



BISHOP PAIUTE TRIBE RESIDENTIAL SOLAR PROGRAMS



**Brian Adkins
Environmental Management Office
Bishop Paiute Tribe**

**Lisa Castilone
GRID Alternatives Inland Empire**

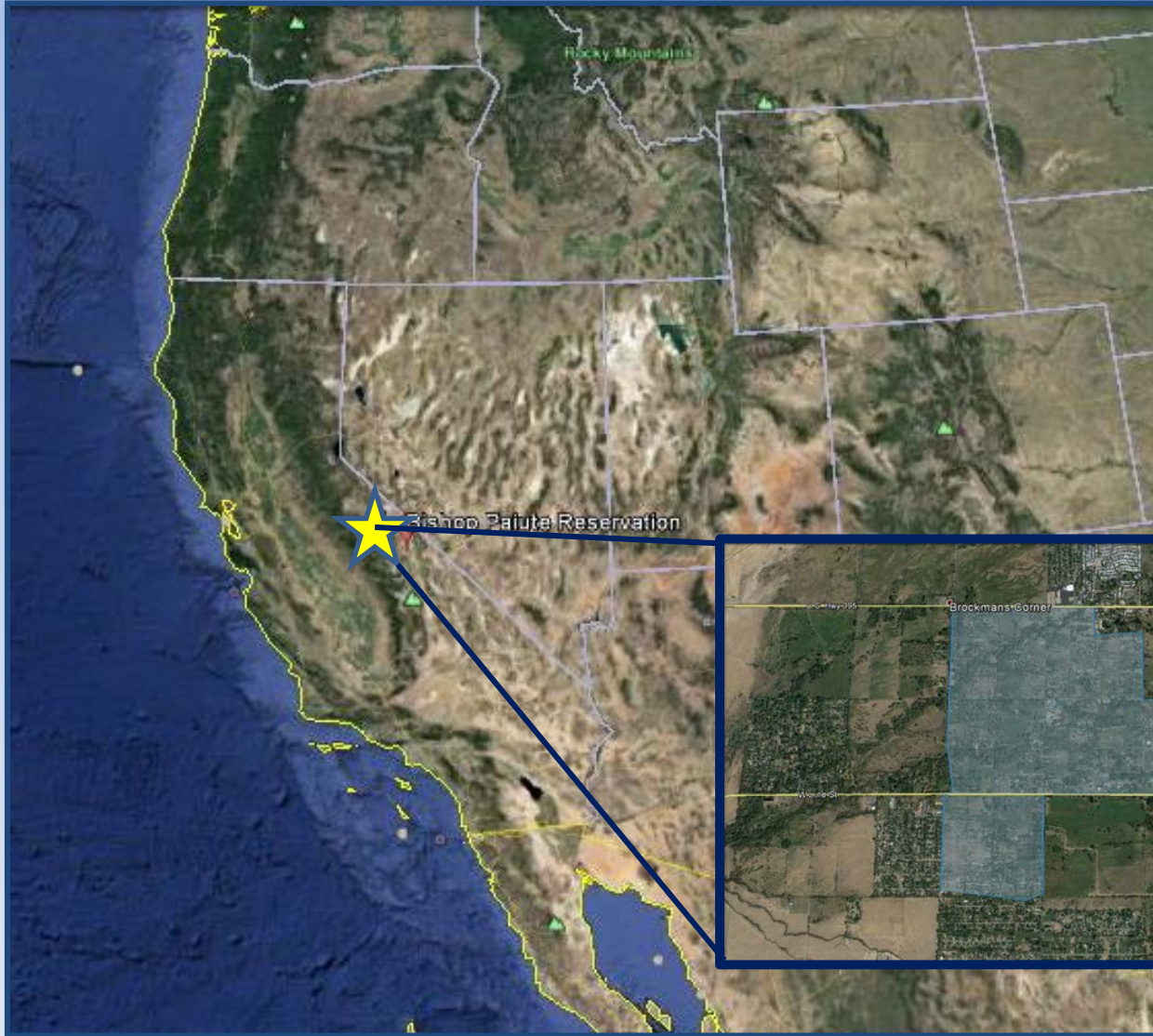
**2016 Office of Indian Energy Program Review
November 14-17, 2016**

