cooled
- Newer schools
- Well maintained

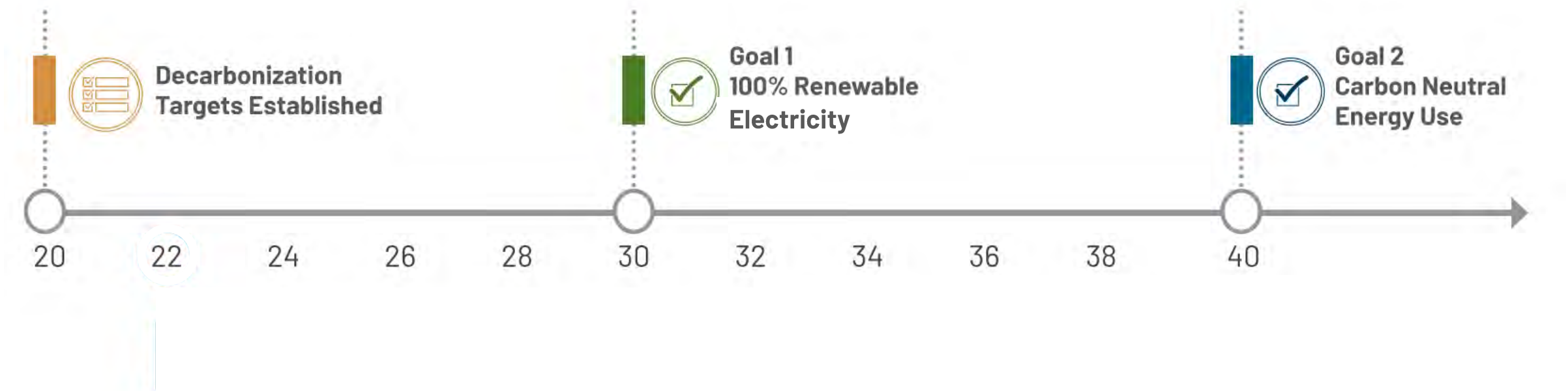
Salt Lake City SD - Journey to Zero Carbon



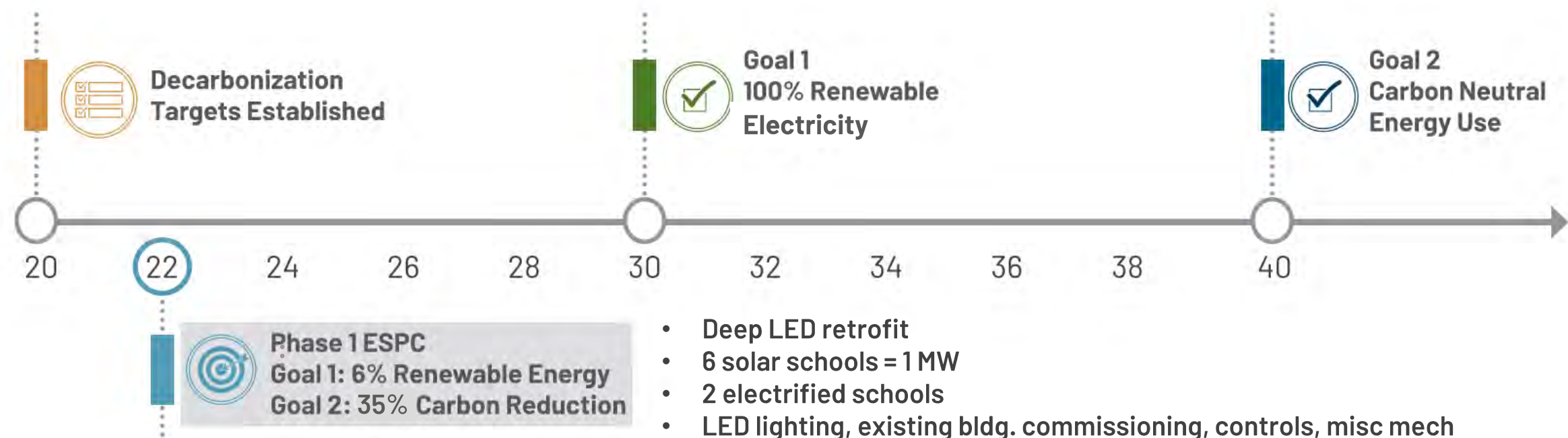
1. To use 100 percent clean, renewable energy in SLCSD's electricity sector by 2030.
2. To meet 100% of all District operations energy needs with carbon neutral energy by 2040.

