

Yolo County Facilities Fossil Fuel Removal Inventory & Feasibility Study

October 21, 2025

Kristen Wraithwall
Sustainability Manager
County Administrator's Office



Project Objectives

Background

- Early Action project under the Climate Action & Adaptation Plan (CAAP).
- Funded by Board of Supervisors via \$300K ARP Allocation.
- Entered into contract with AECOM to complete study.

Project Objectives

- Develop a comprehensive inventory of fossil fuel-powered equipment across County facilities.
 - **Assessed 28 County facilities** for fossil fuel (*incl. natural gas*) equipment.
 - **Documented 397 gas-fueled units** (*HVAC, water heating, laundry, kitchen*)
- Assess replacement feasibility (technical, financial, operational) and GHG reduction potential.
- Develop implementation pathways and prioritization framework.
- Focused on fuel substitutes (gas → electric), not retrofits for efficiency.



2023 Baseline Snapshot

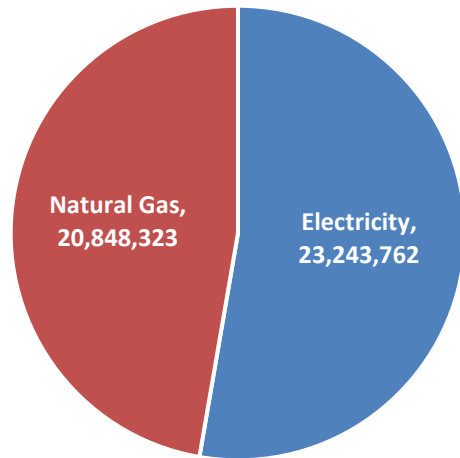
2023 Energy Consumption (kbtu)	
Natural Gas	20,848,323
Electricity	23,243,762
Offset by Solar ²	3,129,766
Total	47,221,851

2023 Solar Generation (kWh)	
Bauers	193,790
YECA	31,474
DESS	396,119
Grassland - ERWF ³	72,622
Grassland - RESBCT ³	1,698,108
Justice Center	287,899
Knights Landing Library ⁴	8,000 ⁴
Total	2,688,012



Solar farm at Justice Center

2023 Utility Consumption (kBtu)¹



Notes:
¹Utility consumption excludes energy consumption from solar photovoltaic (PV) systems
²Energy generated by solar and directly consumed by a Yolo County building. Includes solar arrays at Bauer, TECA, DESS, and Justice Center
³Energy generated by solar is sold back and not directly consumed by Yolo County buildings
⁴Estimated based on solar inverter

Cost-Benefit Analysis

It was estimated that it would cost the County approximately **\$12.8 million to completely replace all fossil fuel equipment**, including the necessary electrical upgrades.

To develop **prioritization list**, projects were ranked against six **(6) key evaluation criteria**:

1. Remaining Useful Life (RUL) of equipment.
2. Electrical capacity/upgrade needs.
3. Facility priority (critical operations, safety).
4. Upcoming remodel schedule.
5. Refrigerant type (phase-out needs, high vs. low GWP).
6. GHG Reduction potential.

Implementation Scenarios

Scenario		Description (Summary)
1	End of Reasonable Useful Life (RUL) Implementation	Electrification projects implemented when the existing systems reach the end of their useful life.
2	Meet Net-Zero by 2030 Goal	Electrification projects are implemented based on the prioritization matrix, starting in 2026, with all projects completed by 2030.
3	Budgeted Investment (\$375K/yr)	Electrification projects are implemented based on the prioritization matrix, but capital expenditure is assumed to be only up to \$375,000 per year.



