



Investment-Grade Feasibility Study(IGFS) Solar PV & Battery Storage

September 23, 2021

San Mateo-Foster City School District

Agenda

Project Details

Site Selection

Solar Photovoltaic (PV) Design Options

Financing Options

Findings

Battery Energy Storage System (BESS) Considerations

Key Takeaways



Project and Study Details

IGFS Scope

Solar PV + Battery Energy Storage

- 26 District sites
 - Includes CNC Kitchen, M&O and District Office
- Solar PV and BESS systems
- Three financing scenarios
 - \$10-11M Measure T bond funding
 - Power Purchase Agreement PPA
 - Tax-Exempt Municipal Lease

Project Goals

Identify a project portfolio that:

- Fits within Measure T budget
- Reduces operational costs
- Optimizes financial returns
- Paves the path for District's Zero Net Electricity (ZNE) goals

Site Selection

Recommended Sites

Criteria

- Available Measure T Funds
- Maximum General Fund Savings
- Available Area for solar PV installation
- Changes for IGFS Stage
 - North Shoreview has been removed due to physical site constraints (median wall and vegetation)
 - George Hall, Highlands, and Meadow Heights have been included for District's future NZE goals.

Site #	Site Name	Building Type
1	Audubon	Elementary
2	Bayside Academy	K-8
3	Beach Park	Elementary
4	Borel	Middle
5	Brewer Island	Elementary
6	Child Nutrition Center	Kitchen
7	College Park	Elementary
8	Fiesta Gardens	Elementary
9	Foster City	Elementary
10	George Hall	Elementary
11	Highlands	Elementary
12	Laurel	Elementary
13	LEAD	Elementary
14	Meadow Heights	Elementary
15	Parkside	K-8
16	SMFC District	District Office
17	Sunnybrae	Elementary
18	Turnbull	Pre-School

Solar PV Design Options

Three solar panel mounting options

- Shade Structures
- Parking Canopies
- Rooftop
- Changes for IGFS Stage
 - New Designs: Rooftop Solar PV on new MPR solar-ready roofs at George Hall, Highlands, and Meadow Heights.
 - Design Modifications: Audubon, Beach Park, College Park + Turnbull, District Office, LEAD

Site #	Site Name	Shade Structures	Carport Canopy	Rooftop
1	Audubon		✓	✓
2	Bayside Academy	✓		
3	Beach Park		✓	✓
4	Borel	✓		✓
5	Brewer Island	✓	✓	
6	Child Nutrition Center			✓
7	College Park	✓	✓	
8	Fiesta Gardens	✓	✓	
9	Foster City	✓	✓	
10	George Hall			✓
11	Highlands			✓
12	Laurel	✓		
13	LEAD	✓		✓
14	Meadow Heights			✓
15	Parkside	✓		✓
16	SMFC District		✓	
17	Sunnybrae		✓	
18	Turnbull	✓	✓	

Project Financing



Cash Purchase
with Measure
T GO Bonds

- **Best Financial Performance** of all Financing types
- All cost savings (minus M&O) go to General Fund
- ~\$10.7M Solar PV Project Cost
- District owns and maintains the system
- Requires a separate M&O Contract

Project Findings

Metric	Measure T Cash Purchase
Number of Sites	18
Solar PV Size, Portfolio	~2.54 MW
Financing Option	Measure T GO bond
Estimated Installed System Cost*	\$10.7M
25-year Net General Fund Savings to District	\$22.3M
25-year NPV Savings (2.5% Discount Rate)	\$15.9M
Simple Payback**	15 years

* Measure T GO bond funds.

** Measure T GO bonds do not need to be repaid by District.

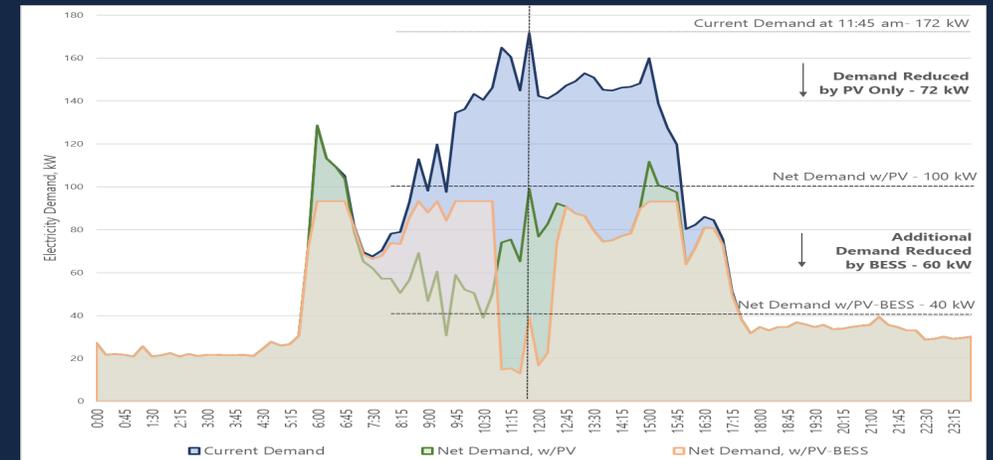


Battery Energy Storage Systems (BESS)