June 2, 2020 Unanimous Board Approval

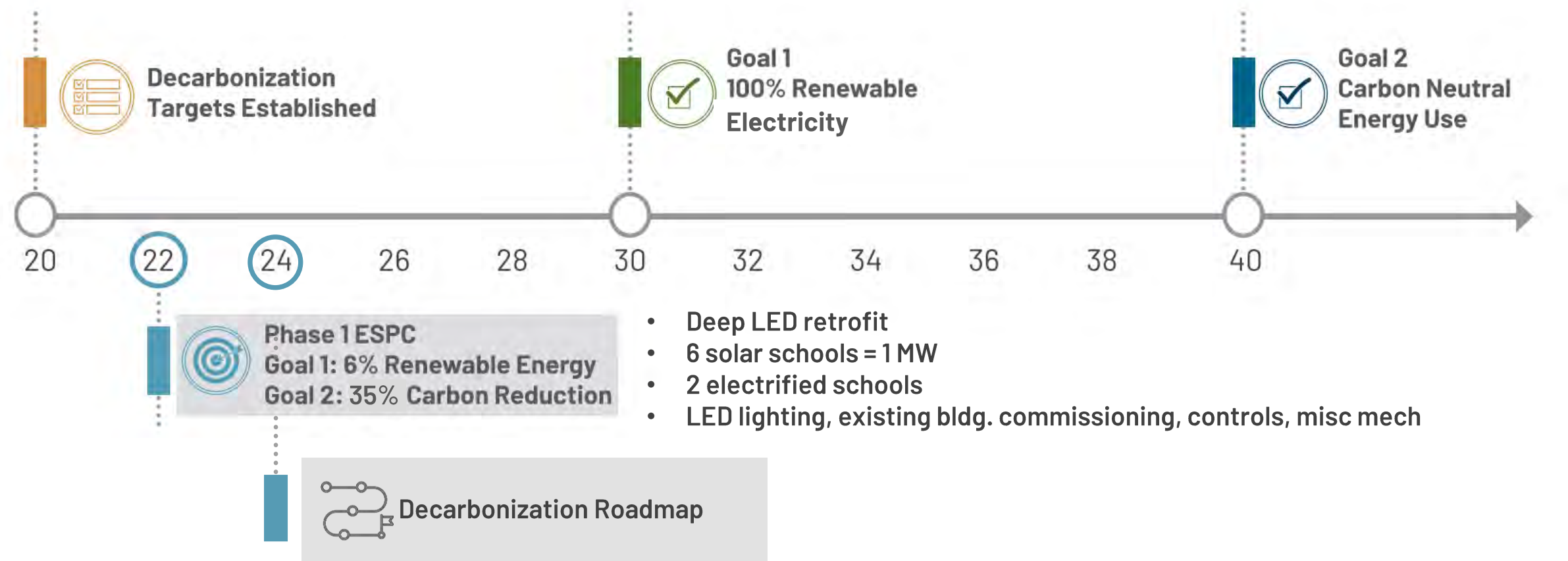
Salt Lake City SD - Journey to Zero Carbon



