

Status of SCV Water's Solar Assets

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SCV Water – Water Resources & Watershed Committee
August 9, 2023

SCV Water Solar Update Objectives

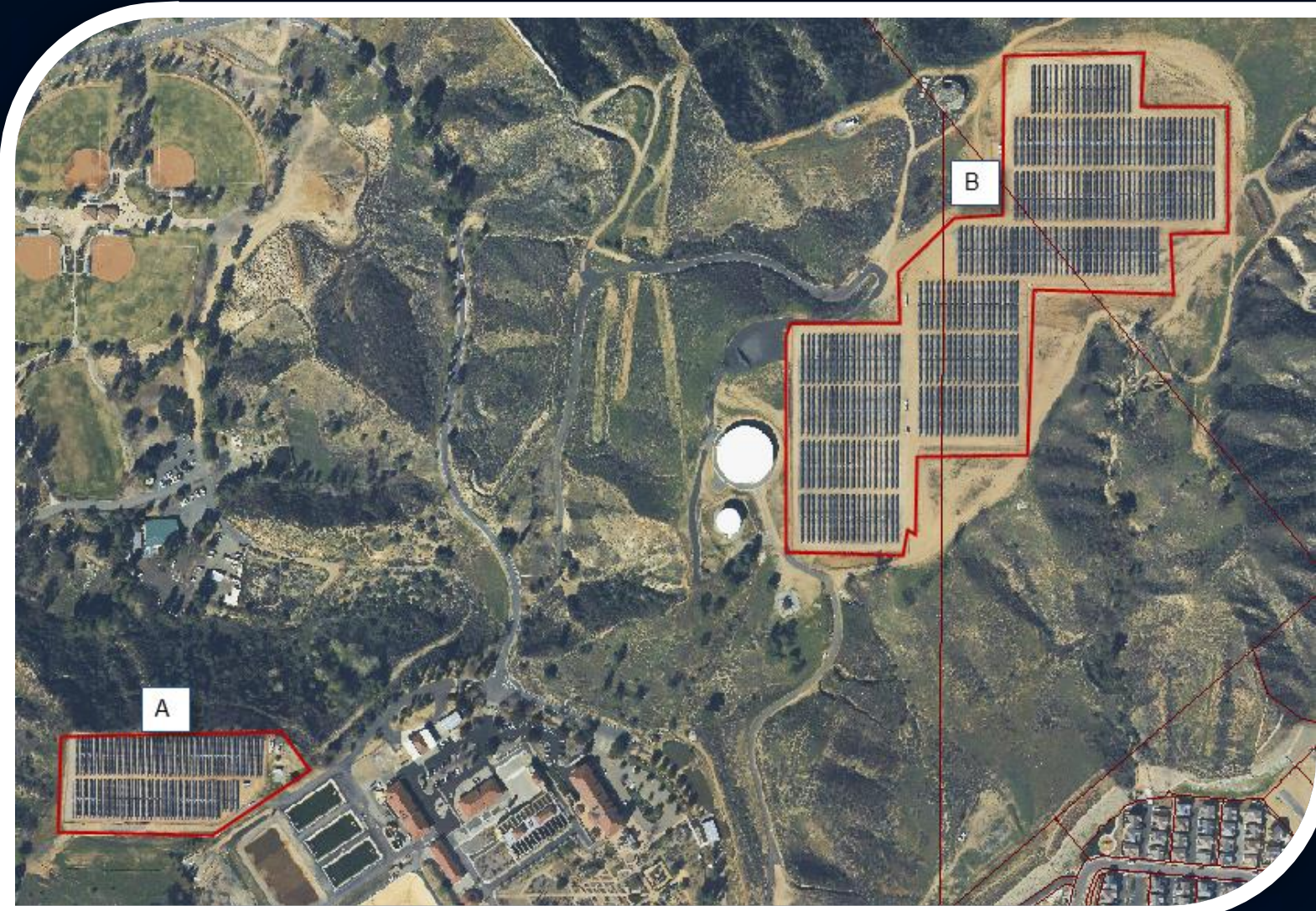
- History of Solar Asset Development
- Review Purchase Option Process
- Discuss Ownership Transition
- Summary of Operational Maintenance & Preventative Maintenance (OM/PM) Framework
- Overview of Current PV System Performance
- Next Steps



