

Sunwheel Energy Partners

Greening San Diego's Affordable Housing
California Center for Sustainable Energy

July 16, 2009



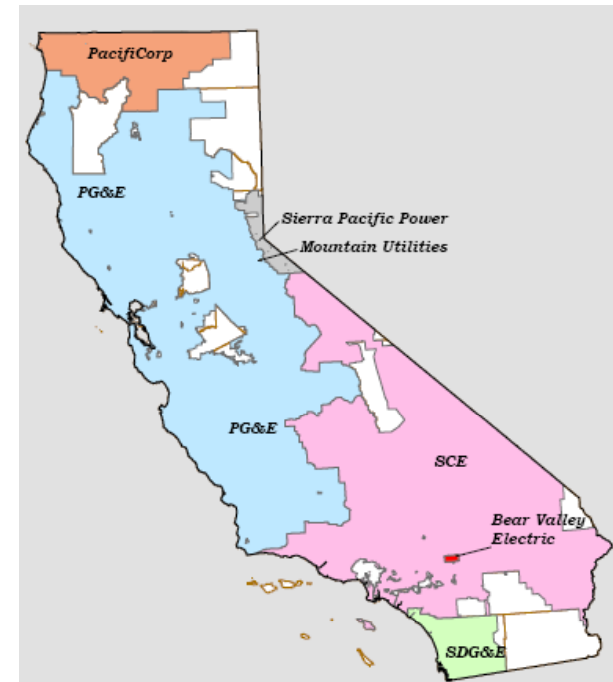
Sunwheel Energy Partners

- Founded by McCormack Baron Salazar (MBS) to focus on energy sustainability in mixed-income/affordable housing
- MBS, based in St. Louis and Los Angeles, has been building and managing transformational housing for 35 years
 - Over \$2 Billion and 15,000 units of mixed-income/ affordable housing developed
- Sunwheel's primary focus: solar photovoltaic (PV) serving affordable housing, government and community facilities
 - Team experience: Over 10 years manufacturing, engineering and installing Solar PV systems
 - Currently working on 12 solar projects in California (approx. 1.7 Megawatts)



Current Sunwheel MASH Projects

- SCE service area
 - 3 sites: MASH rebates reserved (630 kW)
- PG&E service area
 - 4 sites: MASH rebates reserved (730 kW)
 - 1 site in process
- SDG&E area
 - 1 site in process



PPA Turnkey Solution

- Through Power Purchase Agreement (PPA), Sunwheel provides Solar PV system at no cost to site owner (“Host”)
- Host buys electricity generated from the Solar PV system at below the grid rates
- Host’s savings begin Day One

Project Phases

Phase I

Site Review and Selection

- Site Review and Assessment
- Site Selection
- Incentive Applications
- PPA

Phase II

Design and Planning

- Integrator Selection
- System Design
- Scheduling

Phase III

Installation

- Physical Site Prep
- Equipment (Modules, Inverters) Delivery and Installation

Phase IV

Completion & Commissioning

- Utility Review
- Permitting Authority Inspection
- Testing

Phase V

Ongoing Operations

- Maintenance
- Monitoring
- Repair

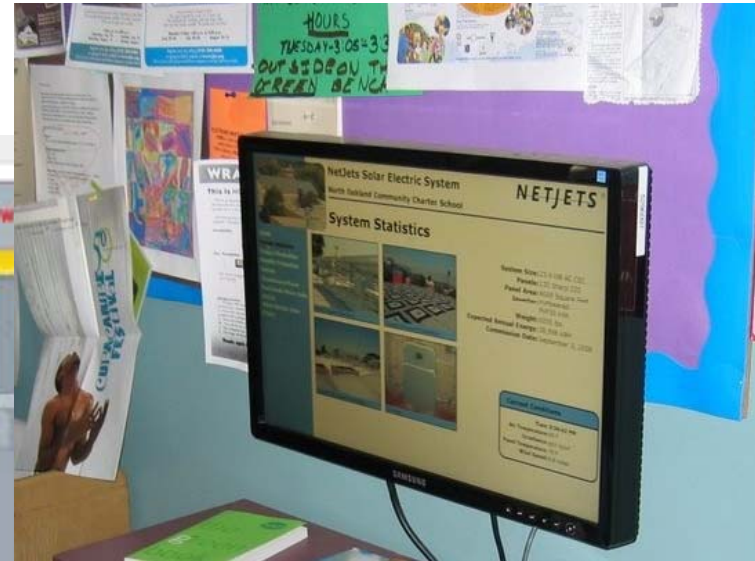
Installation Locations and Possibilities

- Roof Mounted – Pitched and flat, most materials
- Carports
- Shade Structure – Entry ways, walkways, vending locations
- Ground Mounts – If otherwise unusable space is available and poses little security risk

Energy Savings Begin Day One

- Reduce common area bills
 - Pay less than current grid rates per kWh
 - Small annual escalation
- With Virtual Net Metering can allocate savings to common areas *and* tenant areas
 - Allocate to tenants if they have individual meters (not master metered)
- Can offer “free electricity” to tenants

Monitoring and Education



Kiosks showing real-time use, power generated

Example 1: Southern California

- SCE MASH Program

System Overview	
System Cost	\$3.2M
System Size	458 kW DC
Tenants	
Tenant Allocation	62%
Energy Offset	411,600 kWh
Common Area	
Common Allocation	38%
Energy Offset	252,300 kWh / 90% of historical usage
Est. Cost Savings	19% total / 30% avoided cost

Example 2: Northern California

- PG&E MASH Program

System Overview	
System Cost	\$809,000
System Size	119 kW DC
Tenants	
Tenant Allocation	50.5%
Energy Offset	84,000 kWh
Common Area	
Common Allocation	49.5%
Energy Offset	82,300 kWh / 90% of historical usage
Est. Cost Savings	40% total / 46% avoided cost

Key Metrics: Ranges for Current Projects

System Overview	
System Cost	\$6.50-\$7 W
System Size	85 – 500 kW
Tenants	
Tenant Allocation	40-66% / NA if master metered
Est. Cost Savings	15-65% total / 1.22 kW per tenant (average)
Common Area	
Common Allocation	34-60%
Energy Offset	Average: 71% of historical usage
Est. Cost Savings	11-52% total / 21-58% avoided cost

System Considerations

- MASH: Common/Tenant Allocation
 - Allocation to common area limited to historical usage
 - Allocation to tenants - up to 5kW per tenant
 - Can adjust allocation after 5 years
- System Size
 - “Rightsizing” the system
 - Baseline approach: Cover common usage (if possible), with extra power going to tenants.
- Suitability of site
 - Roof condition, shading, space

Solar PPA Program

Roles and Responsibilities

System Owner (Sunwheel)	Host (Property Owner)
Installation Cost	Easement to Roof
Operating Costs	Assignment of Rebates
Repairs	Solar-generated power purchased at reduced rate according to PPA
Maintenance	
Roof damage or penetration leaks	Host has option to purchase system at end of term at FMV (and one option mid-term)
System monitoring	

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