



# **BISHOP PAIUTE TRIBE RESIDENTIAL SOLAR PROGRAMS**



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Bishop Paiute Tribe**

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**2022 Office of Indian Energy Program Review  
November 17, 2022**

# 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 Strategic Energy Goal: serve ½ of eligible households w/ PV solar by 2020**

- **Single family homes: 490 in 2015.....**
  - **Low-income qualification rate: 81%.....**
    - **Eligible households: 400**
- **Goal: 50% (200 homes) served by 2020**





# 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



## Nation's Largest Solar Non-Profit Clean Energy Installer

1. Develop & Management Projects
2. Certified hands-on job training
3. Provide community development with EE
4. Funding Opportunities

Single Family, Multi-Family, Commercial,  
Community Scale, Micro Grid / Battery

Clean Mobility: Access Clean California  
[accesscleanca.org](http://accesscleanca.org)

Tribal Project Funding:  
Tribal Solar Accelerator Fund (TSAF)  
[tribalsolar.org](http://tribalsolar.org)





# Solar Affordable Housing Program



CA funded SASH 1 provided full funding for solar

SASH 2 provided partial funding = DOE partnership began



GRID Triple Bottom Line

- 1. PEOPLE**
- 2. PLANET**
- 3. EMPLOYMENT**



## GRID provides

- Funding
- Turnkey installations
- Community Outreach
- Job training
- TERO compliance
- 3<sup>rd</sup> party inspection



## Tribe provided

- Collaboration on grants
- MOU
- Help w community outreach



# GRID Program Steps

**Community Outreach**

**Installation**

**Hands on Job Training**

**Inspection & Completion**

**Warranty**

**Grant Reporting**



## Build Schedule: BPT Low-Income Residential Solar Program

Phase	Status	Training Builds	SPP Builds	Running Total Builds	Goal 200 builds by 2020
SASH 1	214 kW Completed	14	48	62	15%



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<u>2013 - 2015</u>					
SASH 1 204 kw	Completed	14	48	62	15%
<u>2016</u>					
<b>SASH 2 – Phase 1</b> <i>DOE Clean Energy</i>	<b>67 kW Completed</b>	<b>22</b>	<b>-</b>	<b>84</b>	<b>21%</b>



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



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<u>2013 - 2015</u>					
SASH 1	214 kW Completed	14	48	62	15%
<u>2016</u>					
SASH 2 – Phase 1 <i>DOE Clean Energy</i>	67 kW Completed & Monitoring	22	-	84	21%
<u>2017</u>					
<b>SASH 2 – Phase 2</b> <b><i>DOE Clean Energy</i></b>	<b>126kW Completed &amp; Monitoring</b>	-	<b>35</b>	<b>119</b>	<b>30%</b>





- Phase 1: Eight (8) interns
  - Location: Bishop Reservation
  - 40 hours of classroom training
  - 5 rooftop installations (Summer 2018)



- Phase 2: Three (3) interns
  - Location: Riverside (Fall 2018)
  - 170 hours of training

Cynthia Corrales,  
GRID project lead  
with  
Kanyon Martinez,  
Bishop Tribal  
Member and GRID  
Fellow



- Phase 3: One (1) intern
  - Location: Riverside/Reservation (2019)
  - One (1) year fellowship with GRID

*Funding: US Dept of Energy "First Steps" grant opportunity - 2018*

➤ **Since 2013 GRID has trained 60 Bishop tribal members = 2600 hours**





# First Steps Training



Phase	Status	Training Builds	SPP Builds	Running Total Builds	Goal 200 builds by 2020
<u>2013 - 2015</u>					
SASH 1	214 kW Completed	14	48	62	15%
<u>2016</u>					
SASH 2 – Phase 1 <i>DOE Clean Energy</i>	67 kW Completed & Monitoring	22	-	84	21%
<u>2017</u>					
SASH 2 – Phase 2 <i>DOE Clean Energy</i>	123kW Completed & Monitoring	-	35	119	30%
<b><u>2018</u></b>					
<b>SASH 2 – First Steps – Youth Solar Training</b>	<b>15kW Completed</b>	<b>5</b>		<b>124</b>	<b>31%</b>