Project Overview

Phase 1

Start: 2011
Size: .951 MW
Prod: 2,218 MWH
PPA: \$.105/kWh
Term: 20 Years
ARE: 2%

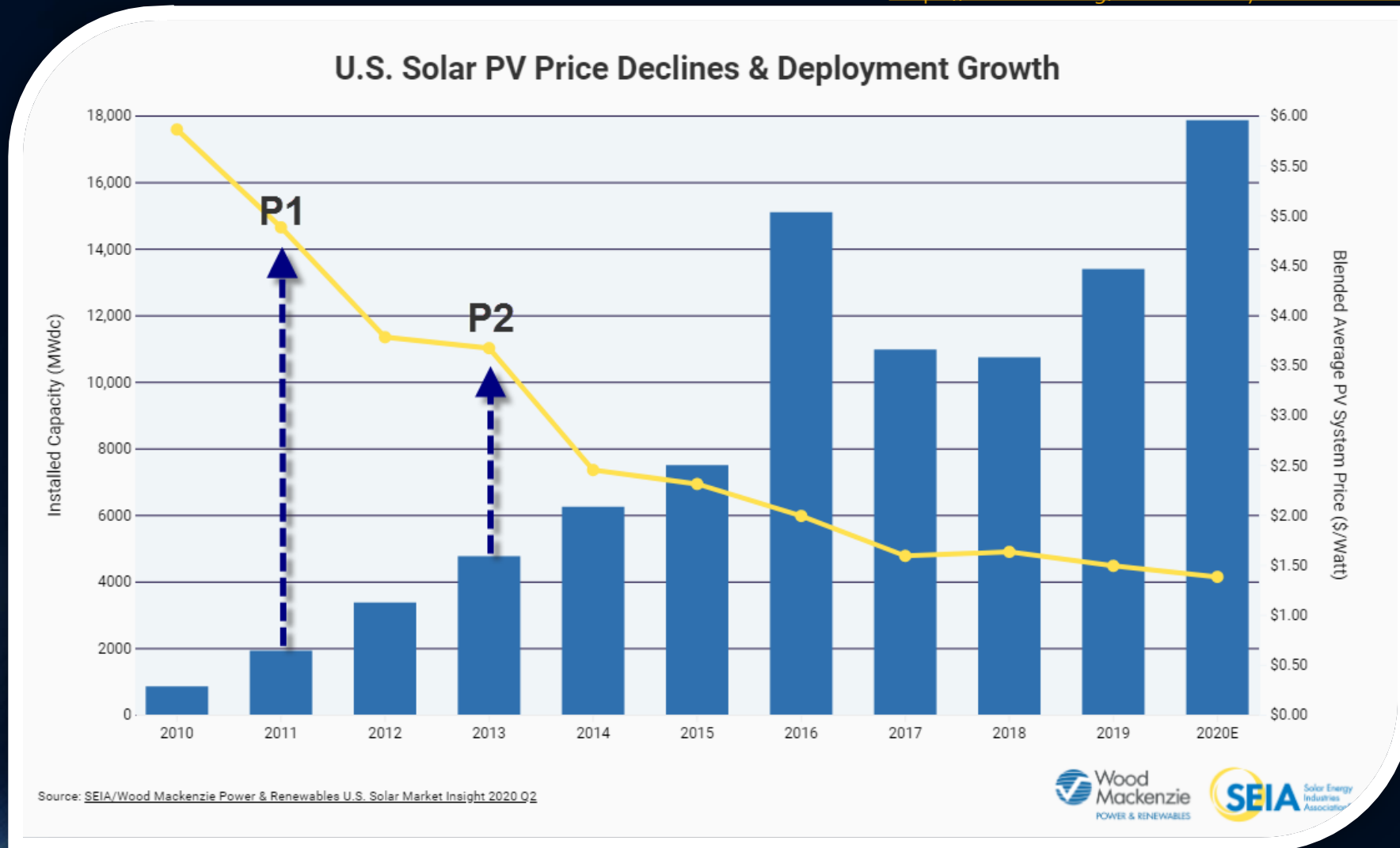


Phase 2

Start: 2013
Size: 3.5 MW
Prod: 9,266 MWH
PPA: \$.114/kWh
Term: 25 Years
ARE: 2%

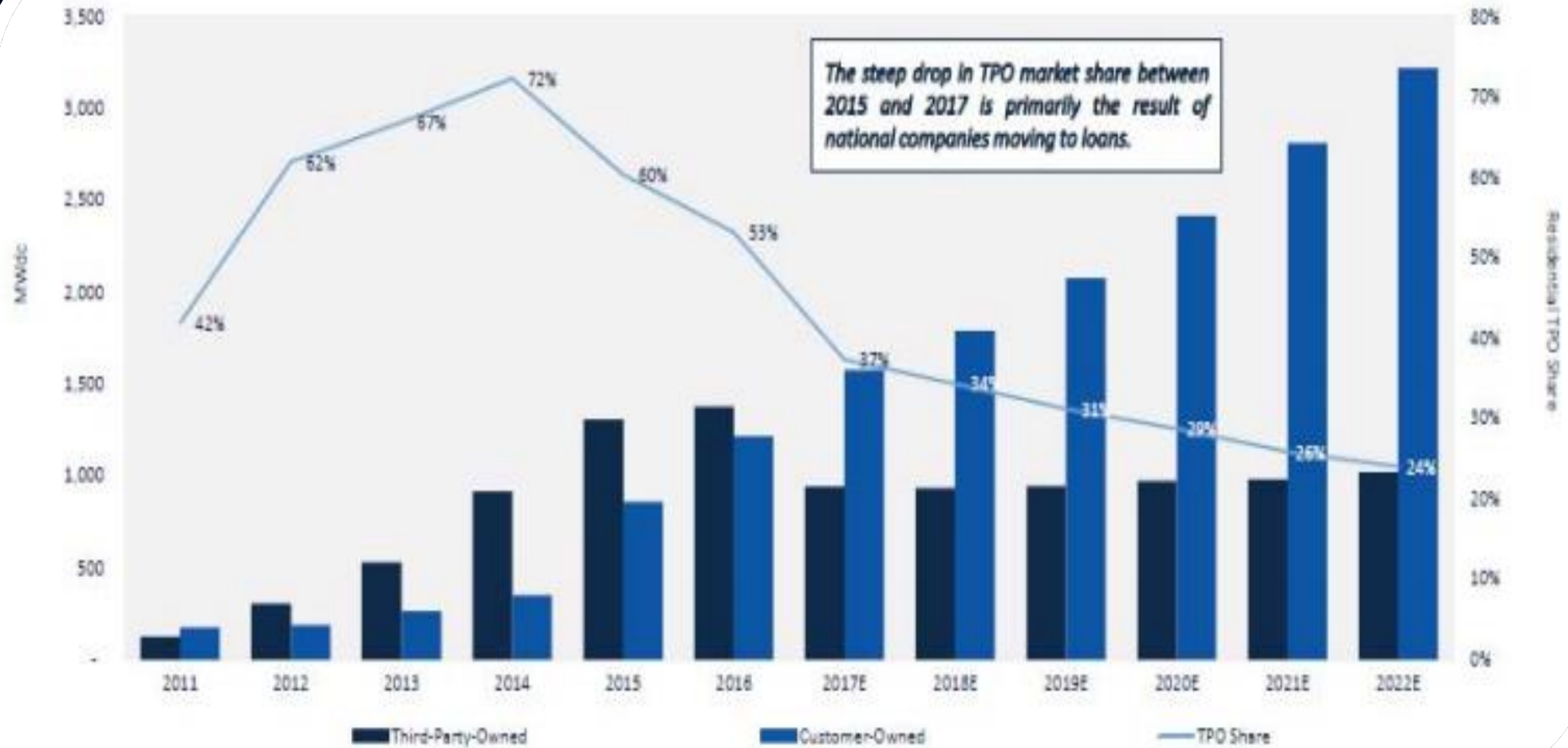
Market and Rates

<https://www.seia.org/solar-industry-research-data>



Market and Rates

