



San Diego Tribal Energy Collaborative

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Overview

- ▶ Project Objectives
- ▶ The Partners
- ▶ Project Status
- ▶ How did we get here?
- ▶ What does collaboration look like on the ground?



Project Objectives

DOE Deployment of Clean Energy & Energy Efficiency on Indian Lands

- ▶ 42 grid-tied, solar electric systems
 - ▶ Design, install, inspect, interconnect and maintain
 - ▶ 40 low-income single-family homes
 - ▶ San Pasqual, La Jolla, and Mesa Grande reservations
 - ▶ 2 community systems
 - ▶ San Pasqual tribal education facility and the La Jolla tribal community center
- ▶ 20 Community volunteers and Tribal job trainees
 - ▶ Assist with the installations, gaining valuable hands-on experience

Further Details

- ▶ Not “off the grid”
- ▶ Net metering - still tied into the grid
- ▶ No battery backup -
blackout = power outage to the home
- ▶ Homeowners see a 35% to 75%
reduction in their electrical usage
- ▶ 3rd party inspector verifies all work
completed by GRID before the system
can be energized



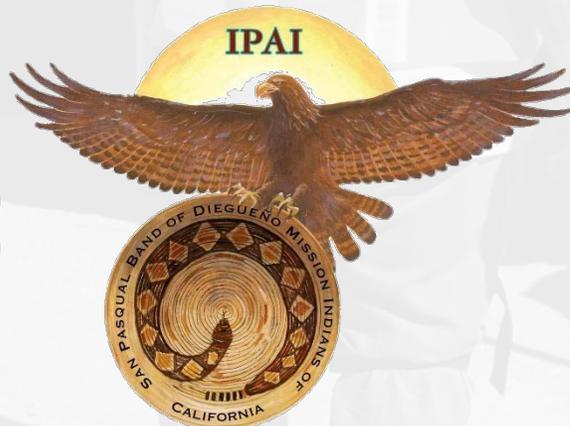


How did we get here?

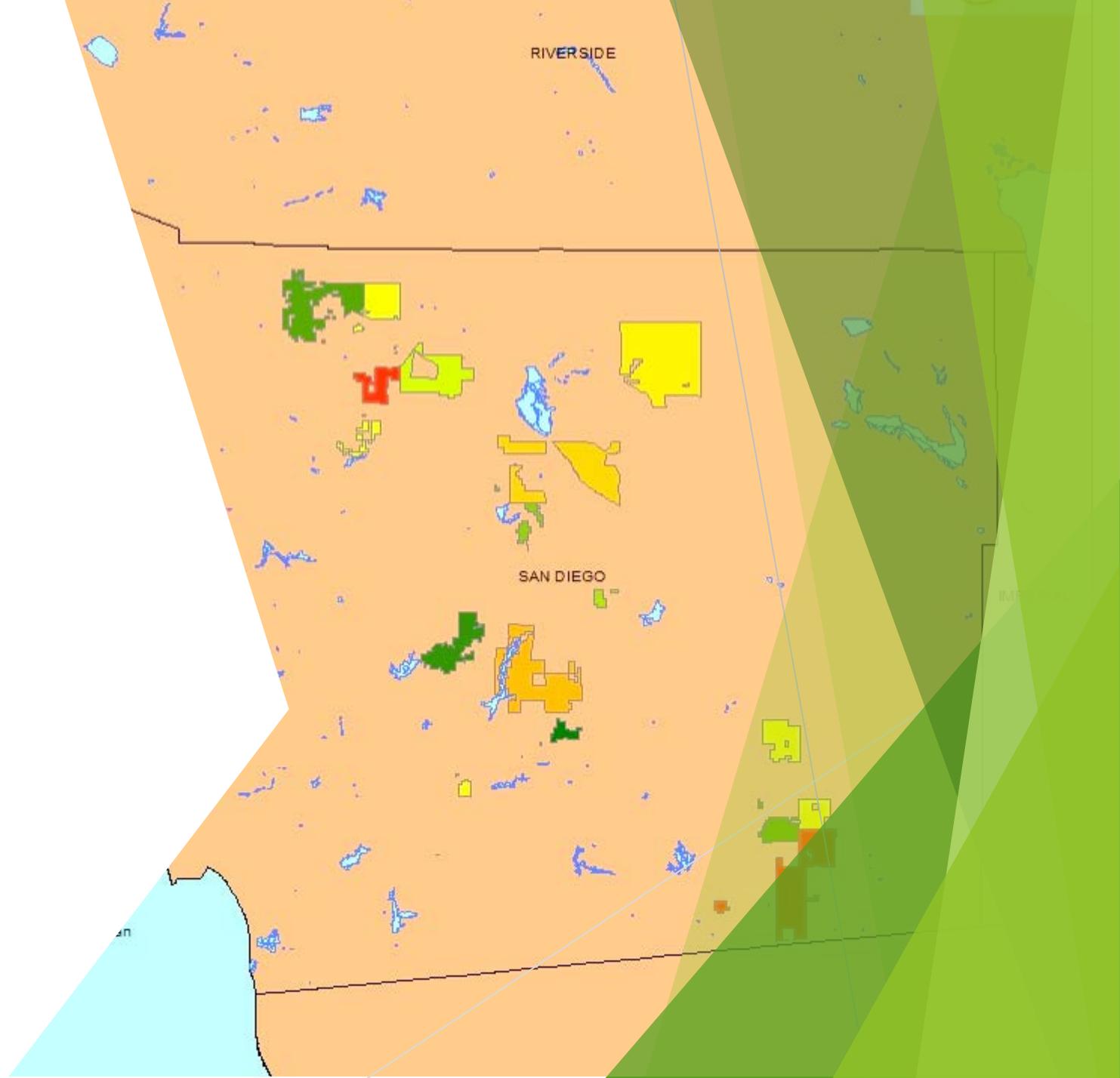
- ▶ **July 2010:** Southern California Tribal Chairman's Association meeting
- ▶ **April 2011:** First installation with La Jolla Band
- ▶ **2011 - 2017:** 110 installations with the 3 tribal partners (121 tribal installs)
- ▶ **2015:** Tekamuk Energy job training effort
- ▶ **2016-2019:** Granted DOE funding