Scenario 1: End of Life Implementation

GHG Emissions Reduction

467

MTCO₂

48%

% reduction

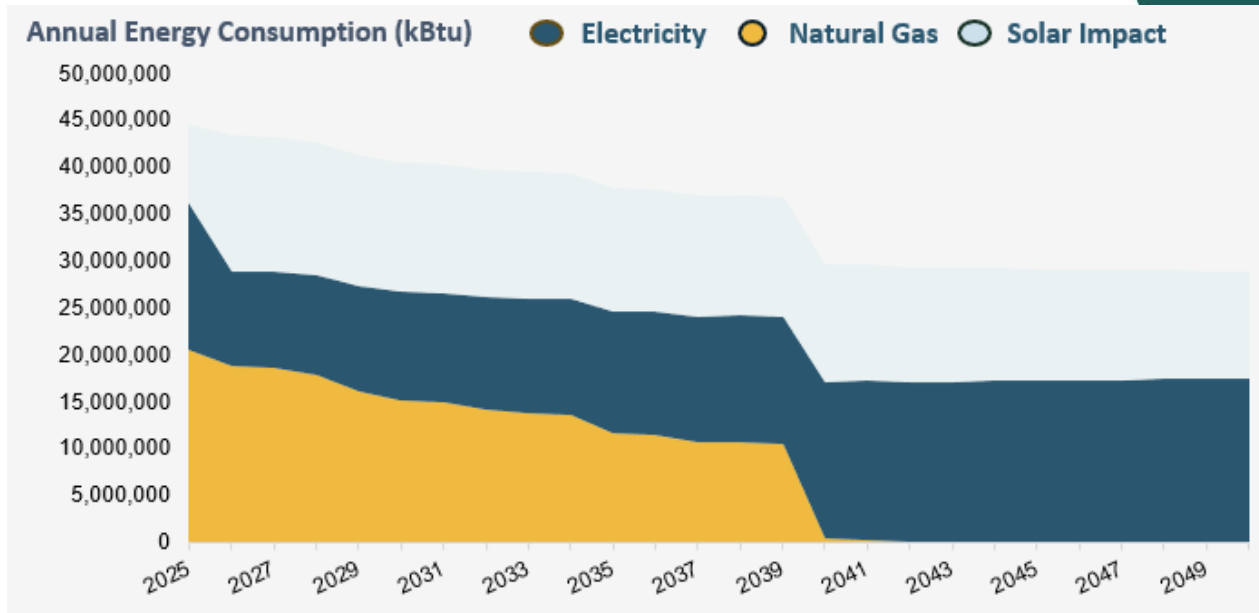
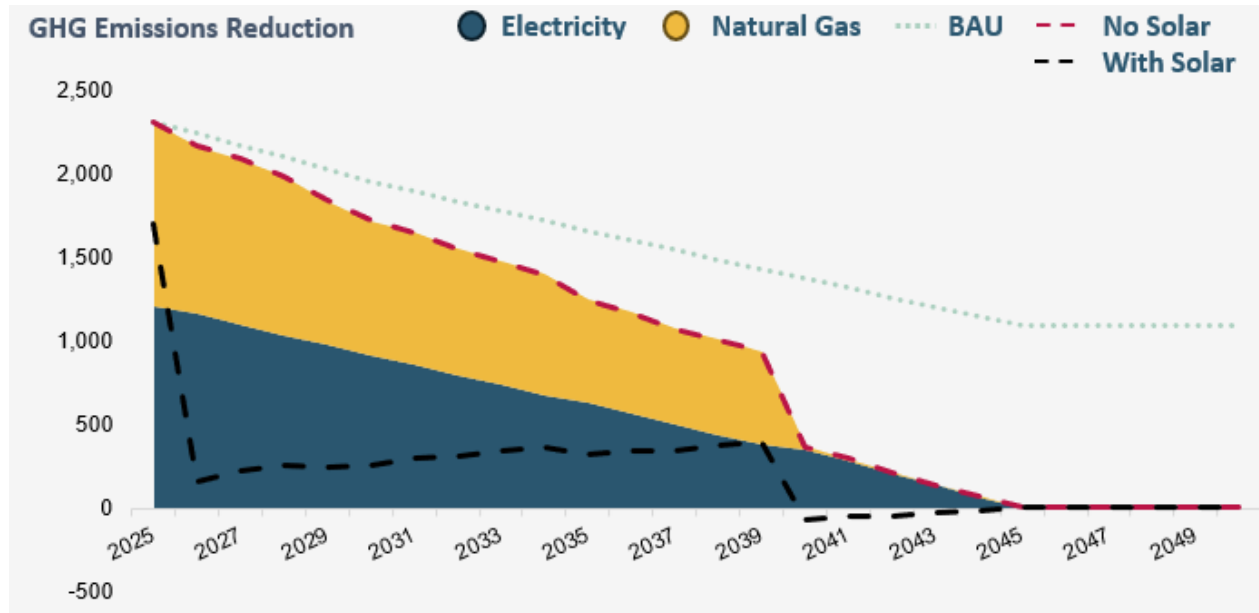
Energy Consumption Impact