https://www.moodys.com/sites/products/ProductAttachments/2_New_Developments.pdf



Market and Rates

<https://www.nrel.gov/docs/fyo8osti/42305.pdf>

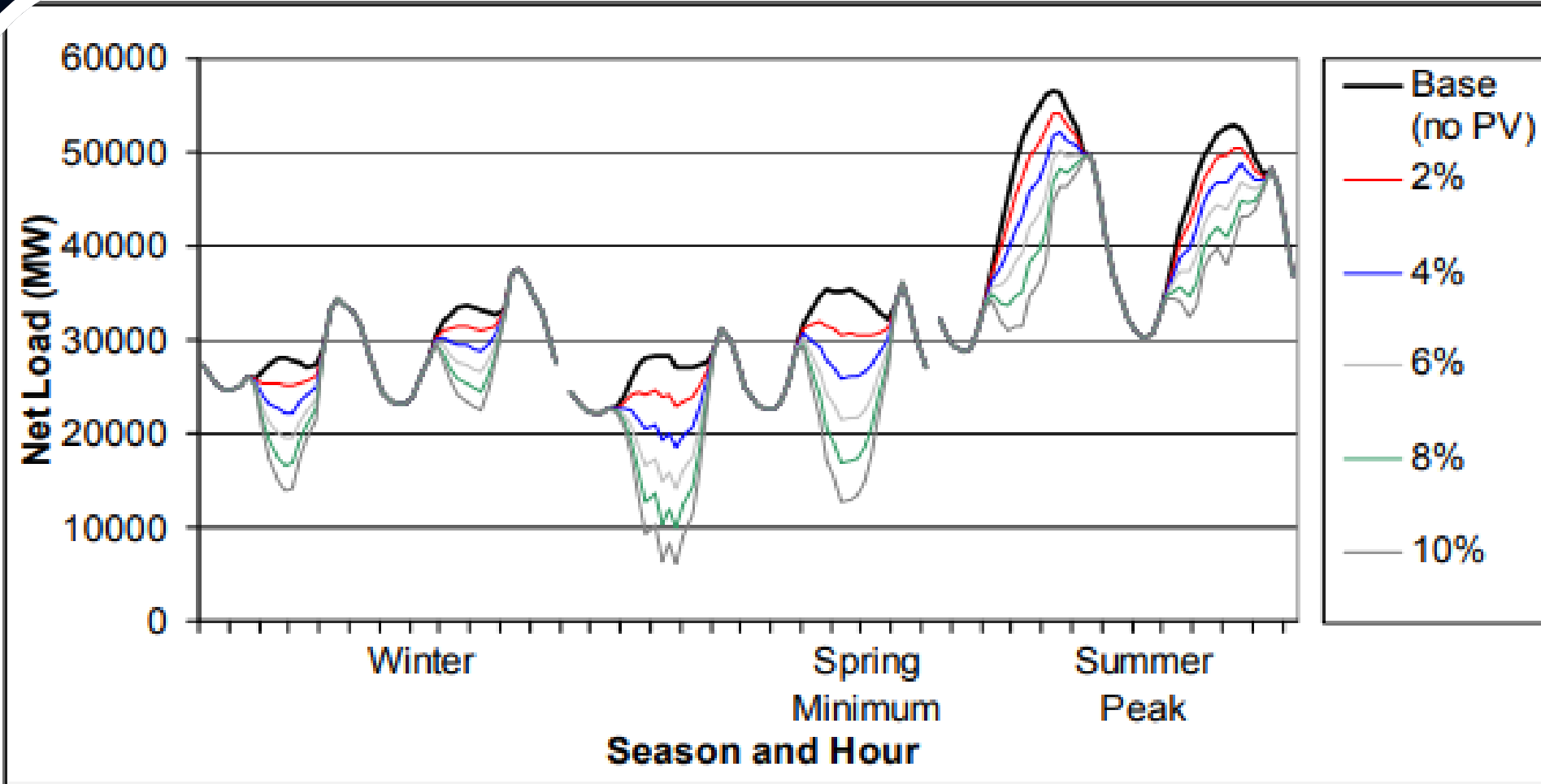


Figure 8. Load Shapes in California with Various WECC PV Penetration Scenarios

Market and Rates



Smith, P. (2014) SCVnews.com

Rate Considerations and Impacts

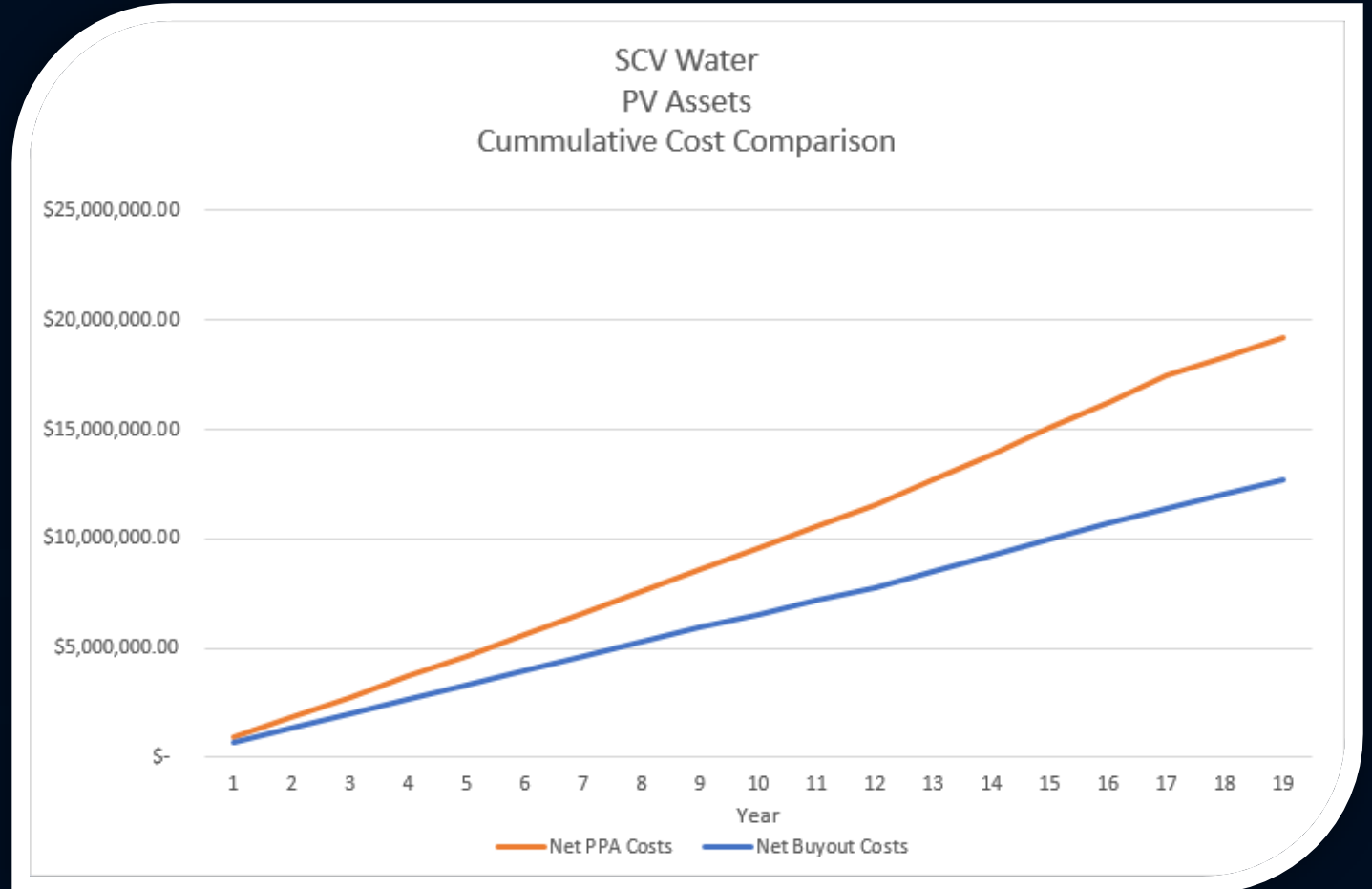
- Phase 1 (A) Interconnected via SCE's NEM Program.
- Phase 2 (B) Interconnected and A & B re-configured to SCE's RES-BCT program.
- CPUC Authorized IOUs (SCE) to shift time-of-use peak period to evening.
- TOU shift "strands" benefits & impacts short and long-term value of PPA.
- SCV Water (collaboration effort) awarded indifference payment of \$1.8 million.

