

BISHOP PAIUTE TRIBE 2015 RESIDENTIAL SOLAR PROGRAM

**Tribal Energy Program Review + May 4-7, 2015 + Denver, CO
May 6, 2015, 3:30 p.m.**

**Linda Akyüz, Grants Writer and Program Planner, Bishop Paiute Tribe
Lisa Castilone, Outreach Coordinator | Tribal Manager
GRID Alternatives Inland Empire**



**BISHOP PAIUTE TRIBE
and
GRID ALTERNATIVES, INLAND EMPIRE**

**“SASH 2.0”:
Photovoltaic Panels for 22 Low-Income-
Owned Homes**

Project Title: Bishop Paiute Tribe Residential Solar Program

Prime Recipient: Bishop Paiute Tribe

New Award

Goal:

Bishop Paiute Tribe will continue its successful model partnering with non-profit solar installer GRID Alternatives to build energy self-sufficiency on the Bishop Paiute Reservation

Objectives

- Install 22 grid-tied, net-metered rooftop solar electric systems on Tribal-member owner-occupied, single-family homes of low-income families on the Reservation with Tribal job trainees**
- New clean energy systems deployed will have at least 58 kW rated capacity**
- Energy displaced will be at least 60% of total electricity used (or 80,000 kWh/year or 856,000 kBtu/year)**

Impacts:

- **58 kW of new clean renewable energy on 22 low-income homes, displacing 60% of homes' total electricity used**
- **1,500 tons of greenhouse gases eliminated, equivalent to planting 35,650 trees**
- **\$490,000 in combined system lifetime cost savings for low-income homeowners**
- **20 Tribal job trainees prepared for solar installation entry-level work**
- **5% of Tribes' "unsolarized buildings" upgraded with solar**

Affordable energy for low-income families, on-site clean energy production, and hands-on solar installation training for Tribal workers will help build the Tribe's energy, economic, environmental, and social self-sufficiency and sovereignty amongst the most needy on the Reservation.

Total Project Costs: \$ 437,178

Total EERE Funds Requested: \$ 218,557

Total Cost Share: \$ 218,621

Principal Investigator: Brian Adkins, Bishop Paiute Tribe Environmental Management Office Director, (760) 873-3584 x 237, brian.adkins@bishoppaiute.org

Key Participant: GRID Alternatives, , 501(c)(3) non-profit solar installer; Business Contact: A. Bambi Tran, Inland Empire Regional Director, (951) 471-7045, btran@gridalternatives.org

Bishop Paiute Tribe



Eastern Sierra in California: East of the Sierra Nevada, westernmost part of the Great Basin; Owens Valley