# Phase 3



Phase	Status	Training Builds	SPP Builds	Running Total Builds	Goal 200 builds by 2020
<u>2013 - 2015</u>					
SASH 1	214 kW Completed	14	48	62	15%
SASH 2 – Phase 1 <i>DOE Clean Energy</i>	67 kW Completed & Monitoring	22	-	84	21%
<u>2017</u>					
SASH 2 – Phase 2 <i>DOE Clean Energy</i>	123kW Completed & Monitoring	-	34	118	30%
<u>2018</u>					
SASH 2 – First Steps – Youth Solar Training	15kW Completed	5		123	31%
<b>SASH 2 – Phase 3</b> <i>DOE Clean Energy</i>	<b>127 kW Completed</b>	8	32	<b>164</b>	<b>41%</b>

## 19 Tribal Homes 67 kw Rooftop, grid tied solar system

**Sub-Contractor Partnership (SPP)** vetted, local contractors partner with GRID, hire 1-2 trainees, all projects are inspected by 3<sup>rd</sup> party

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**Status: 19 (all) systems installed!! (Fall 2021)**

**Total Project Cost: \$ 332,214**

- Non-federal share: \$189,887 (57%)  
*Source: SASH rebate*
- Federal share \$ 142,327 (43%)  
*Source: DOE Clean Energy*



*Courtney Taylor Tribal trainee, completed 33 hours of training in first 3 installations!*





Estimated Solar Savings	
Estimated Savings from Solar (1 <sup>st</sup> year)	\$407.66
Estimated Savings from Solar (20 years) <sup>1a</sup>	\$9,810.33
Estimated Annual Bill Reduction from Solar	67%
Annual Electric Bill <u>Before</u> Solar	\$610.23
Estimated Annual Electric Bill <u>After</u> Solar <sup>1b</sup>	\$202.57



Solar System Details and Production	
Solar System Size	2.065 kW DC
Historic Electric Usage (pre-solar)	3095 kWh
Annual Solar Production	3047 kWh
Your Original Rate Schedule	TOU-D-5-8PM
Your New Rate Schedule <sup>4a</sup>	TOU-D-5-8PM-NEM2



Estimated Environmental Impacts Over Solar System Lifetime	
Equivalent Number of Tree Seedlings Planted	808
Equivalent Number of Cars Taken off the Road	7
Greenhouse Gas Emissions Prevented	34.74 tons of CO2



# Phase 4 completed



Phase	Status	Training Builds	SPP Builds	Running Total Builds	Goal 200 (50%) builds by 2020
<u>2020-2021</u>					
<b>SASH 2 – Phase 4</b> <i>DOE Clean Energy</i>	19 installs funded 241 kW Planned	3	16	183	45%



# Current & Future Phases



Phase	Status	Training Builds	SPP Builds	Running Total Builds	Goal 200 (50%) builds by 2020
<b><u>2020-2021</u></b>					
SASH 2 – Phase 4 <i>DOE Clean Energy</i>	19 installs funded 241 kW Planned	3	16	183	45%
<b><u>2021-2022</u></b>					
<b>SASH 2 – Phase 5</b> <i>ARPA Solar 5</i>	<b>Funded ARPA</b> 24 homes 92 kW	3	21	207	(52%)





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**Goal met in 2022!**





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SASH 2 – Phase 5 <i>ARPA Solar 5</i>	Funded ARPA 24 homes 92 kW	3	21	207	(52%)

**Goal met in 2022!**



# Bishop Paiute Tribe



Project	Installs	Kilowatts installed
Phase 0	62	214 KW
Phase 1 & 2	57	193 KW
Solar Futures	5	15 KW
Phase 3	40	127 KW
Phase 4	19	67 KW
Phase 5	24	92 KW
<b>Total</b>	<b>207</b>	<b>708 KW</b>



*Photo: 1st rooftop solar installation – 2013*

**Goals 200 by 2020    400 by 2025**

# Bishop Paiute Tribe



	Cumulative Carbon reduced over system life (tons)
Non DOE	4,827
DOE	6,249
<b>Total</b>	<b>11,076</b>



*Photo: 1st rooftop solar installation – 2013*

**Goals 200 by 2020    400 by 2025**



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**Key Participant: Lisa Castilone, Tribal Program Manager, GRID Alternatives; (951) 471-7047 [lcastilone@gridalternatives.org](mailto:lcastilone@gridalternatives.org)**



**THANK YOU!**



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