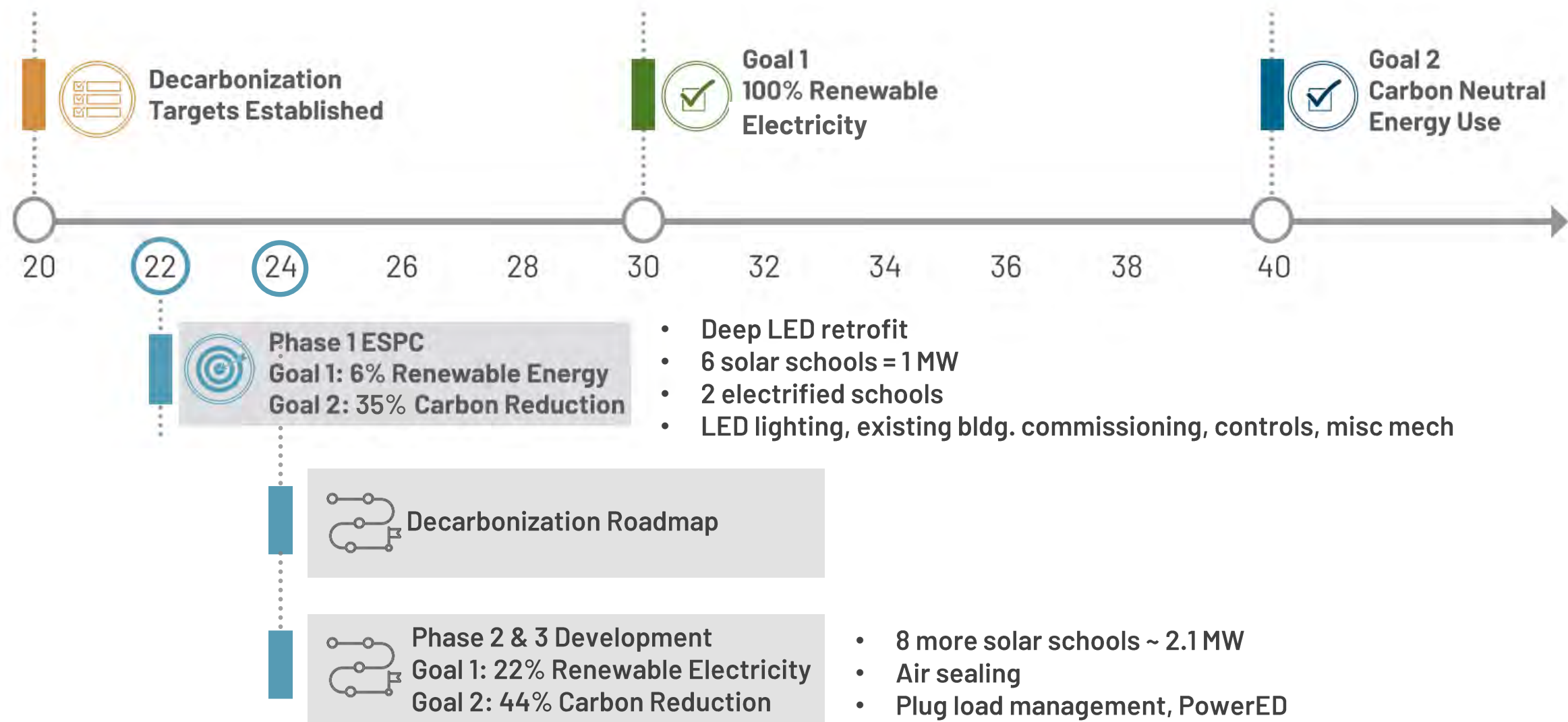
Salt Lake City SD - Journey to Zero Carbon



