



Solar PV & Resiliency Community Information Meeting

Presented by Dan Zaich, Zoe
Respondek, & David Williard

December 2022

Agenda

- Solar & Resiliency Project Background
- District and Community Benefits
- Project Details and Schedule
- Site Layout and PV Examples
- Q&A

Project Background

- SRCS is committed to reducing its environmental impacts with cost effective energy efficiency & renewable generation projects
- District completed first pilot PV projects at San Pedro Elementary and Glenwood Elementary
- District participated in PG&E's EV Charge program to install EV chargers with no infrastructure cost to SRCS
- In 2021, SRCS conducted an updated district-wide solar feasibility study and identified an additional 6 sites for solar PV

Community Benefits

- Provides locally generated, clean, renewable energy
- Provides shade as an amenity on campus
- Provides teaching example of solar energy to learn in class
- Generates ~\$8.6M in cost savings over 25 years
- Frees up General Fund \$\$ to be used in classrooms
 - Better Schools = Higher Property Values
- Statement of environmental stewardship for students & public

The Value of Resiliency

An Area of Priority for SRCS Bond Measures B & C:

- Value of Resiliency is priceless. Resiliency means keeping critical electrical circuits operational during a power outage, i.e., communications, refrigeration, lighting.
- Adding batteries and a microgrid to a solar system affects the economics of the project, i.e., the added costs are not as quickly recovered or offset.
- Batteries may also be discharged daily into the school during peak consumption periods (4-9pm) to avoid paying for high priced electricity.
- Offset utility cost savings from solar PV systems can be used toward the cost of batteries and microgrid components.

Project Overview

| Sites | Approximate Size (kW) |
|-----------------------|-----------------------|
| 1. Bahia Vista ES | 154 |
| 2. Davidson MS | 379 |
| 3. Sun Valley ES | 120 |
| 4. Terra Linda HS* | 855 |
| 5. Venetia Valley K-8 | 202 |
| 6. San Rafael HS* | 1,010 |
| Total | 2,720 kW |

**Site will have battery storage and microgrid component*

Current Schedule

| Event | Timeline |
|-------------------------------|----------------------------|
| Community Engagement Meetings | December 2022 |
| RFP Process | January – February 2023 |
| Design | Spring 2023 |
| Construction | Beginning Summer/Fall 2023 |
| Final Completion & Operation | Early 2024 |

Example PV Canopies



Preliminary Design



Note: Only 2-3 array locations will be selected.

Renderings





Questions?

Dan Zaich, Ed.D.
Senior Director – Capital Improvements, SRCS
dzaich@srcs.org

Zoe Respondek
Project Manager, Sage Energy Consulting, an NV5
Company
Zoe.Respondek@nv5.com



THANK YOU

© COPYRIGHT 2022
SAGE ENERGY CONSULTING, an NV5 Company
SAGERENEW.COM

Reference Slides

Historical Energy Usage

| Site No. | Site Name | Historical Annual Usage, kWh |
|----------|-----------------------------|------------------------------|
| 1 | Bahia Vista ES | 279,000 |
| 2 | Coleman ES | 227,000 |
| 3 | Davidson MS | 666,000 |
| 4 | San Rafael HS ² | 1,540,000 |
| 5 | Sun Valley ES | 207,000 |
| 6 | Terra Linda HS ³ | 1,096,000 |
| 7 | Venetia Valley ES | 349,000 |