26.7

Million kBtu

13%

% reduction



- Electrification projects are implemented when the existing systems reach the end of their reasonable useful life (RUL).
- **County unable to meet net negative carbon goal;** majority of natural gas equipment across remains online past 2030 based on RUL.



Scenario 2: Meet Net-Zero Carbon Emission Goal

GHG Emissions Reduction

1,696 | **175%**
MTCO₂ | % reduction

Energy Consumption Impact

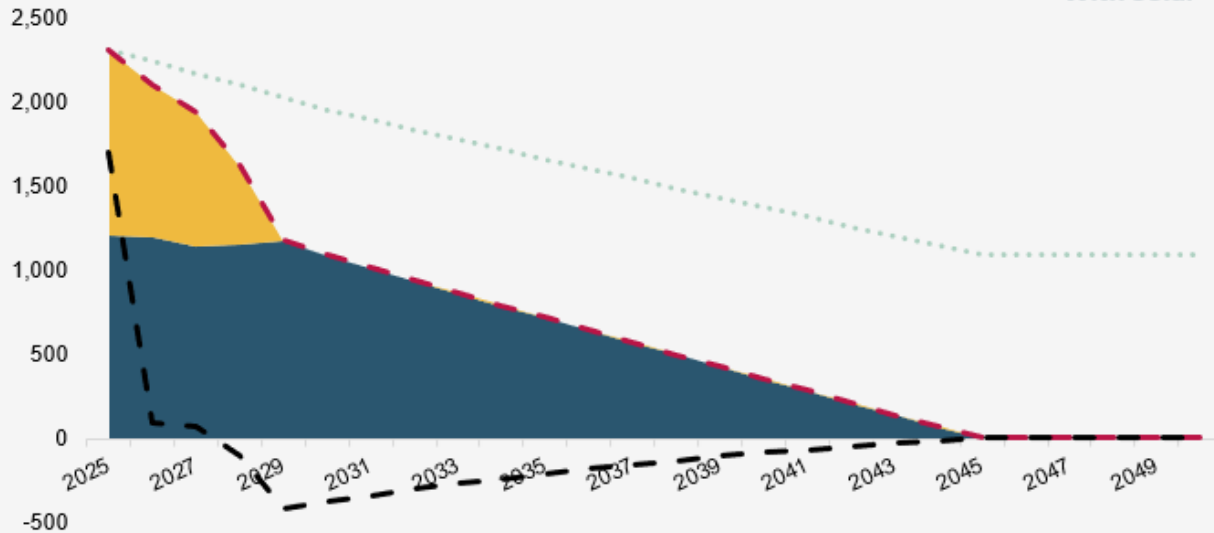
16.3 | **47%**
Million kBtu | % reduction

