#### **GRID Alternatives' Solar Affordable Housing Program and Model:**

Overview, Tribal Participation, Partnership





#### **RTOC Tribal Caucus Meeting**

8/30/12; Reno, NV

Presenters: Cathleen Monahan,

SASH Program Officer

Rob Roy, La Jolla Environmental Director





# La Jolla Band of Luiseno Indians Partnership with GRID Alternatives











#### History

- GRID presentation to SCTCA in 2009
- Meetings to learn more and verify details
- Creation of process that respects Tribal sovereignty and culture
- Tribal Council approval
- Outreach meetings
- First install completed in middle of 2010
- To date ten systems have been installed



#### Process

- Homeowners can either apply directly to GRID or we help with paperwork
- Local Indian housing authority assists when their homes are involved and covers the systems under their insurance
- Plans are reviewed and approved by P.E.
- Photovoltaic system installation
- Third party inspector process
- Tribal inspections and approval by local utility
- PTO provided to homeowner



#### Progress

- 10 systems installed to date
- 5.130 kW \$31,727
- **5.553 kW \$35,245**
- **3.967** kW \$25,604
- 4.735 kW \$26,078
- 4.513 kW \$31,591
- 3.488 kW \$20,928

- **5.368 kW \$37,225**
- 6.531 kW \$39,186
- 3.259 kW \$22,600
- 6.946 kW \$48,622
- That's a total value of \$318,806 in solar generating 49.49 kW of clean energy!



#### Benefits

- Reliable and low maintenance
- Increased energy independence for homeowners
- Reduced energy bills for homeowners
- Reduced production of GHG emissions
- Helping the Tribe achieve energy goals
- Oh so many more!



### Contact Info and Next Up

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#### Session Agenda

- I. GRID Alternatives Model
- II. Photovoltaic (PV)- Solar Overview
- III. The SASH Program, Tribal Participation, and Project Process
- IV. Opportunities for Collaboration: Tribal Partnership with GRID Alternatives









#### I. GRID Alternatives' Model





- GRID Alternatives' History
- Why Residential Solar for Lower-Income families?
- Benefits for Tribes to Go Solar





#### **GRID** Alternatives

#### Who?

Nonprofit solar contractor

#### What?

That installs solar electric systems exclusively for homeowners who qualify as low-income

#### How?

With the help of volunteers and job trainees





#### History

- Founded by Erica Mackie, PE and Tim Sears, PE
- Piloted Solar Affordable Housing Program in 2004
- Headquarters in Oakland, 7 regional offices throughout CA and expanding to Colorado this year
- Regional offices: Oakland, Los Angeles, San Diego, Riverside, Atascadero, Fresno and Chico





#### Why Solar for Low-Income Families?

**High energy costs** - Low-income families spend 10% more of their budget on energy bills than the average American

**Unpredictable expenses** make budgeting difficult for people on limited income

Average **reduction in monthly electric bills** for low-income families of <u>80%</u>





### Why Solar for Low-Income Families?

- Environmental Justice This sector of society can participate in the environmental movement
- Homeowners who can least afford clean energy are often exposed to highest levels of environmental pollution





#### **GRID** Alternatives Growing Impact

- Number of low-income solar electric systems installed to date: <u>> 2,340</u>
- Value of power generated over the systems' lifetimes for low-income families: <u>\$55M</u>
- Volunteers trained: > 9,200 individuals
- Tons of greenhouse gas emissions prevented over the systems' lifetimes: > 185,000
- Job trainees trained <u>> 3,000</u> individuals from <u>> 50</u> job training organizations
- Paid employment opportunities on GRID's sub-contracted projects <u>>800 paid jobs</u> for eligible job trainees since 2010



#### How can Solar Benefit Tribes?

- Environmental Improvement- Solar is a clean, renewable energy source
- Appropriate technology Roofmounted solar is non-imposing on land
- Significant economic benefits for homeowners in electric savings over time
- Green jobs training and potential paid employment opportunities for tribal members in the growing field of solar installation







# II. Photovoltaic (PV)- Solar Overview







- GRID-tied Systems
- Net Energy Metering (NEM)
- Solar Site Selection





#### **PV- Systems**

- Types of PV Systems
  - Stand-alone or Off-grid (Requires batteries)
  - Grid-tied (Net metering)
  - Grid-tied with battery back-up (Expensive)
- Grid-tied (The systems GRID Alternatives installs)
  - Homeowner will have black out if utility goes down
  - Homeowner continues to get a utility bill
  - No batteries, Minimal maintenance







#### **Grid-tied System**



### **Considerations for Solar-Suitability**

- Solar Resource
- Roof space and roof quality requirement
- System orientation
- Shading

Shading generally due to trees, but could be from power lines, roof vents, etc. Cultural resources and the homeowners preferences should be considered with any tree removal, and location of groundmount systems.