Review Purchase Option Process (Cost Analysis)

Comparison Analysis Results

- **PPA (RES-BCT)**
 - Initial Cost: \$0
 - \$/kWh: \$.13 to .19
 - Projected Cost: \$30.1 Million
 - Net Cost: \$19.1 Million
- **PPA Buyout (RES-BCT)**
 - Initial Cost: \$15.467 Million
 - \$/kWh: \$.07
 - Projected Cost: \$25.8 Million
 - Net Cost : \$14.2 Million

Difference: \$4.9 Million (25.7%)



Ownership Transition

1. **March 2021 – SCV Water Purchases Solar Arrays (\$15.467 Million)**
2. **March 2021 – Operations & Maintenance, Preventative Maintenance (OM/PM) Agreement with SunPower (Time and Materials)**
3. **March – November 2021: Upper Field Repairs**
4. **July – November 2021: Thermal Event Outage (100%)**
5. **November – January 2021: Fuse Failure (100%)**
6. **January 2022: System Partially Restored to Service (20-40%)**
7. **March 2022: Legacy Monitoring System Offline**
8. **April 2022 – Temporary Agreement with NovaSource**
9. **May – Aug 2022: Request for Proposals for Long-term OM/PM**
10. **August 2022: OM/PM Contract Awarded (TerraVerde Energy)**