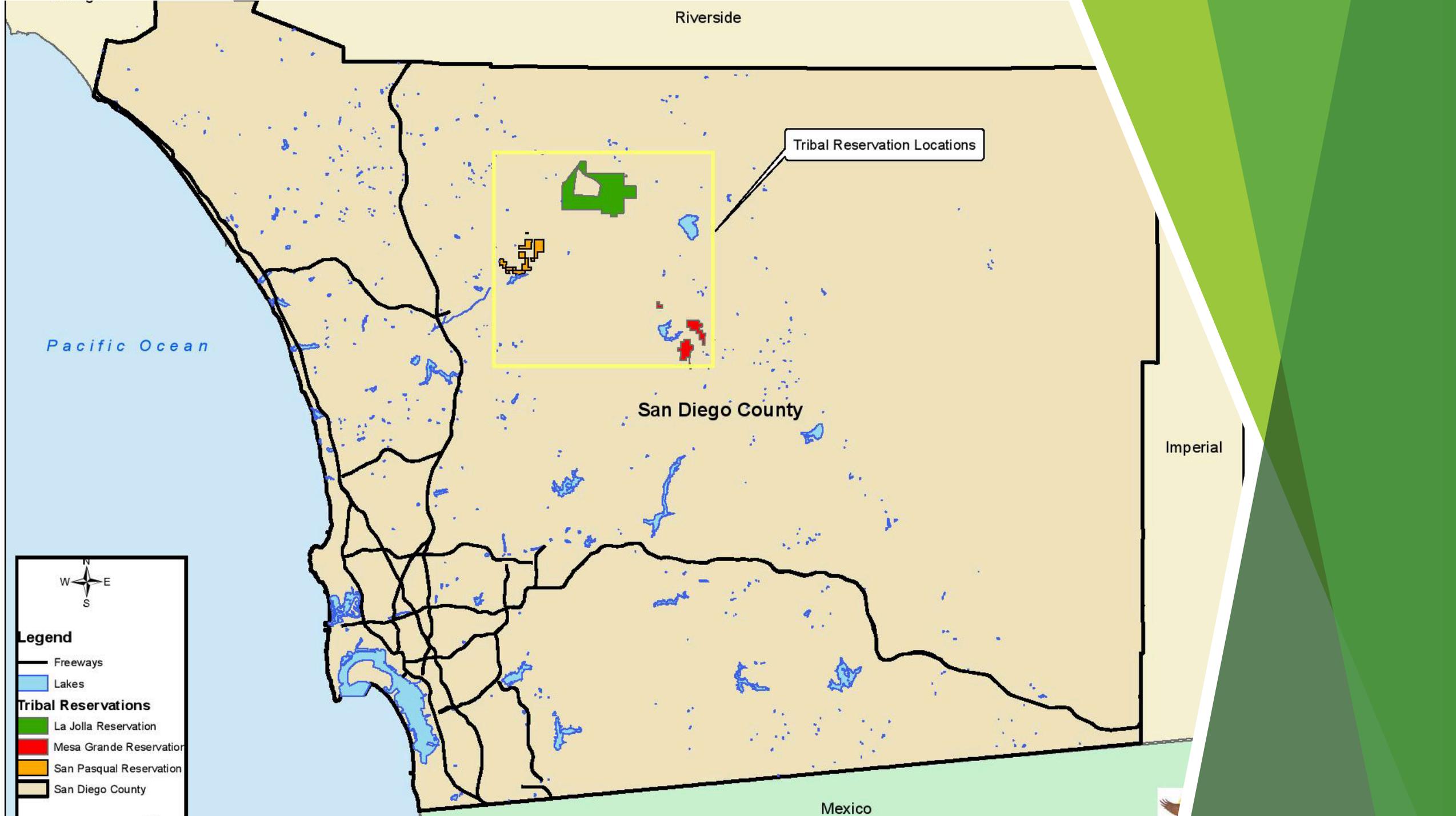
Project Partners

- ▶ La Jolla Band of Luiseño Indians
- ▶ Mesa Grande Band of Mission Indians
- ▶ San Pasqual Band of Mission Indians
- ▶ GRID Alternatives - San Diego



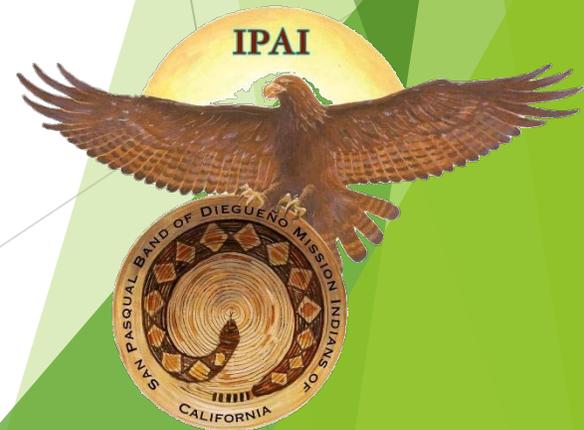
San Diego County 18 Tribal Nations





San Pasqual General Information

- ▶ Established in 1910
- ▶ The Reservation encompasses approximately 2,956 acres
- ▶ 250 Tribal members and over 1,200 lineal descendants