Salt Lake City SD - Journey to Zero Carbon

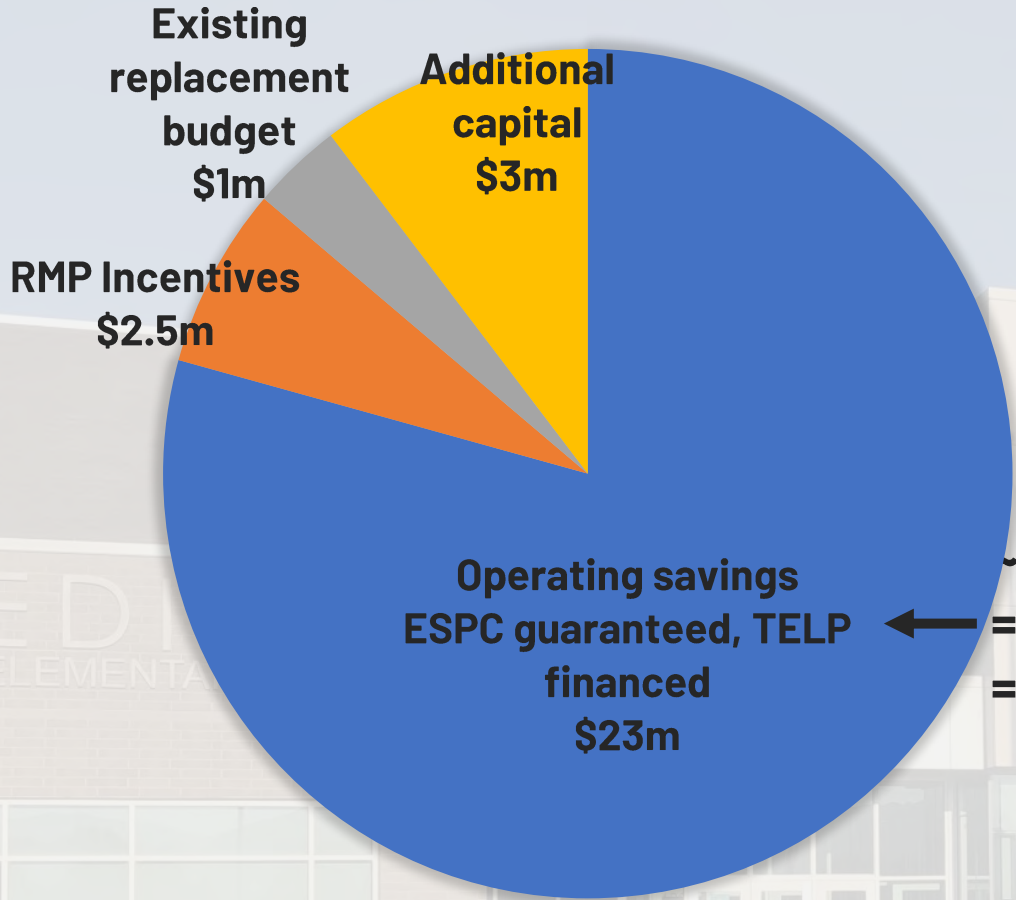


Salt Lake City SD - Journey to Zero Carbon



Salt Lake City School District Decarbonization Path

Phase One **FUNDING SOURCES = \$29.5 million**



~ \$1.2M guaranteed annual operating savings
= ~\$1.2M annual TELP payment
= Decarbonization that pays for itself

March 6, 2025

MIDDLETON CROSS PLAINS AREA SCHOOL DISTRICT

From School Board Resolution to Implementation: A Wisconsin District's Climate Action Journey



MCPASD SUSTAINABILITY RESOLUTION

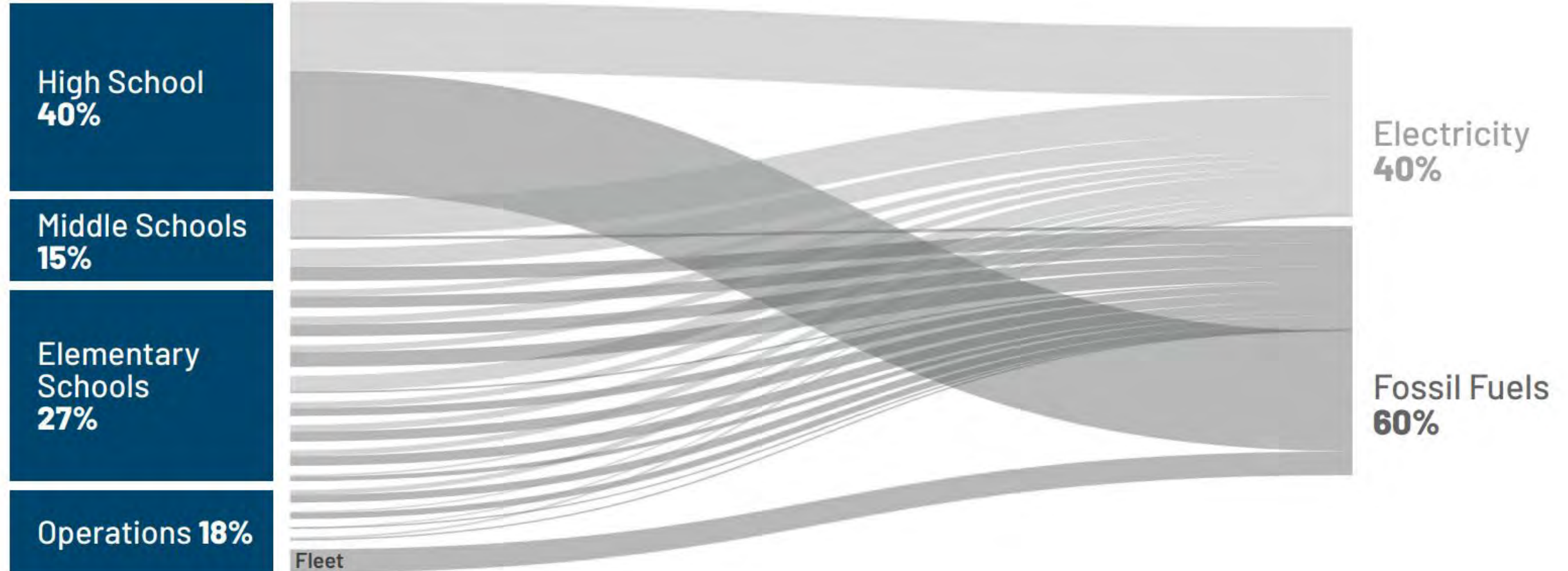
2035: “MCPASD will establish goals to meet 100% of all district operations energy needs with renewable energy by 2035”