Energy Mix in 2030

100% | **0%**
% electricity | % natural gas

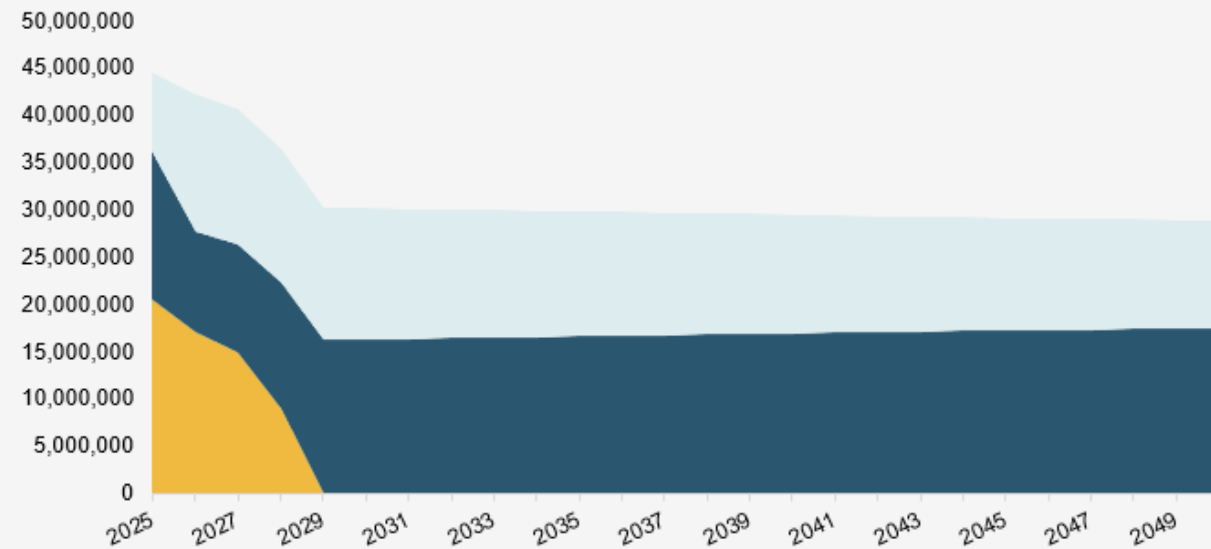
GHG Emissions Reduction

● Electricity ● Natural Gas ● BAU
- - No Solar - - With Solar



Annual Energy Consumption (kBtu)

● Electricity ● Natural Gas ● Solar Impact



- Electrification projects are implemented by 2030 based on the prioritization matrix, starting in 2026.
- **Natural gas use eliminated by 2030** but electricity does not increase significantly due to higher equipment energy efficiencies.