Summary Operations and Maintenance & Preventative Maintenance

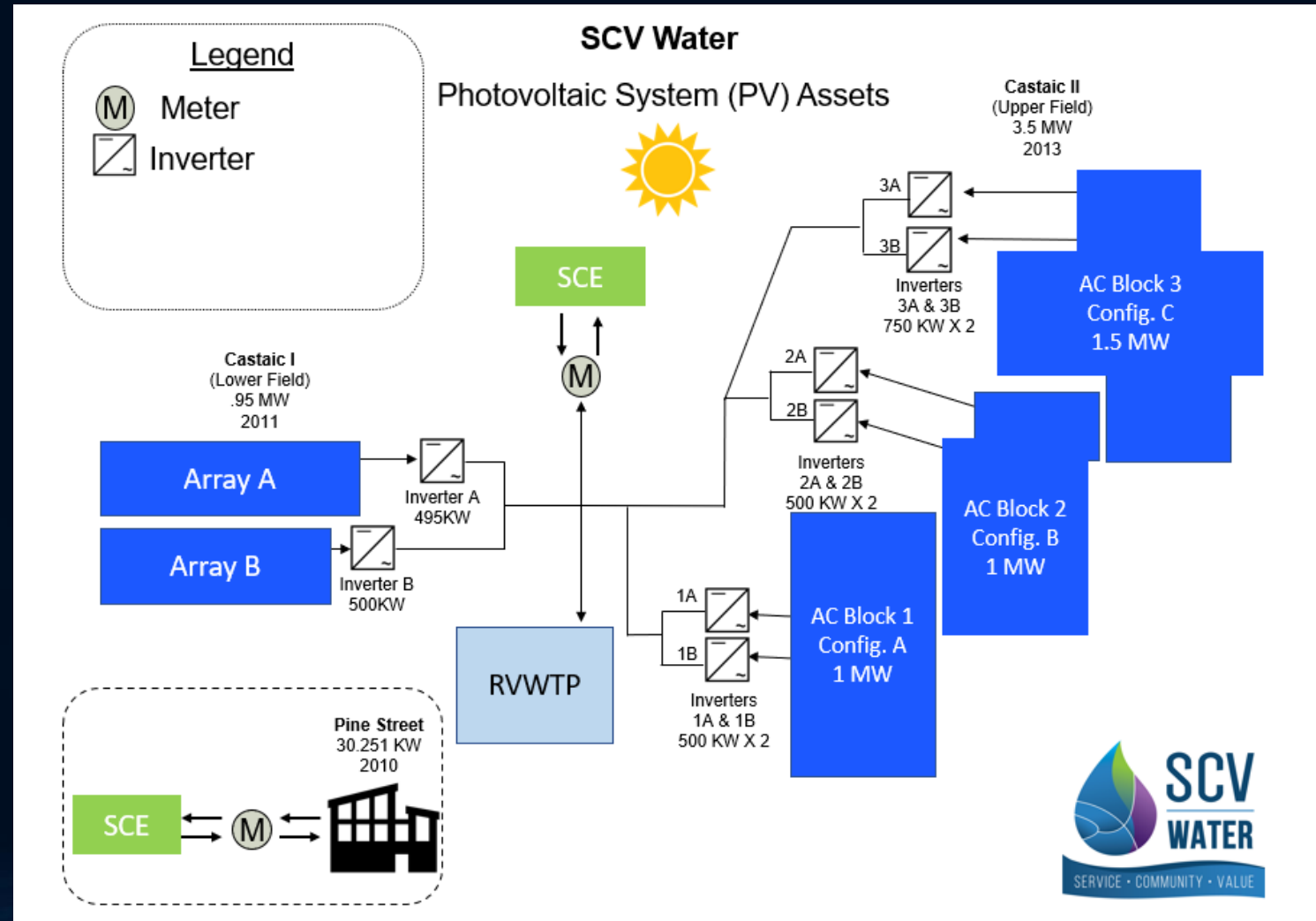
1. OM/PM Contact Scope
 1. Covers 2 Systems
 1. 4.5 MW - Rio Vista Water Treatment Plant (Lower & Upper Fields)
 2. 30.251 kW Pine Street System
 2. Energy & Power Provider Performance Optimization
 3. Detailed Quarterly Energy Performance Analysis
 4. Annual Analysis and Financial Reporting
 5. Annual Preventative Maintenance Services
 6. Annual Panel Washing
 7. Weed Mitigation (pass through item)

2. Annual OM/PM Contract Costs - \$120,000
3. Initial Corrective Maintenance Costs - \$50,000
4. New Monitoring System Costs - \$80,000



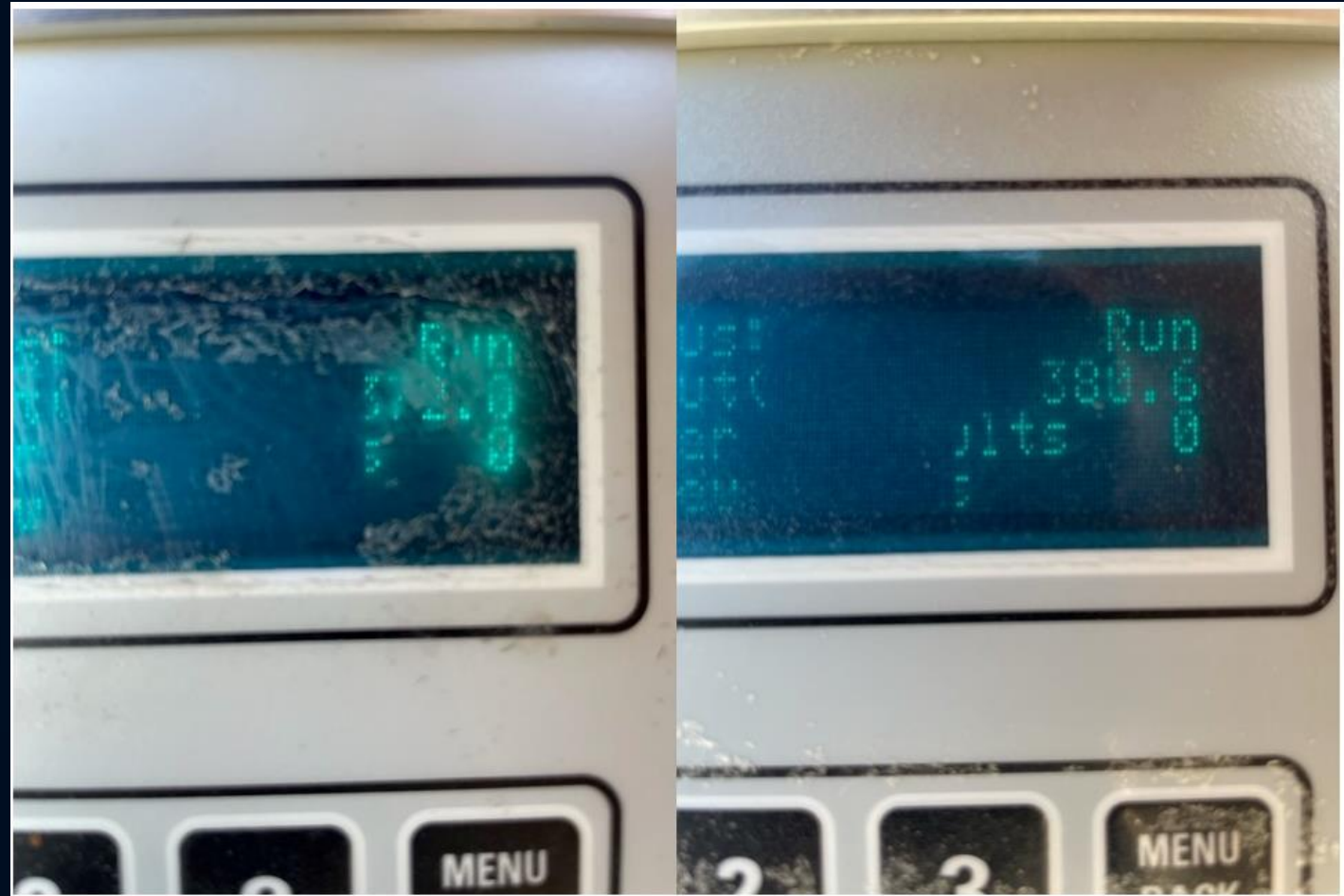
Operations and Maintenance & Preventative Maintenance