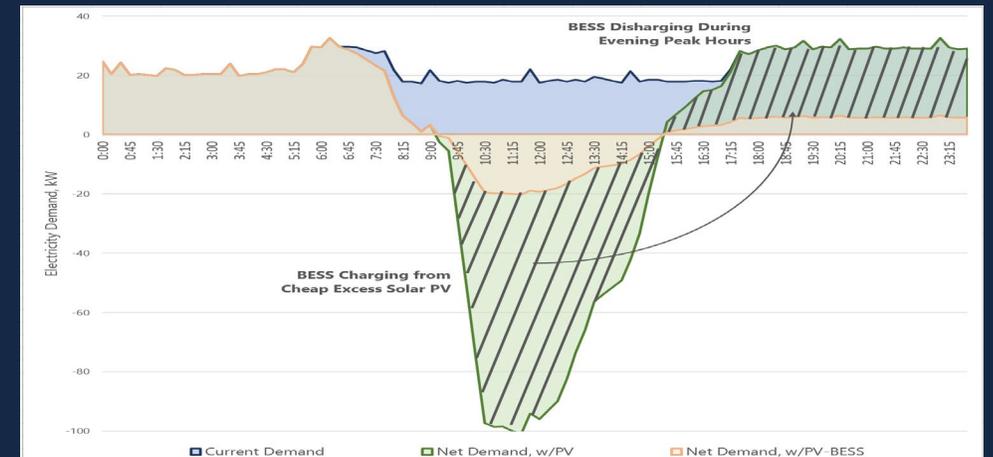
BESS systems produce negligible savings for this project

- Current BESS value streams
 - Demand reduction
 - Energy arbitrage
- Current PV tariffs are not beneficial for BESS
- Market issues for small BESS
 - Market somewhat unstable for <250kWh systems
 - Market instability causing high prices
 - Long lead times

Demand Reduction



Energy Arbitrage



Key Takeaways

1. Project Portfolio is financially and physically viable

- 18 District sites
- ~\$10.7M budget
- Offsets 70% of portfolio's adjusted energy consumption

2. Measure T bond fund financing

- All energy savings go to General Fund, minus M&O costs

3. Primarily carport canopies and shade structures with select rooftop systems (includes rooftops for new MPRs)

- All new solar-ready rooftops are included.



Next Steps

1. NEM 2.0 Grandfathering Interconnection Applications

- Application Preparation & Submission
 - Submit interconnection application **by Nov 2021**
- Application Management
 - Ensure application is accepted by PG&E

Milestone	Timeline
Interconnection Application Prep and Submission	September – October 2021
Interconnection Application Management	November – December 2021

Next Steps

2. Procurement Process

- **Design-Build RFP**
 - Prepare RFP/Q documents
 - RFP distribution
 - Manage procurement process
- **Vendor Selection**
 - Proposal review
 - Detailed bid analysis
 - Interview short listed proposers
- **Contracting Support**
 - GC 4217 Resolution
 - Contract review
 - Negotiate and finalize contracts

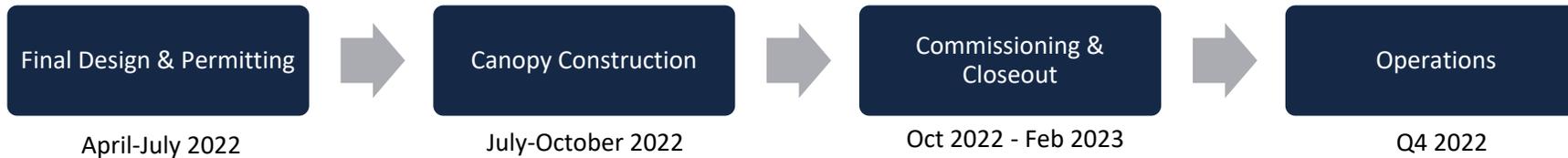
Milestone	Timeline
Design-Build RFP Preparation	October – November 2021
RFP Issuance	December 2021
Vendor Selection	February – March 2022
Contracting Support	March – April 2022
4217 Resolution	Prior to Contract

Tentative Project Timeline

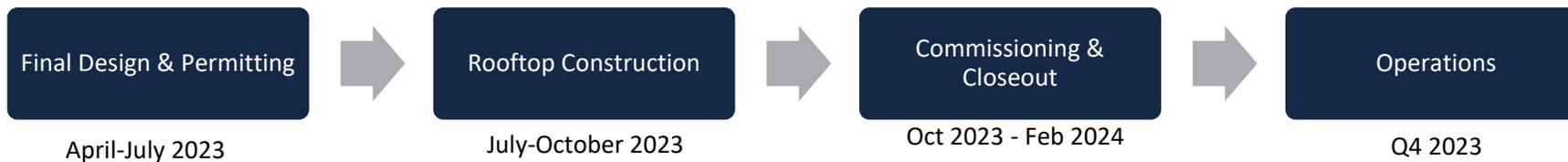
Procurement



Construction: Phase I (Canopy systems)



Construction: Phase II (Rooftop systems)





THANK YOU

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