Scenario 3: Budgeted Investment

GHG Emissions Reduction

395

MTCO₂

36%

% reduction

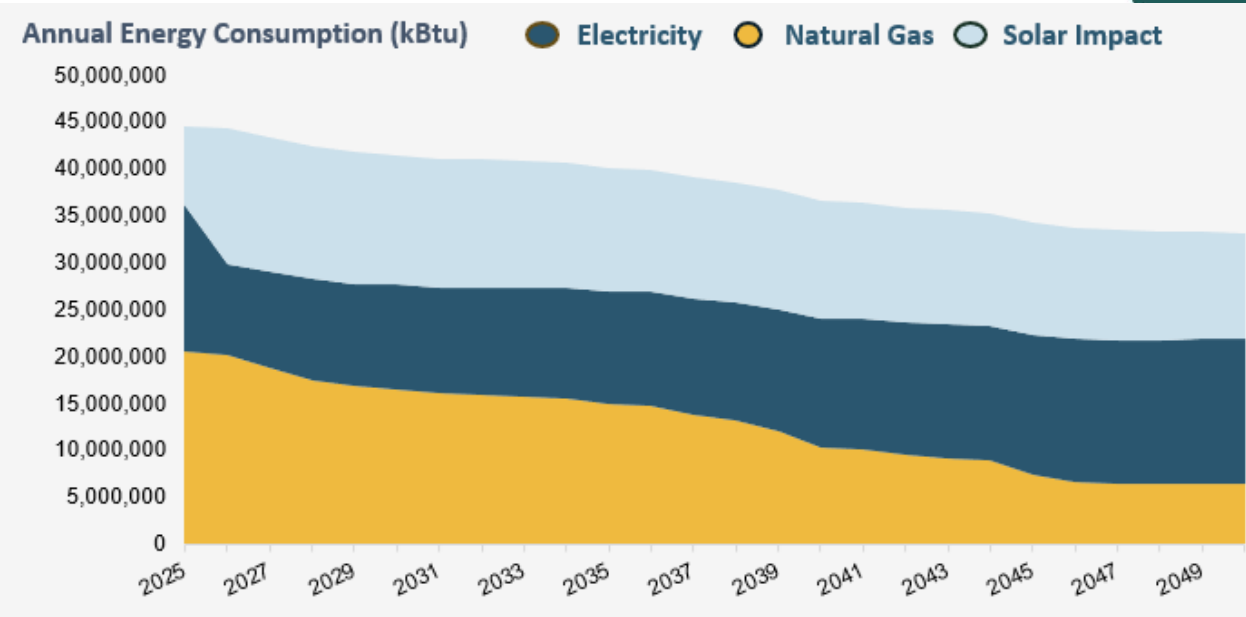
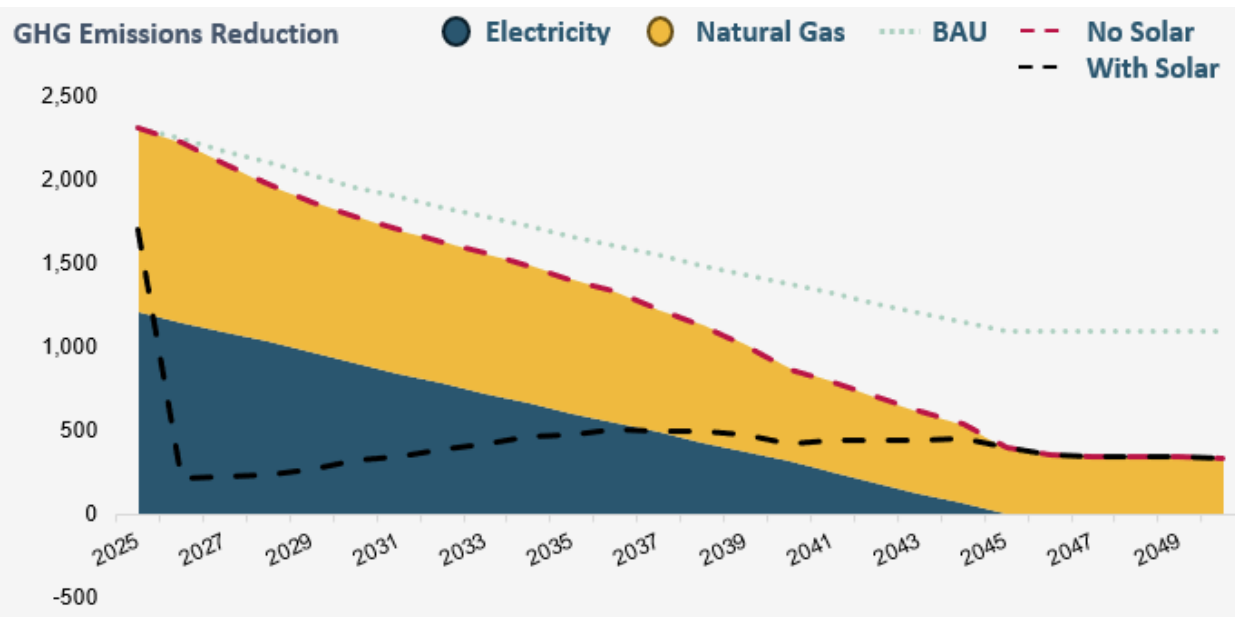
Energy Consumption Impact

27.7

Million kBtu

10%

% reduction



- Projects are implemented based on the prioritization matrix, starting in 2026 and based on an annual spend assumed to be \$375,000 per year.
- Number of projects implemented is lower than that of Scenario 1 due to capital expenditure limit.
- **County unable to meet net negative carbon goal** and fossil equipment operates past 2050.