- ▶ Reservation population is 1,600
- ▶ 395 homes on the reservation
- ▶ 61 homes have solar
 - ▶ 56 GRID
 - ▶ 15 DOE
 - ▶ 5 installed by private solar companies



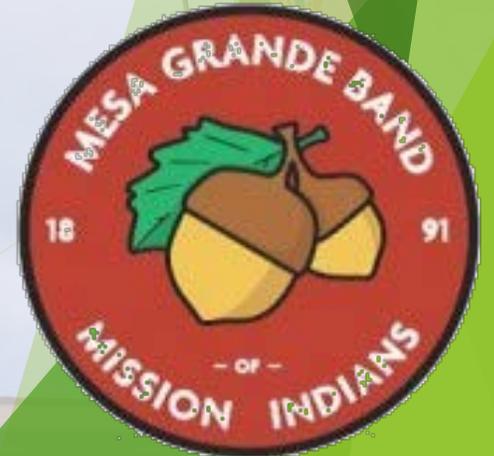
La Jolla General Information

- ▶ Establish by Executive Order in 1875
- ▶ 8,822 acres of land
- ▶ 700 tribal members
- ▶ Reservation population is 650
- ▶ 203 homes on the reservation
- ▶ 57 homes have solar
 - ▶ 39 GRID
 - ▶ 12 DOE
 - ▶ 13 AMIHA
 - ▶ 5 installed by private solar companies