- **SCVWA Collaborative Management Team:**
 - Sustainability (PM)
 - Operations
 - Administration
 - Buildings and Grounds
 - Finance
- **Objectives**
 - Information Sharing
 - Coordinate Maintenance Support
 - Assess Impacts (Operations, Financial, Sustainability)
 - Enhance Redundancy



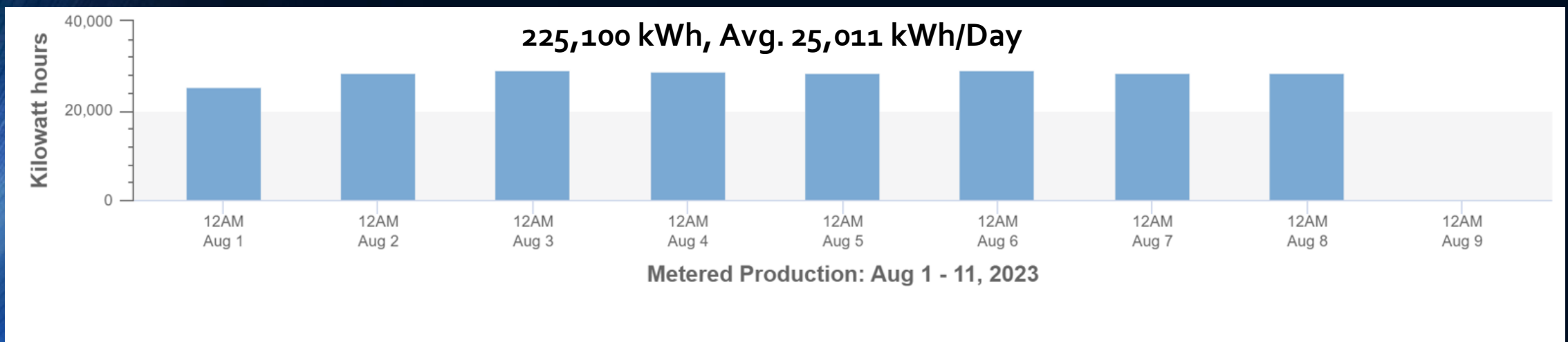
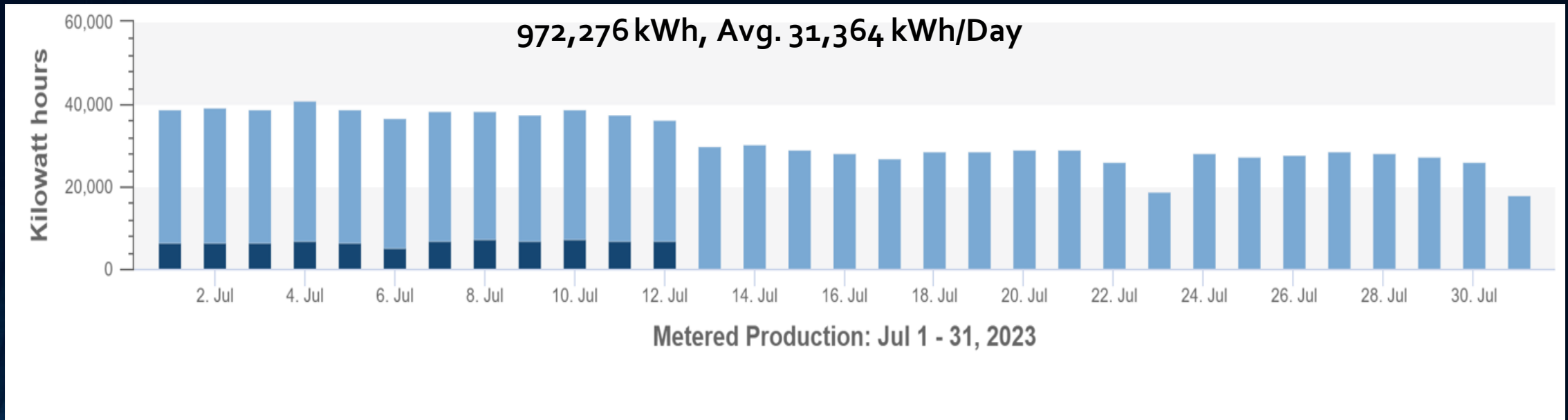
Current Photovoltaic System Performance