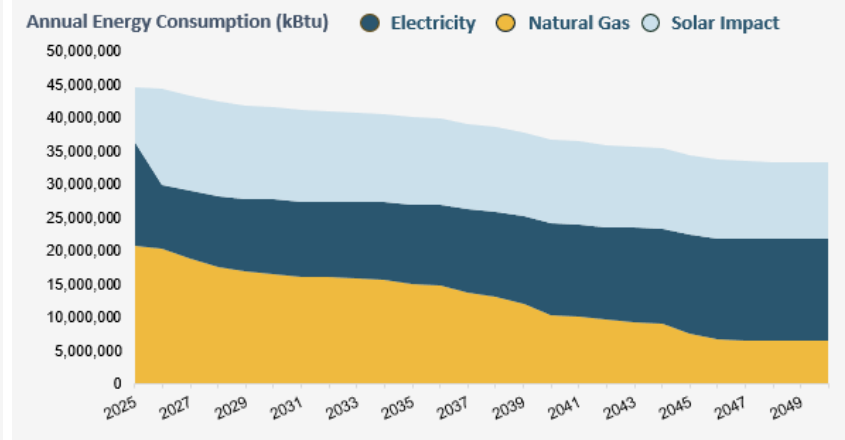
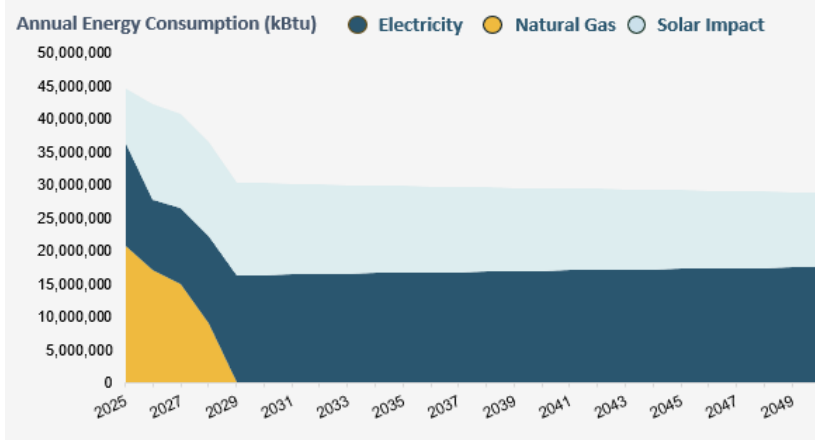
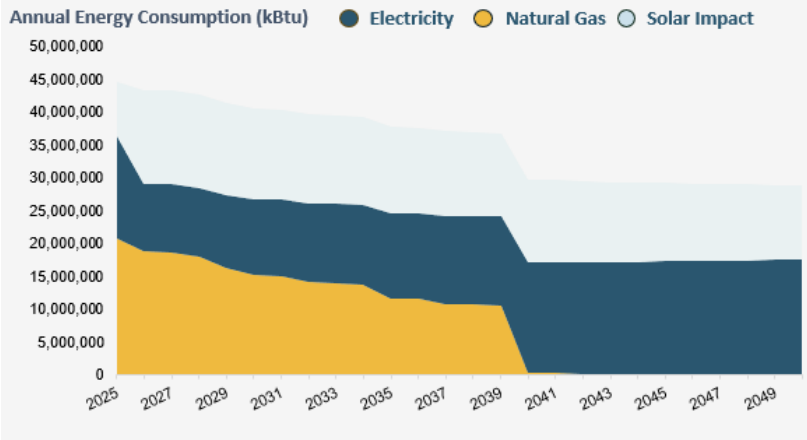
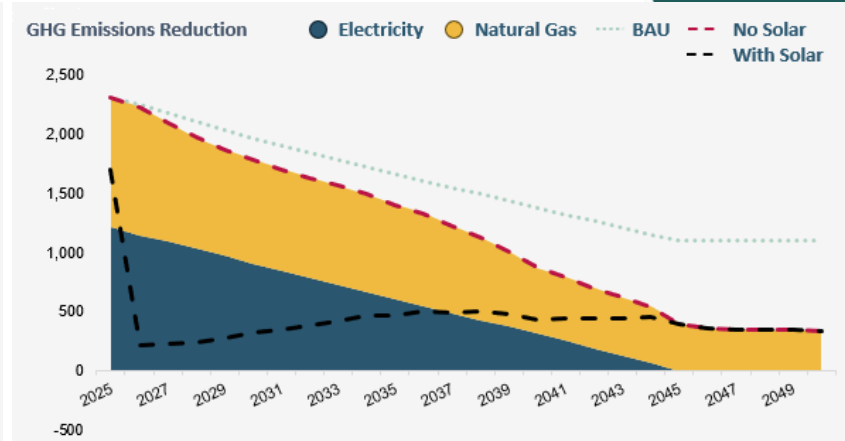
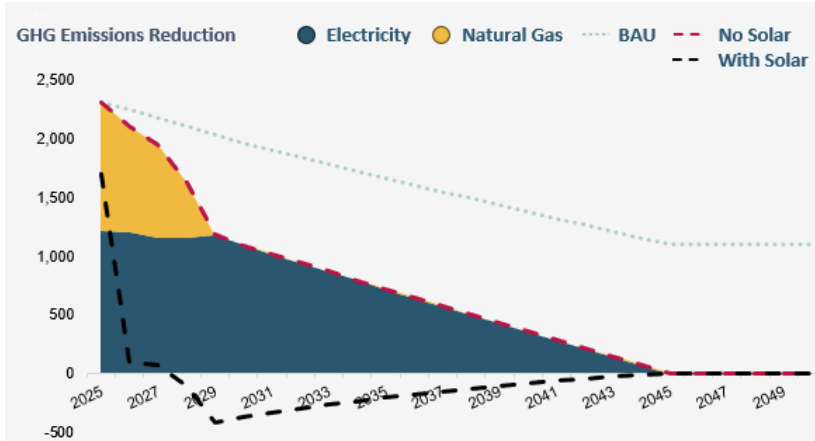
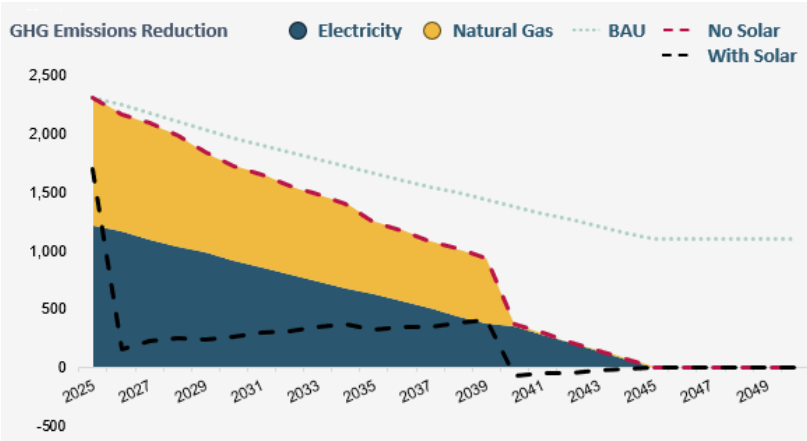