Mesa Grande General Information

- ▶ Established by Executive Order in 1875
- ▶ 1,820 acres of land
- ▶ 620 Adults, over 800 children
- ▶ Reservation population is 130
- ▶ 48 homes on the reservation
- ▶ 14 homes have solar
 - ▶ 12 GRID
 - ▶ 5 DOE
 - ▶ 2 installed by private solar companies



GRID Alternatives

- ▶ GRID makes solar technology and job training accessible to underserved communities
- ▶ Work with tribal communities thru GRID's 10 local offices and thru our Tribal Program based in Denver, which works with tribes not served by regional offices
- ▶ 571 tribal families served, 2.50 MW installed, which will produce \$23M of energy
- ▶ Over 481 Native American volunteers



Project Outcomes So Far

- ▶ **31 (42)** grid-tied solar electric systems, totaling **117 kW**
- ▶ Generate over **\$1.8M** worth of power for low-income families over the next 20 years
 - ▶ **492** Equivalent cars taken off the road
 - ▶ **59,945** Equivalent of trees planted
 - ▶ Eliminated **2,577** tons of greenhouse gas emissions
- ▶ Provide hands-on solar installation training to at least **17** Tribal community volunteers and job trainees





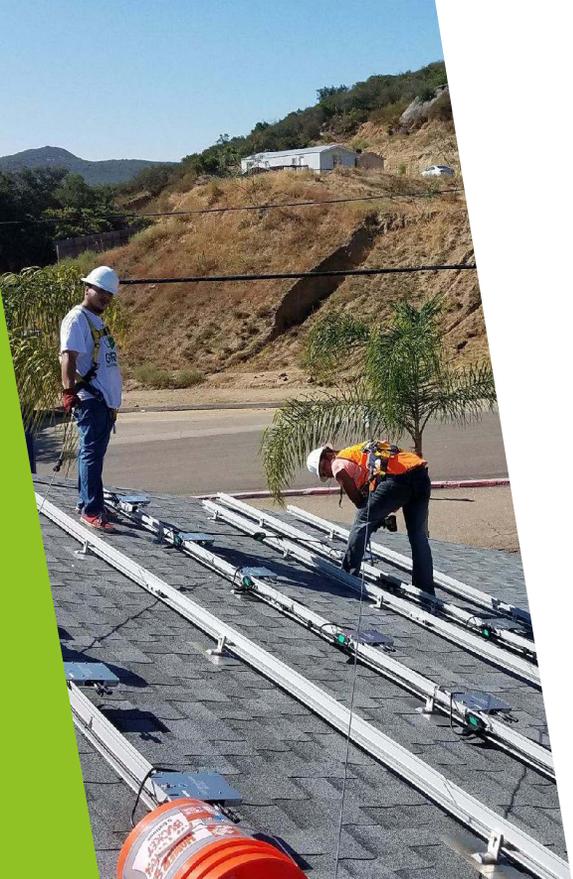
Project Status

Accomplishments & Remaining Projects

- ▶ 40 Single-Family Homes
 - ▶ San Pasqual, La Jolla, and Mesa Grande reservations

Tribe	SP	LJ	MG	Totals
Projected	20	15	5	40
Ground Mounts	7	5	0	12
Roof Mounts	7	7	5	19
Remaining	6	3	0	9

- ▶ Homeowners educated on energy efficiency and renewable energy



Project Outcomes - Tribal Buildings

- ▶ La Jolla Tribal Administration Building and the San Pasqual Education Facility have been solarized

- ▶ Annual Savings

- ▶ 68% San Pasqual
- ▶ 61% La Jolla

- ▶ Totaling 33.9 kW

- ▶ 142 Cars taken off the road
- ▶ 17,423 Equivalent number of trees
- ▶ 749 Tons of carbon reduced





Project Status

Accomplishments & Remaining Projects

- ▶ **Community Volunteers & Tribal Job Trainees**
 - ▶ Provided hands-on solar installation training to at least 17 (20) Tribal community volunteers and job trainees
 - ▶ **5,171** Total hours of volunteers and trainees
 - ▶ **133** Number of individuals who participated
 - ▶ **17** Tribal members
 - ▶ **1784** Total hour of Tribal OJT (On the Job Trainees) and volunteers
- ▶ **3 more volunteer and OJT need to be trained**

On the Job Training

- ▶ Utilized Resources from Organizations in our community to create OJT opportunities.
 - ▶ CIMC, On the Job Training 50% Pay Match
 - ▶ \$500.00 incentive for equipment upon training competition
 - ▶ TRIBAL TANF, On the Job Training 50% Pay Match
 - ▶ \$1000.00 incentive for equipment upon training competition
 - ▶ TRIBAL TERO DEPARTMENT
 - ▶ Contributed to Tribal Pay Match of 50%
 - ▶ TRIBAL ECONOMIC DEVELOPMENT AGENCY
 - ▶ Contributed to Tribal Pay Match of 50%



What does collaboration look like?