Bishop Paiute Tribe

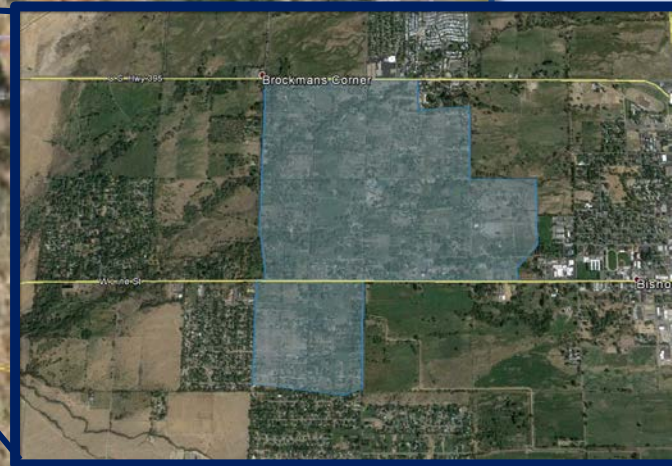


- **Descendants of the "Nu-Mu," of the Owens Valley**
- **Aboriginal land: Eastern Sierra: Owens Valley and Mono Basins**
- **Energy Demand: Homes, Community and governmental facilities, preschool and Ed Center; health clinic, museum, casino, domestic water pumping**

Bishop Paiute Reservation



- Created 1938 Land Exchange
- 879 Acres Trust
- Pop 2000
- 80% low-mod income



Bishop Paiute Tribe



ENERGY VISION

Achieve energy self-sufficiency while....

- *preserving cultural traditions,*
- *protecting the environment,*
- *developing the economy, and*
- *sustaining the efficient use of resources.*

Bishop Paiute Tribe



2015 Tribal Strategic Energy Plan – by 2020:

Goal: Serve ½ of eligible households: Target: 200 systems

- *Single family homes: 490*
- *Low-income qualification rate: 81%*
- *Total potential eligible households: 400*



2001: Founded by Erica Mackie and Tim Sears

2004: First install – San Francisco, California

2005- 2011: Expanded to 7 California offices, serving the entire state

2012: Expanded to Colorado

2013: Expanded to New York Tri-State region

2014: Expanded to Mid-Atlantic region and Nicaragua

2015: Launched RISE Initiative and expanded National Tribal Program

2016: Nepal Pilot Program





Solar Affordable Housing Program



SASH provides partial solar incentives for solar systems for low-income participants.

1. **PEOPLE:** Low-income homeowners ($\leq 80\%$ of AMI) homeowner or tribal land in trust
2. **PLANET:** Grid-tied solar electric systems to reduce energy bills
3. **EMPLOYMENT:** Hands-on solar job training for volunteer installers





GRID provided

- Initial review of tribal energy goals
- Applications, contracts, warranties
- Training for volunteers
- TERO compliance
- 3rd party inspection



Tribe provided

- MOU
- Homeowner outreach
- Volunteer trainees
- In kind donations
- Letter of support for AB217

Build Schedule: BPT Low-Income Residential Solar Program

Phase	Status	Training Builds	SPP Builds	Running Total Builds	Goal 200 builds by 2020
SASH 1	Completed	14	48	62	15%



- 22 Income qualified, owner-occupied homes
- Rooftop Solar PV systems tied to SCE utility
- \$437,147 Total Project Cost
- Non-federal share
 - 48% SASH rebate covered to GRID in a rebate (\$209,621)
 - 2% Tribal Trainee hours (\$9,000 in kind)
- Federal share
 - 50% DOE Clean Energy (\$ 218,574)



• **Months 1-5:** Homeowner selection, qualified and educated on program and EE

• **Months 6-14:**

1. Site visits conducted
2. PV systems designed
3. Homeowner client contracts signed
4. Solar rebates reserved
5. Interconnection process begins
6. TERO Compliance Plan and permits
7. Equipment and materials procured
8. Systems installed (about one per day)
9. Volunteers trained and supervised
10. Installed 22 net-metered rooftop systems
11. Trained 20 tribal job trainees