Scenario Comparison

Scenario 1: End of RUL

Scenario 2: By 2030

Scenario 3: \$375K/yr



Bottom Line

- Removing fossil fuels from County operations by 2030 **will be extremely difficult**.
 - Full electrification is very costly (**estimated at \$12.8 million dollars**).
- It is **unlikely that we will meet net-negative emissions by 2030 for our municipal operations**.
 - **NOTE: this is separate from the Community-wide goal of reaching net-negative emissions by 2030.**
 - *Progress on the overall Community-wide emission reduction goal will be reassessed in 2027.*

Good news is that forward progress is already being made! Already Implemented by GSD:

- New construction of the **Agriculture Department Corporation Yard to be all-electric** with two fleet electric vehicle chargers.
- Designed the new construction of the **Walnut Park Library to be all-electric** with additional energy efficiency and distributed generation technology elements.
- Received California Energy Commission grant to **implement demand response strategies** at County facilities.
- **Installed 13 public-facing electric vehicle charging** stations on County property.
- PG&E grant funding **Fleet Yard electric vehicle charging station** consisting of two fast chargers and seven level-2 chargers.



Next Steps

Near-term (2025-27):

- CAO and GSD staff will identify projects to integrate into CIP (*based on RUL + feasibility*).
- Energy Manager will be key in supporting distributed generation opportunities and improvements (*ie. new solar, updating existing arrays, improving aging solar trackers, etc.*).
- Staff to pursue grant/funding opportunities.

Mid-term (2027-30):

- Staff to scale fleet electrification (*target high-mileage vehicles first*).
- GSD staff will identify opportunities to bundle projects (*i.e., removing gas-powered hot water heaters*) with major remodels.

Ongoing:

- Staff will use FF Removal Dashboard for project tracking.
- Staff will work to integrate electrification into all future facility and fleet planning.