- ▶ Communication
 - ▶ Regular meetings, “office hours,” created systems and processes
- ▶ Tribal support of outreach
 - ▶ Contact families
 - ▶ Follow up with application, documents
- ▶ Tribal support of construction
 - ▶ Grading, trenching, shade mitigation, site mapping
- ▶ Tribal support of workforce
 - ▶ Recruit and coordinate trainees
- ▶ Common goal: People. Planet. Employment.
 - ▶ Rely on our history / relationship / accomplishments when challenges arise





Match to the Grant

- ▶ Each partner is contributing:
 - ▶ Volunteers
 - ▶ Staff time
 - ▶ Heavy Equipment
 - ▶ Materials

Lessons Learned

- ▶ Time study for GRID and Tribal staff
 - ▶ Outreach hours
 - ▶ Construction & Installation needs
- ▶ Tools & Systems
 - ▶ Communication Structure
 - ▶ Ground Mount Schedule
 - ▶ Homeowner Ground Mount Schedule

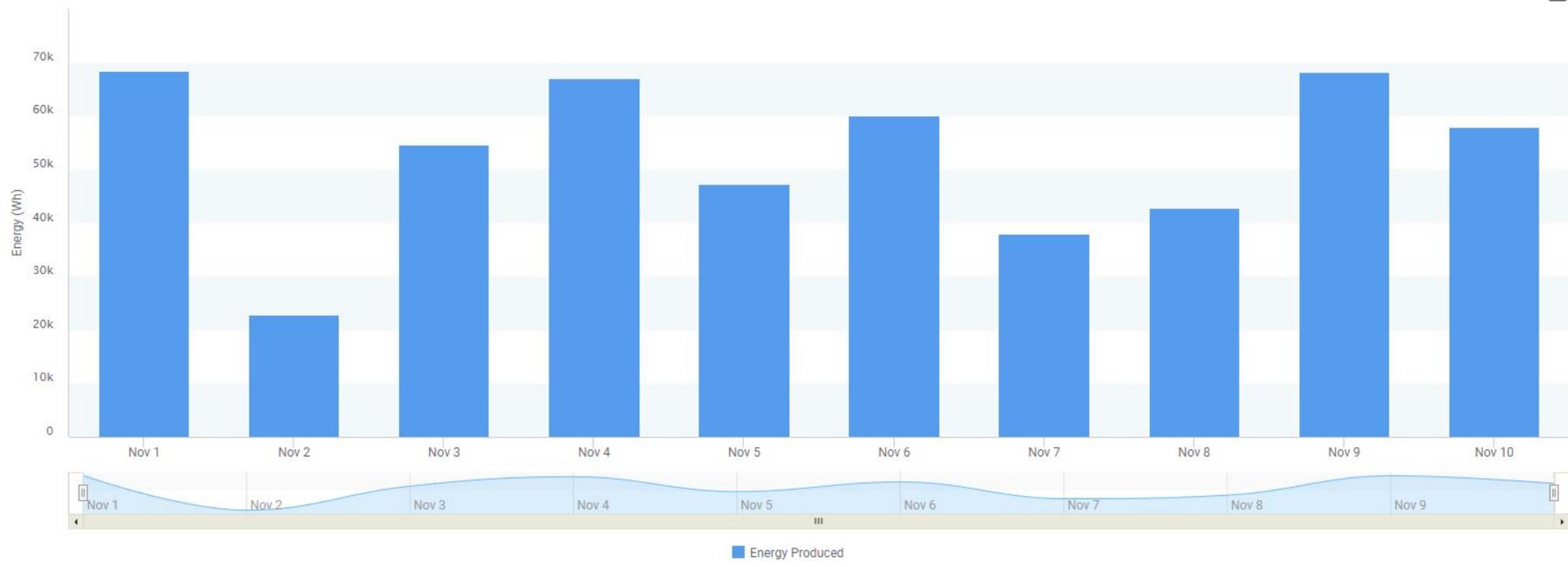




Systems List
La Jolla Admin Bldg (LJT #0001 - DOE) Full System