Adopted by MCPASD School Board March 22, 2021



Annual energy use

The Details



MCPASD 100% RENEWABLE GOAL - PHASING

FACILITY	EFFICIENCY/LOAD REDUCTION	BUILDING ELECTRIFICATION	FLEET ELECTRIFICATION	ON-SITE RENEWABLES	EFFICIENCY/LOAD REDUCTION	BUILDING ELECTRIFICATION	FLEET ELECTRIFICATION	ON-SITE RENEWABLES	EFFICIENCY/LOAD REDUCTION	BUILDING ELECTRIFICATION	FLEET ELECTRIFICATION	ON-SITE RENEWABLES	EFFICIENCY/LOAD REDUCTION	BUILDING ELECTRIFICATION	ON-SITE RENEWABLES	EFFICIENCY/LOAD REDUCTION	BUILDING ELECTRIFICATION	ON-SITE RENEWABLES	OFF-SITE RENEWABLES
	PHASE 1 (2025)				PHASE 2 (2027)				PHASE 3 (2029)				PHASE 4 (2031)			PHASE 5 (2033)			
Kromrey Middle School	X							X									X		X
Glacier Creek Middle School	X			X								X		X					X
Elm Lawn ES	X			X													X		X
Northside ES	X							X		X									X
Park ES	X							X		X		X							X
Pope Farm ES	X			X													X		X
Sauk Trail ES	X	X		X															X
Sunset Ridge ES	X							X						X					X
West Middleton ES	X					X		X							X				X
4K/Early Learning Center	X					X									X				X
District Services Center	X									X									X
District Operations Center	X		X							X	X				X				X
Transportation Office			X				X			X	X								X
Middleton High School	X			X		X						X					X		X