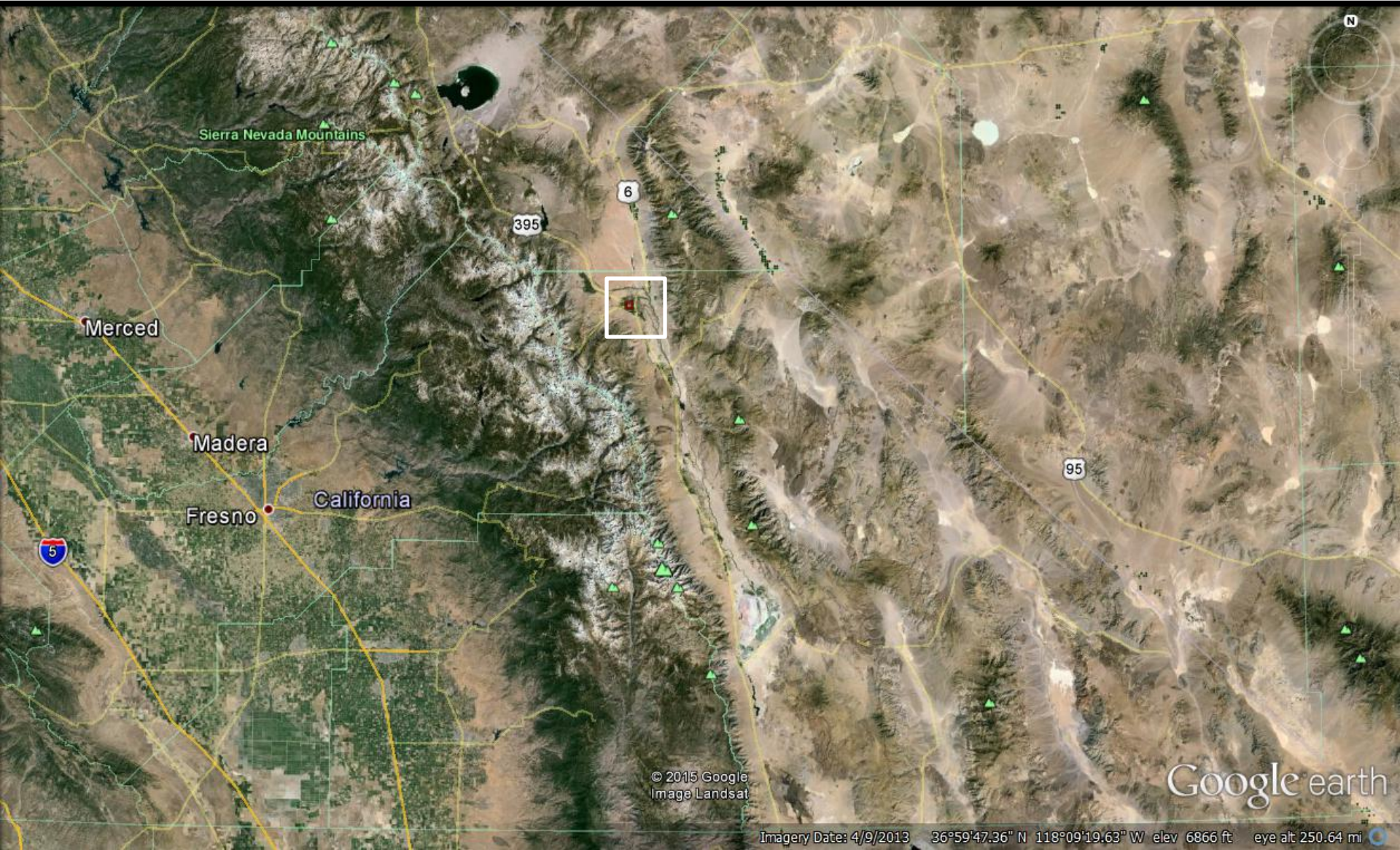
SPEED
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45