III. The SASH Program, Tribal Participation, and Project Process

- SASH Program Overview and Eligibility Requirements
- Tribal Participation in SASH
- Project Process and Timing
- Unique Tribal Considerations







# Single-family Affordable Solar Homes (SASH) Program Overview

Part of the California Solar Initiative



- Provides ratepayer-funded rebates to qualified low-income homeowners to reduce up front cost of solar
- Rebate covers much of the costs, often a financing GAP exists that is covered by Homeowner, GRID, or other funding source
- Incorporates a workforce development component into each installation
- Comprehensive low-income solar program, incorporates energy efficiency services, green jobs training, and promotes community engagement



#### SASH Program: Cumulative Projections





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#### SASH Program Eligibility Requirements

- Owner-Occupied Home
- Electric Service from PG&E, SCE, or SDG&E
- Qualified as Low-Income (Annual income is 80% or less of county's Area Median Income, AMI)
- Affordability Requirement (PU Code 2852 Compliant)











# SASH Program Funding and Timeline

- The SASH Program is structured to go through the end of 2015; or, until the pool of incentive dollars are encumbered.
- Presently funding is being reserved quickly, especially in PG&E territory, and it is likely that funding will be reserved in 2014.
- The SASH incentive may not cover the entire project cost. There may be a GAP funding requirement if the project cost is more than the available incentive.
- It is important to look now at other potential funding sources outside of SASH to both cover financing GAPs and continue affording lower-income families the opportunity to go solar.



#### SASH Program: Installed Projects

Map: Location of All SASH Applications by Zip Code



2,100 projects installed in 183 cities and 283 different zip codes in the 3 IOU territories since 2009.





#### SASH Program: Tribal Projects

Map: Installed SASH Projects on Tribal lands



73 Completed Projects for 10 CA Tribes

57 Additional Projects in Process for 12 CA tribes





#### SASH – Installation Options



GRID Alternatives Subcontractor Partnership Program

#### **GRID In-house Installation**

- Client works exclusively with GRID staff
- GRID installs system using volunteers and job trainees
- Homeowners can participate in their installation
- GRID provides 10-year warranty

#### **GRID Sub-contracting Partner** Installation

- Client works with GRID staff to apply, throughout the process, and for follow-up
- One of GRID's Sub-contracting Partners completes the site visit, and system installation
- The sub-contractor hires a Job trainee
- GRID provides 10-year warranty





# IV. Opportunities forCollaboration: Tribal Partnershipswith GRID Alternatives





- What GRID can Contribute
- Opportunities for Tribal Participation





# How does GRID finance solar projects?

- Leveraging Incentives SASH Program
- Partnerships with cities and municipalities, community colleges, affordable housing providers, and job training programs
- Fundraising
- Corporate Sponsorships
- Grants and Foundations
- In-kind Donations
- Homeowner Contributions





# What does GRID need from Tribes to continue to bring solar to communities?

- Identifying Funding Sources
  - □ In the immediate, funding for project GAPs, roofing issues or project costs
  - Longer-term, funding from other sources/programs
- Collaborating with GRID to incorporate residential solar funding requests into other Tribal funding/grant requests, related to:
  - Green Jobs Training/Workforce Development
  - Energy Efficiency
  - Renewable Energy
- Due to the length of time to apply and secure funding, it is important to start thinking now about future solar programs.



# How is GRID positioned to bring residential solar to tribes?



- **7 Regional offices** that cover all of California
- Successful, replicable model that could work in other states (first out-of-state expansion to Colorado in Sept 2012)
- Experience working with CA tribes and developing flexible procedures for their unique structure
- Due to tremendous interest from tribes in Northern California, GRID has recently hired a new Outreach Coordinator staff position for the North Coast region to focus primarily on tribal homeowners.
- Established partnerships with job training organizations, and energy efficiency providers, to create a comprehensive lowincome solar program.



#### In Summary....

- GRID Alternatives installs residential solar exclusively for lower-income families, using teams of volunteers and job trainees.
- The families GRID serves benefit by being able to both participate in the environmental movement and save tremendously on their electric costs.
- GRID has experience installing solar with numerous tribes in both Northern and Southern CA.
- To finance projects, GRID uses a mix of incentives, rebates, and fundraising.
- Tribes applying for funding/grants could consider including a residential solar program component and partnering with GRID to bring the benefits of solar to their residents.









#### V. Question and Answer Session

#### Thank you for your attention!





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