ELIMINATING ONSITE FOSSIL FUELS - ELECTRIFICATION

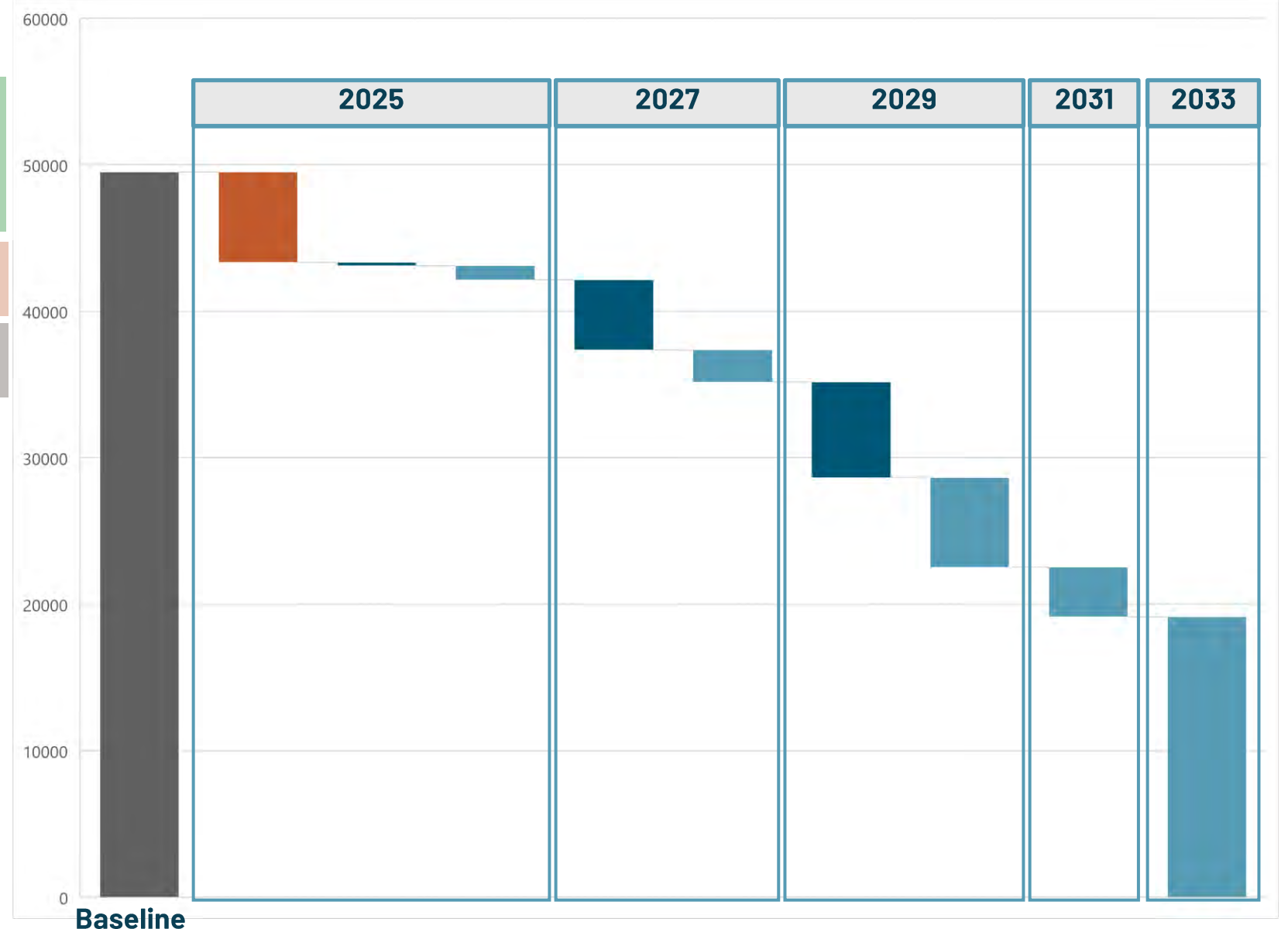
ELECTRIFICATION

RENEWABLES

EFFICIENCY

REUSE EXISTING FACILITIES

Efficiency 
Fleet Elect. 
Building Elect. 