Bishop Paiute Reservation



Bishop Paiute Reservation

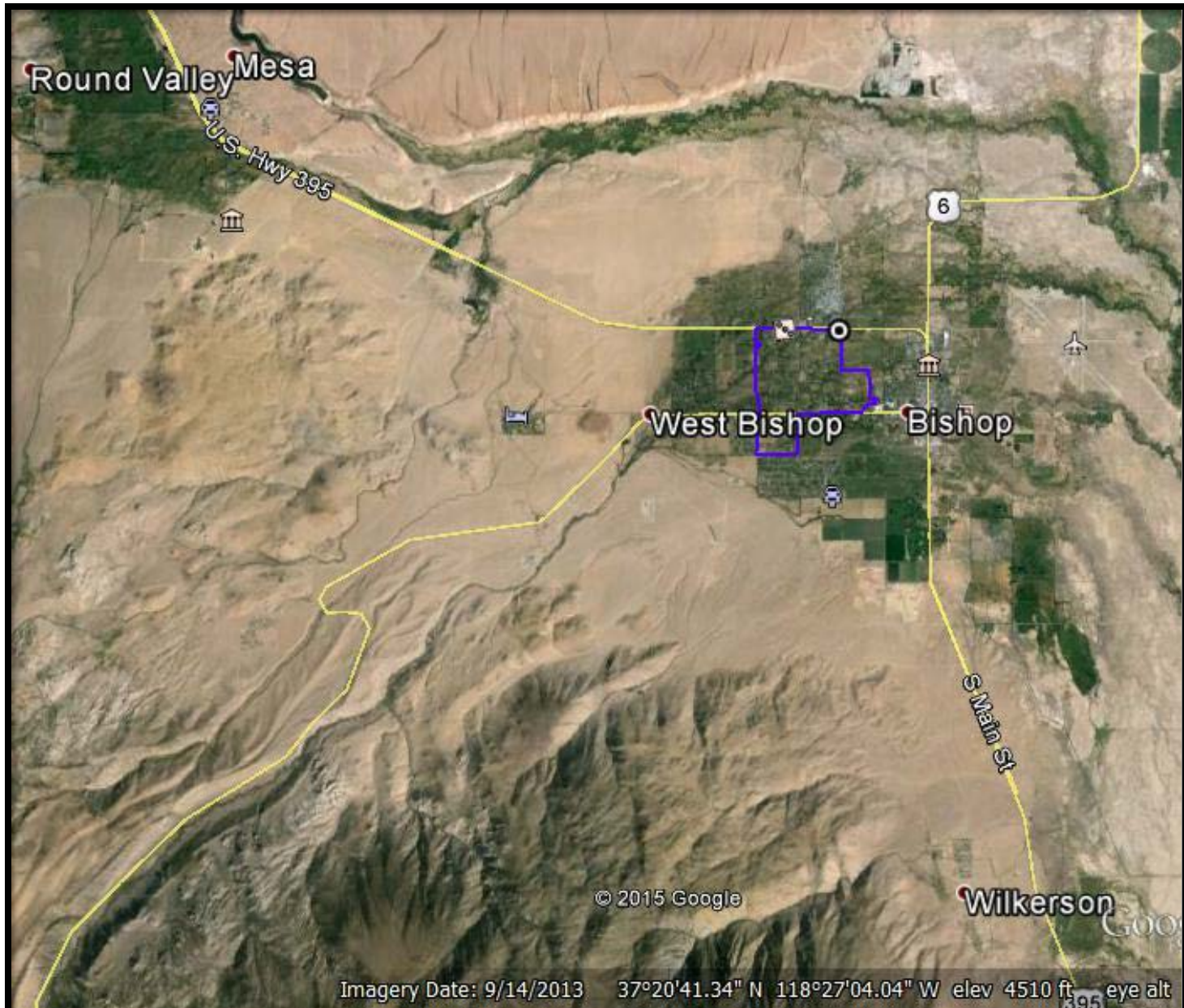


© 2015 Google
Image Landsat

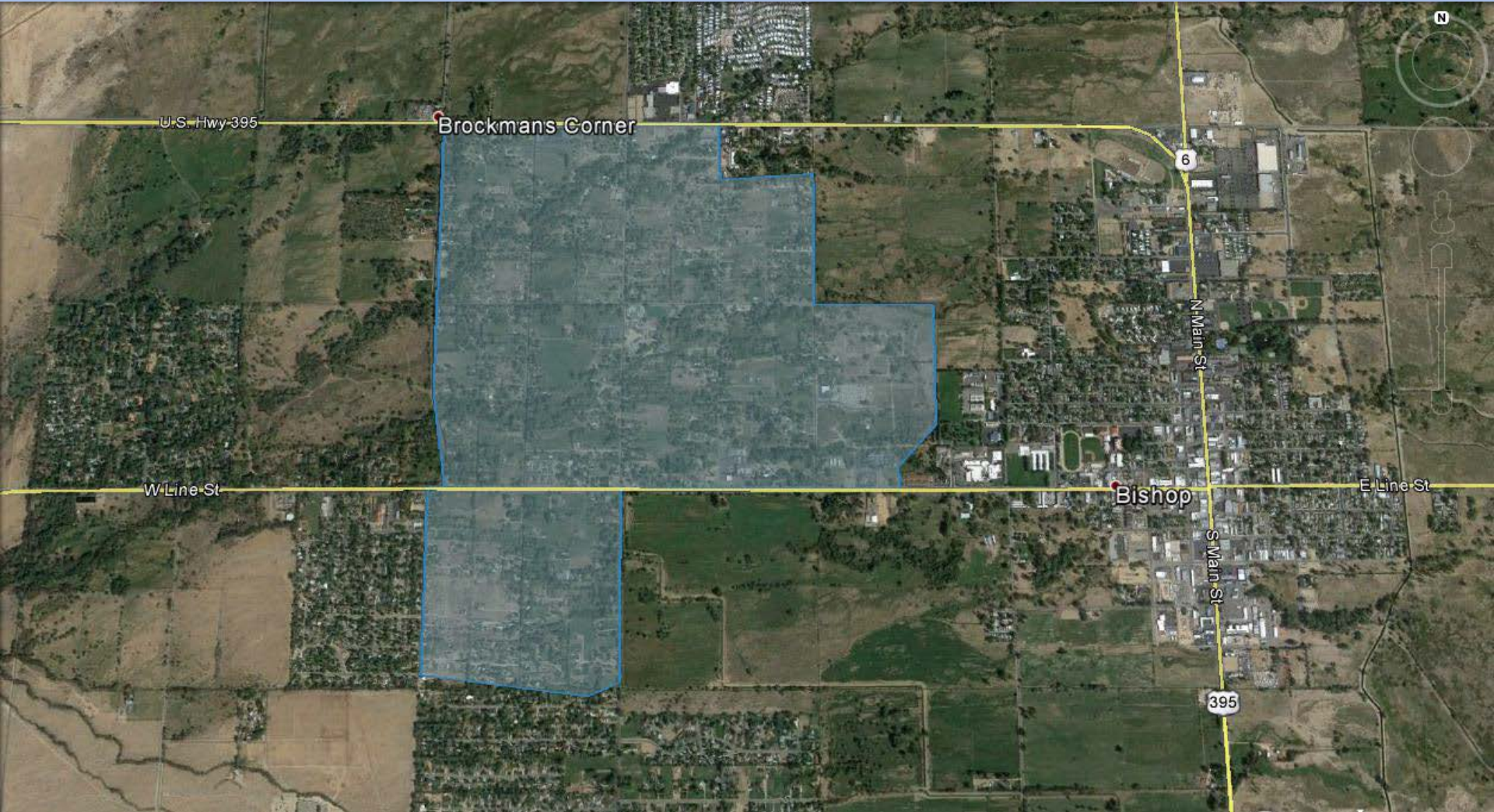
Google earth

Imagery Date: 4/9/2013 36°59'47.36" N 118°09'19.63" W elev 6866 ft eye alt 250.64 mi

Bishop Paiute Reservation



Bishop Paiute Reservation



Bishop Paiute Tribe

Descendants of the Nüümü, the original people of the Owens Valley: Valley Floor/Owens River, Mountains, Irrigation, Way of Life

1800s: outsider mining, ranching/agriculture

1912: The Federal Government reserved over 67,000 acres of lands in the Owens Valley for the original people of the area (Casa Diablo Reservation)

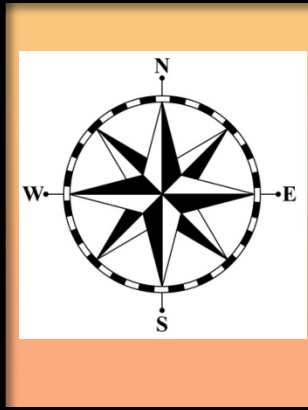
1912: Beginning of Los Angeles Aqueduct (William Mulholland)