1. August 2022: OM/PM Contract Awarded (TerraVerde Energy)
2. Aug-June 2023: PV System Triage (60-80% Capacity, Manual Verification)
3. July 2023: New Monitoring Online (100% Capacity, Monitoring & Manual Verification)



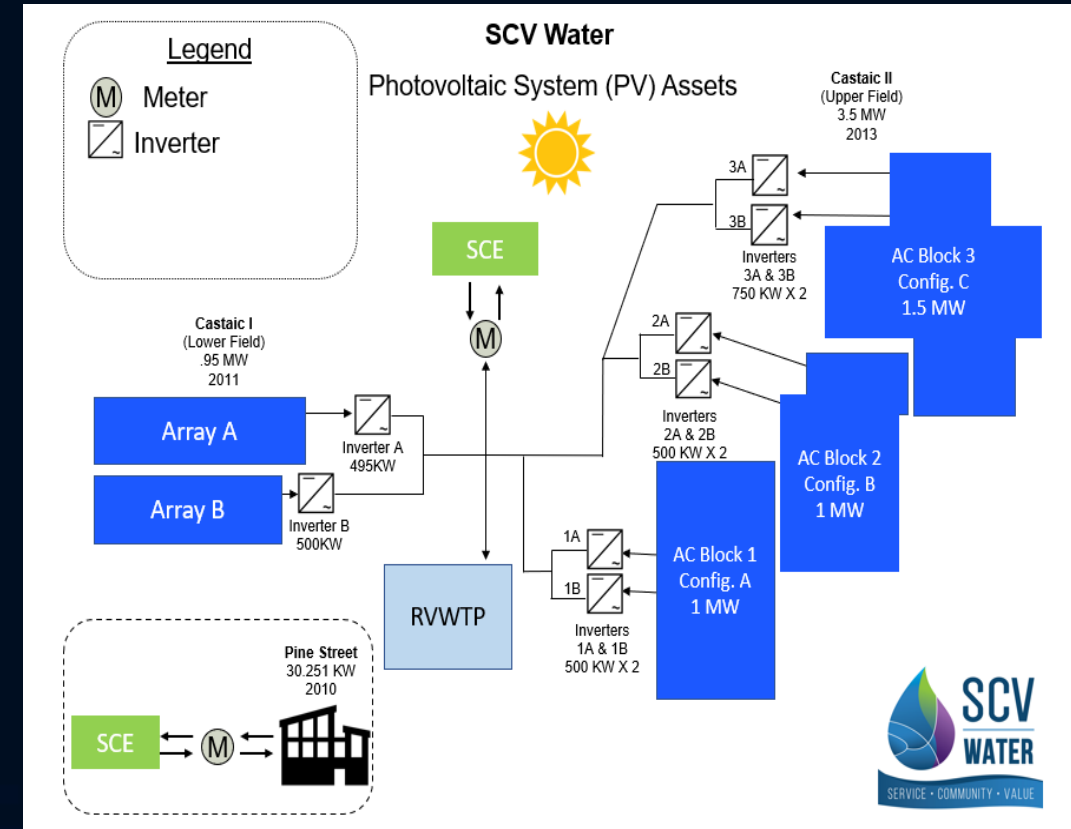
Lower Field Inverter Manual Verification (July 2023)

Current Photovoltaic System Performance



Next Steps

1. PV System
 1. Rio Vista Water Treatment Plant (Castaic I/II)
 1. Lower Field Production Meter Communication: Inverters Producing, but not Reporting
 2. Lower Field Panel Washing
 3. Upper Field Tracker Repairs
 4. Inverter Replacements on Radar
 2. Pine Street
 1. Panel Washing Scheduled
2. Land Management
 1. Erosion Control at Lower Field
3. Pest Management
 1. Rodent Control Mitigation Plan & Services Needed @ Both Fields
4. Renewable Energy Certificate Sales
 1. Current Market at \$15.00 per MWH
5. Battery Storage Implementation and Configuration (If Approved)



PV Asset Portfolio Assessment

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