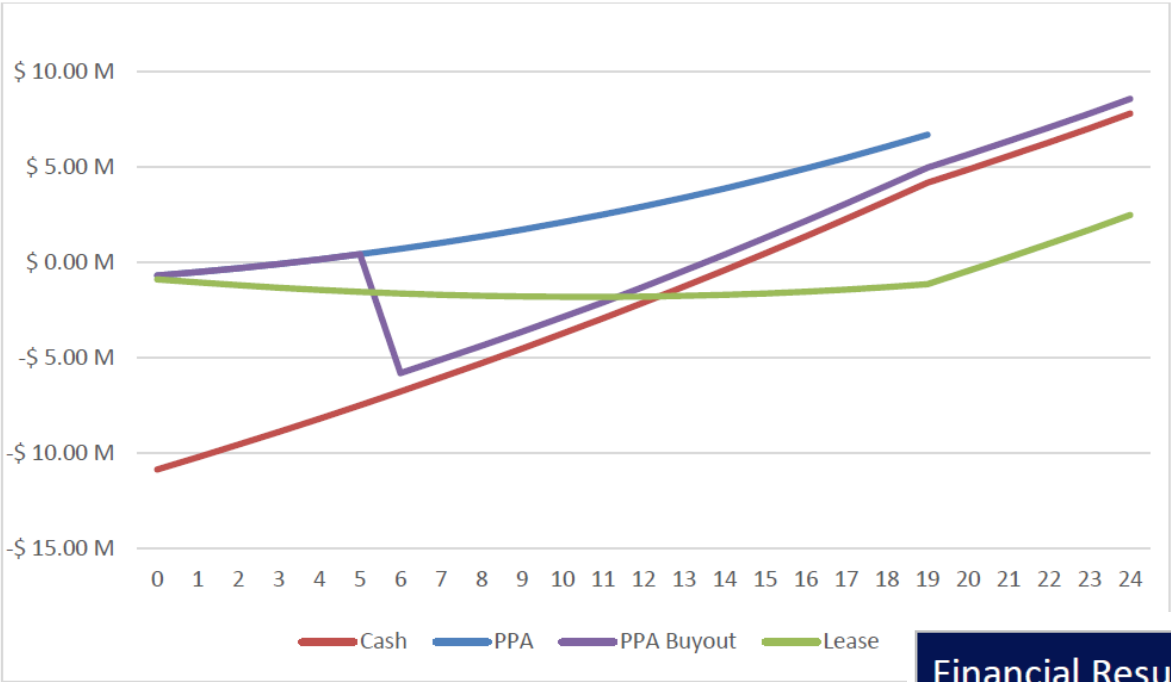
| Utility Consumption Information | FY2019 |
|------------------------------------|------------|
| Annual Electric Consumption, kWh | ~4,600,000 |
| Annual Electric Cost (Modeled), \$ | \$1.06M |

Feasibility Results

Table 4-4: Utility Tariff Analysis Results

| Site Name | Year-1 Savings | Bill Offset, % | Value of Energy, \$/kWh |
|-------------------|----------------|----------------|-------------------------|
| Bahia Vista ES | \$44,000 | 66% | \$0.2385 |
| Coleman ES | \$20,000 | 32% | \$0.2647 |
| Davidson MS | \$110,000 | 69% | \$0.2398 |
| San Rafael HS | \$243,000 | 68% | \$0.2187 |
| Sun Valley ES | \$50,000 | 93% | \$0.2595 |
| Terra Linda HS | \$185,000 | 70% | \$0.2149 |
| Venetia Valley ES | \$60,000 | 62% | \$0.2769 |
| Total | \$712,000 | 66% | \$0.2447 |

25-Year Cash Flows



| Financial Results | Units | Cash | PPA | PPA-Buyout | TEML |
|--------------------------------|--------|-----------|--------|------------|---------|
| Year 1 | | | | | |
| Value of Solar | \$/kWh | \$0.1762 | | | |
| Value of Solar | \$ | \$713,000 | | | |
| Annual Energy Cost After Solar | \$ | \$347,000 | | | |
| 25-year P50 Results, Solar PV | | | | | |
| Nominal Returns | \$ | \$7.5M | \$6.7M | \$8.6M | \$2.2M |
| NPV Returns, 2% Discount Rate | \$ | \$3.1M | \$5.1M | \$5.3M | \$0.74M |

PPA Buyout Cash Flow