PATH TO RENEWABLE ELECTRICITY

ELECTRIFICATION

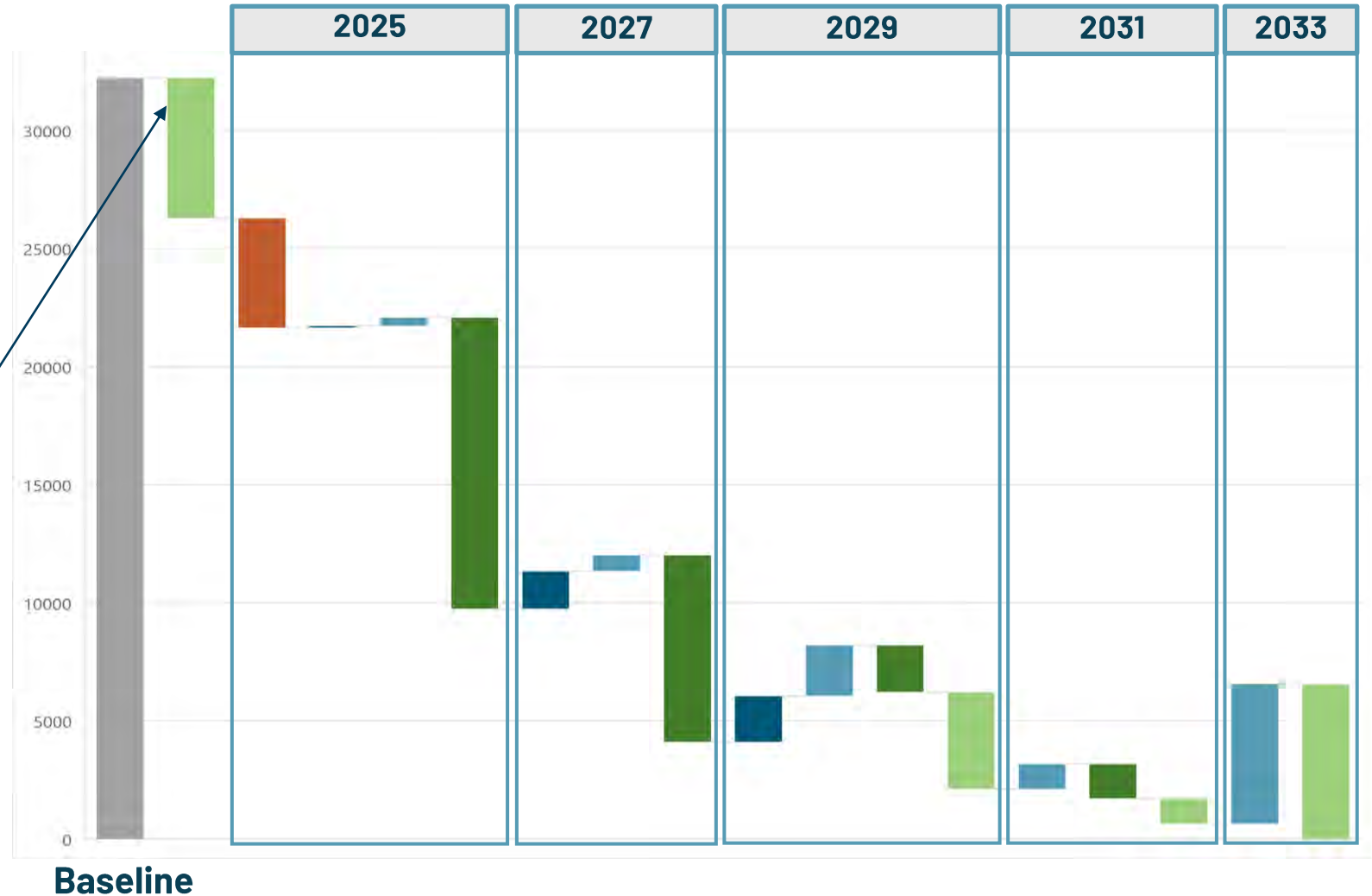
RENEWABLES

EFFICIENCY

REUSE EXISTING FACILITIES

Existing MG&E Renewable
Energy Rider

Efficiency
Fleet Elect.
Building Elect.
On-site Solar
Off-site Solar



PHASE 1 SCOPE - EFFICIENCY

ELECTRIFICATION

RENEWABLES

EFFICIENCY

REUSE EXISTING FACILITIES



Variable Flow Upgrades



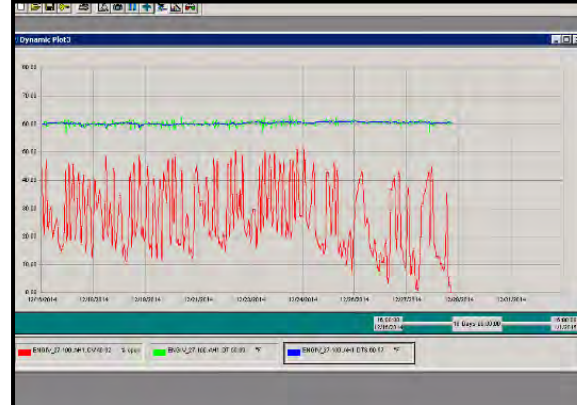
Kitchen Hood Controls



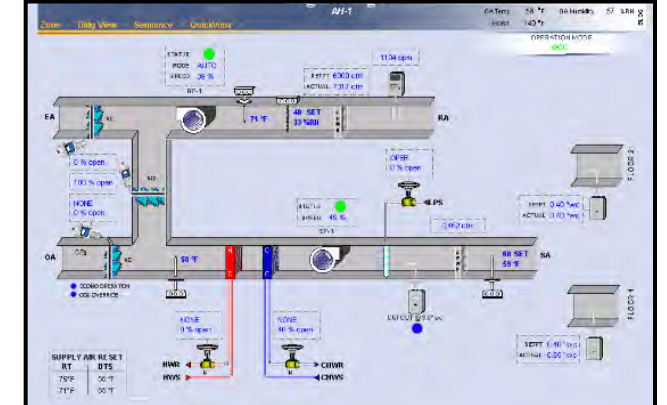
Pool Upgrades



Envelope/Duct Sealing



Retro-commissioning



PowerED

PHASE 1 SCOPE – **SOLAR PV**

ELECTRIFICATION