View | Graph | Reports | Devices | Events

Energy: Month to Date | Nov 1, 2017 - Nov 10, 2017



48 Microinverters
1 Envoy Ethernet
Pauma Valley, CA
72°F
System Normal

Full System

Energy | Status

Today
57.9 kWh
Peak: 10.6 kW at 12:05 PM
Latest: 859 W at 1:55 PM

Past 7 Days
381 kWh

Month To Date
527 kWh

Lifetime
6.67 MWh

Feedback

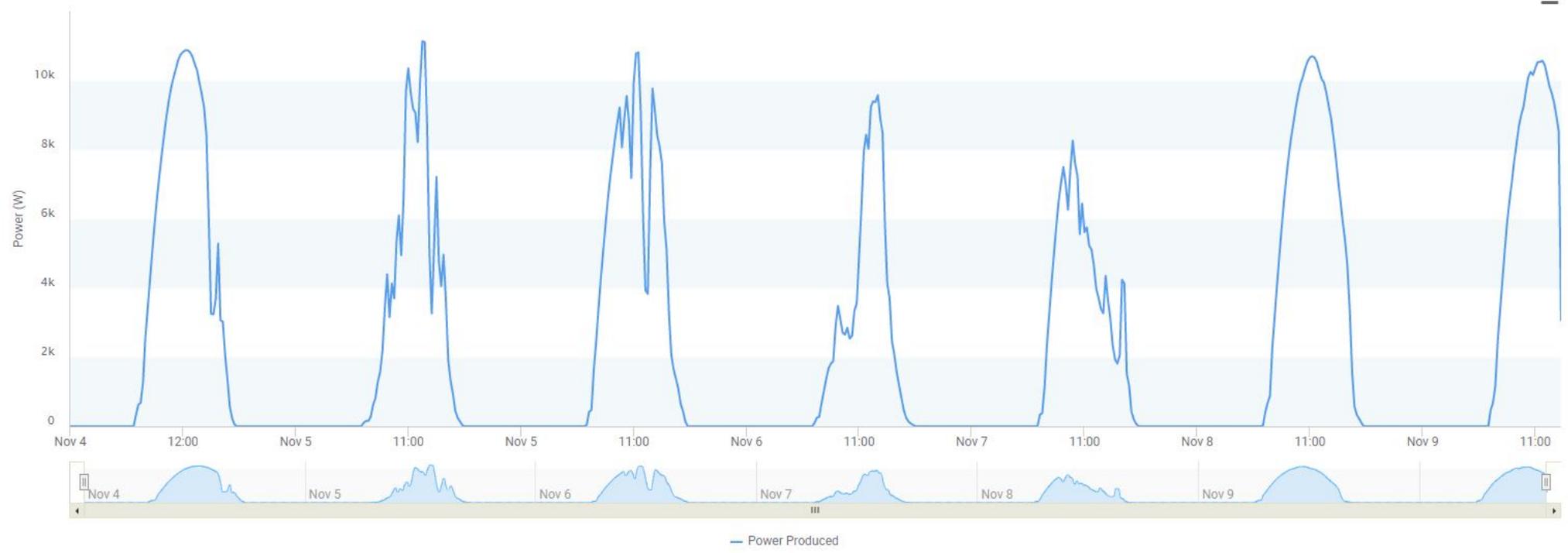
Maximum Produced
68.4 kWh

Total Produced
527 kWh

Systems List
La Jolla Admin Bldg (LJT #0001 - DOE) Full System

View Graph Reports Devices Events

Power: Past 7 Days Nov 4, 2017 - Nov 10, 2017



48 Microinverters
1 Envoy Ethernet
Pauma Valley, CA
72°F

System Normal

Full System

Energy Status

Today
57.9 kWh

Peak: 10.6 kW at 12:05 PM
Latest: 859 W at 1:55 PM

Past 7 Days
381 kWh

Month To Date
527 kWh

Lifetime
6.67 MWh

Feedback

Maximum Produced
11.1 kW

Maximum Consumed
0.0



Questions and Comments

Thank you

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