Total deployed rated capacity of 58 kW

At least 60% of total electricity used displaced by system or 80,000 kWh/year



- **Months 9-21:**
Interconnection
with utility
- **Months 12-28:**
Warranty training,
utility bill reviewed
and systems
performance
verified
- **Months 29-30:**
Final reports done





SASH 2- Phase 1



Build Schedule: BPT Low-Income Residential Solar Program

Phase	Status	Training Builds	SPP Builds	Running Total Builds	Goal 200 builds by 2020
<u>2013 - 2015</u>					
SASH 1 204 kw	Completed	14	48	62	15%
SASH 2 – Phase 1 <i>DOE Clean Energy</i>	Completed	22	-	84	21%

- 34 Income qualified, owner-occupied homes – **120 kw**
- Rooftop Solar
- PV systems tied to SCE utility
- **Sub-Contractor Partnership (SPP)** - local licensed PV contractors partner with GRID
- GRID requires SPP to hire 1-2 job trainees per installation
- SPP's are vetted
- Installs are inspected by an independent 3rd party

- Total Project Cost: \$ 683,635
 - Non-federal share: \$ 341,818 (50%)
Source: SASH rebate covered to GRID in a rebate
 - Federal share \$ 341,818 (50%)
Source: DOE Clean Energy





SASH 2- Phase 2



Build Schedule: BPT Low-Income Residential Solar Program

Phase	Status	Training Builds	SPP Builds	Running Total Builds	Goal 200 builds by 2020
<u>2013 - 2015</u>					
SASH 1	Completed	14	48	62	15%
2016					
SASH 2 – Phase 1 <i>DOE Clean Energy</i>	Completed	22	-	84	21%
<u>2017</u>					
SASH 2 – Phase 2 <i>DOE Clean Energy</i>	Underway	-	34	118	30%



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

Training and Apprenticeships



Solar Futures



**TERO Placements – Volunteer Training
1080 job site hours – SASH 2 – Phase 1**



SASH 2- Next Phases



Build Schedule: BPT Low-Income Residential Solar Program

Phase	Status	Training Builds	SPP Builds	Running Total Builds	Goal 200 builds by 2020
<u>2013 - 2015</u>					
SASH 1	Completed	14	48	62	15%
<u>2017</u>					
SASH 2 – Phase 1 <i>DOE Clean Energy</i>	Completed	22	-	84	21%
<u>2017</u>					
SASH 2 – Phase 2 <i>DOE Clean Energy</i>	Underway	-	34	118	30%
<u>2018</u>					
SASH 2 – Phase 3	Pending funding	5	40	163	42%



SASH 2- Next Phases



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SASH 1	Completed	14	48	62	15%
<u>2017</u>					
SASH 2 – Phase 1 <i>DOE Clean Energy</i>	Completed	22	-	84	21%
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SASH 2 – Phase 2 <i>DOE Clean Energy</i>	Underway	-	34	118	30%
<u>2019</u>					
SASH 2 – Phase 3	Pending funding	5	40	163	42%
SASH 2 – Phase 4	Pending funding	5	42	200	50%



SASH 2- Next Phases



Build Schedule: BPT Low-Income Residential Solar Program

Phase	Status	Training Builds	SPP Builds	Running Total Builds	Goal 200 builds by 2020
<u>2013 - 2015</u>					
SASH 1	Completed	14	48	62 (204kw)	15%
<u>2017</u>					
SASH 2 – Phase 1 <i>DOE Clean Energy</i>	Completed	22	-	84 (221kw)	21%
<u>2017</u>					
SASH 2 – Phase 2 <i>DOE Clean Energy</i>	Underway	-	34	118 (382kw)	30%
<u>2018</u>					
SASH 2 – Phase 3	Pending funding	5	40	163 (575kw)	42%
<u>2019</u>					
SASH 2 – Phase 4	Pending funding	5	42	200 (700kw)	50%

ENVIRONMENTAL IMPACT

	Greenhouse Gasses Diverted (Tons)
SASH 1	5,000
SASH 1: Phase 1	1,500
SASH 1: Phase 2	2,500
TOTAL	9,000



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



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