Bishop Paiute Tribe

- 67,000 acres revoked and placed the in watershed protection status for the City of Los Angeles; Bishop Paiute Reservation
- Sunland Indian Reservation (80 acres) was southeast of where current Reservation is now.
<http://www.presidency.ucsb.edu/ws/?pid=76654>
- Bishop Paiute Reservation is one of three reservations set aside for the Owens Valley Paiute-Shoshone—Bishop, Big Pine, and Lone Pine: approximately 1,400 acres held in trust by the United States per Executive Order 1496, March 11, 1912
- Current 879 acres of the Bishop Paiute Reservation is part of that 1,400 acres
- “Land Exchange” with City of Los Angeles pursuant to the

Bishop Paiute Tribe

- 1,859 Tribal Members
- 1,750 Reservation Residents
- 1,257 Members live on the Reservation
- 92% Native American Households
- 80% Low-to-Moderate Income



Past, Present, Future Partnership



Bishop Paiute Tribe

<http://www.bishoppaiutetribe.com/>



Bishop Paiute Environmental Management Office

<http://www.bishoptribeemo.com/>

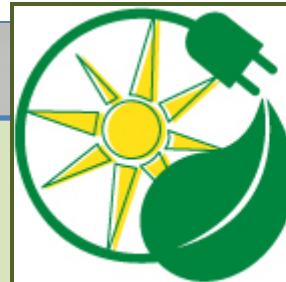


Bishop Paiute Tribal Employment Rights Office/Ordinance

<http://bishoptero.com/>

GRID Alternatives

<http://gridalternatives.org/ie>



GRID
ALTERNATIVES
Inland Empire

- **Who?**
Nonprofit solar contractor
- **What?**
Install solar electric systems exclusively for underserved communities
- **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



- Began managing CA's SASH program in 2009

Solar Affordable Housing Program



5521

Families
Served



18 MW

Installed
Capacity



\$116

Million in
Savings



15,000

Volunteers
Trained



407,472 tons
GHG prevented





Impact in Tribal Communities



- Working with over **23 tribes** throughout the United States
- Solarized **267 homes** saving families more than **\$9 million** in energy costs
- Installed over **1,069 kW** of renewable energy
- Offsetting over **25,500 tons of GHG**, equivalent to planting **676,000+ trees**
- **150+ projects** in process



GRID
ALTERNATIVES

Solar Industry Growth



- The National Solar Job Census 2013 states:
 - US Solar industry employs **142,698** individuals in solar
 - Addition of **23,682** new solar jobs in **2013**
 - **21.9%** growth rate since September **2013**
 - 10x faster than national avg. growth rate **1.9%**
- California leads the nation with:
 - Number of homes powered by solar **547,084**
 - Number of persons employed in solar **43,700**

Source: www.californiasolarstatistics.ca.gov and
www.thesolarfoundation.org

California Public Utilities
Commission
California Solar Initiative (CSI)

Single-Family Affordable Solar
Homes (SASH) Program

<http://www.cpuc.ca.gov/PUC/energy/Solar/sash.htm>

Single-Family Affordable Solar
Homes (SASH) Program

Single-Family Affordable Solar Homes (SASH) Program

SASH Program that provides solar incentives on qualifying affordable single-family housing. Goals:

- Decrease electricity usage by solar installation and reduce energy bills without increasing monthly expenses
- Provide full and partial incentives for solar systems for low-income participants

Single-Family Affordable Solar Homes (SASH) Program

- Offer the power of solar and energy efficiency to homeowners
- Decrease the expense of solar ownership with a higher incentive than the General CSI Program
- Develop energy solutions that are environmentally and economically sustainable

SASH Program

Fully or highly subsidized solar systems to qualified low-income homeowners

- **Fully subsidized** 1 kW system, homeowners must meet the legal definition of "low-income residential housing" in Public Utilities Code 2852. (Note: GRID systems range in size and are designed to meet 75% of past electrical usage. For the current project, the PV systems range in size but systems average around 2.6 kW (58kW for 22 homes)
- Eligibility: owner-occupied households that received electric service from the investor-owned utilities (Pacific Gas & Electric, Southern California Edison, and San Diego Gas & Electric); household income is at or below 50 percent of the area median income (AMI).