RENEWABLES

EFFICIENCY

REUSE EXISTING FACILITIES

Middleton High School – 1,252kW_{dc}



Glacier Creek MS– 628kW_{dc}



Pope Farm Elementary– 412kW_{dc}



Elm Lawn Elementary– 262kW_{dc}

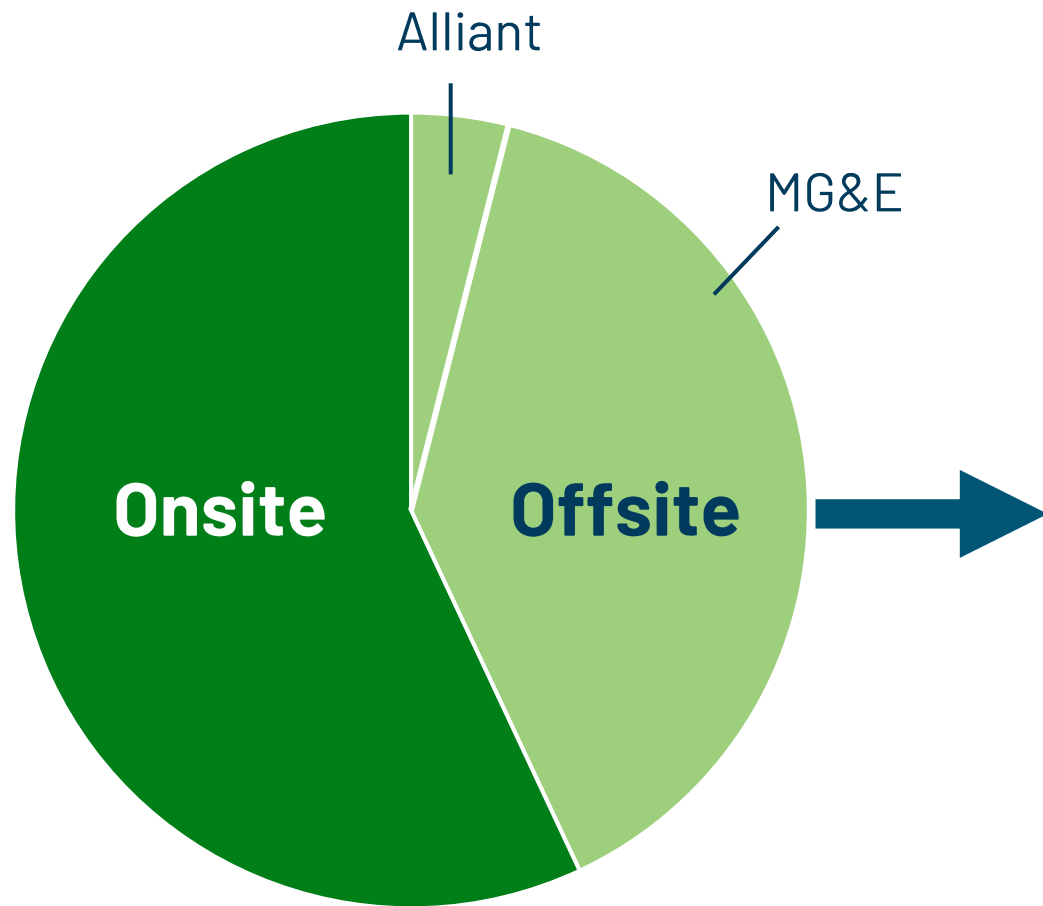


Sauk Trail ES– 286kW_{dc}



25.5-30% Federal Incentive: **\$2m**

2035 100% RENEWABLE SOURCES



NET DECARBONIZATION FINANCIALS

PHASE 1

Total Implementation Cost	(\$10.1m)
Lifetime Project Operating Savings	\$10.7m
Avoided Equipment Replacement Costs	\$.2m
Total Incentives (IRA, Federal Grants, & Utility Rebates)	\$3.1m
Total Net Benefit of Project	\$3.9m