SASH Program

- To qualify for a **highly** subsidized solar system is determined by household income less than 80% AMI, housing stock eligibility, Federal Income Tax liability, and eligibility for the California Alternative Rates for Energy (CARE) Program.



Solar Affordable Housing Program



- 1. PEOPLE:** Low-income homeowners ($\leq 80\%$ of AMI)
- 2. PLANET:** Grid-tied solar electric systems
- 3. EMPLOYMENT:** Hands-on training for volunteer installers

- Turnkey Approach: Application, energy education, solar design, permitting, financing, procurement, installation (barn-raising model), inspection, quality assurance, rebate and utility interconnection paperwork, long-term warranties
- Local community engagement
- Homeowner sweat equity/ investment
- No or very low cost to Participants



Bishop Paiute Tribe Impact (as of 2/10/2015)

- 31 Families Solarized
- Over \$566,600 invested in the jurisdiction
- Over 710 hours of job training provided
- 102 kW of clean energy installed
- \$864,863 of savings to the families (over 30 years)
- 2,669 tons of greenhouse gases prevented in the atmosphere
 - Equivalent to taking 475 cars off the road for 1 year
 - Equivalent to planting 62,754 trees





Kick-off solar installation of Bishop Paiute Tribe and GRID Alternatives Partnership



Bishop Paiute job trainees receiving hands-on solar training from GRID Alternatives

GRID conducts hands-on training (annual)

Subcontractor Partnership Program (SPP) contractor installs (GRID manages)

<http://www.energy.gov/indianenergy/articles/solar-viewed-triple-boon-bishop-paiute-tribe>

SPP program gives an ongoing opportunity to hire qualified Tribal members.

The annual training provides the skills necessary to be hired.

The DOE grant has allowed doubling annual hands-on training component of our project from 5 homes (approximately 10 job trainees per year over the last two years) to 22 homes (objective: 20 job trainees/yr), giving the Tribe a new increased capacity to provide labor and more SPP builds for tribal homeowners.

Bishop Paiute Tribal Employment Rights Office (TERO)

- Training for TERO
Workforce (Volunteers)
- TERO Compliance and Fee

DOE Bishop Paiute Tribe Residential Solar

- 22 Low-Income-owner-occupied homes
- Rooftop Solar systems tied to Southern California Edison

New California SASH Rebate Program

- Offers 50% rebate, rather than 100%
- Tribe covers 50% of costs to GRID through DOE Grant
- GRID recovers 50% of costs through rebate
- In-kind \$9,000 Tribal Volunteer Hours (Training)

DOE Bishop Paiute Tribe Residential Solar

- **Months 1-5**: Homeowner clients re-qualified and educated.
- **Months 6-14**:
 1. System design site visits conducted.
 2. Systems designed.
 3. Homeowner client contracts signed.
 4. Solar rebates reserved.
 5. Interconnection and net-metering application submitted.
 6. TERO Compliance Plan and fee completed. Equipment and materials procured. Systems installed (about one/day). Volunteers trained and supervised.

DOE Bishop Paiute Tribe Residential Solar

- **Months 9-21**: Systems interconnected (clients received Permission to Operate [PTO])
- **Months 12-28**: Warranty training provided. Systems performance verified.
- **Months 29-30**: Final reports completed.

DOE Bishop Paiute Tribe Residential Solar

Progress so far:

- **NEPA Categorical Exclusion Determination (less than 10 Acres total rooftop solar: no new construction)**
- **Pre-authorized homeowners**
- **Submitted pre-award paperwork**

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**Grant Writer (Assisted): Linda Akyüz, Bishop Paiute Tribe Grant
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