

# Picuris Pueblo 1MW Community - Scale Solar Array

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# About Picuris Pueblo

Picuris Pueblo currently has 306 members and 86 homes. Our traditional way of life starts with respect of the land and nature , our natural resource, everyday life consist of farming, hunting, providing for our families and honoring our culture by practicing traditions and beliefs as our ancestors did before us. The Current Governor is Craig Quanchello and the Lt. Governor is Wayne Yazza along with six (6) other tribal councilmen.

Picuris pueblo is nestled in a setting of serene beauty in what is known as the "hidden valley" of the Sangre de Cristo Mountains on Northern New Mexico. Its located 60 miles north of Santa Fe, and 24 miles southeast of Taos on scenic highway 76.

Our tranquil village rests along the banks of the Rio Pueblo river, which nourishes the evergreens, cottonwoods, aspens, grasses and flowers that blanket our valley and surrounding mountains. The scenic beauty is unsurpassed in New Mexico, the Land of Enchantment.



# NM State Law Requires Renewable Energy



- By 2020 New Mexico's Renewable Portfolio Standard requires
  - that 20% of all electricity sold by investor-owned electric utilities,
  - and 10% sold by cooperatives, come from renewable energy resources
- In 2014, renewable energy supplied 9.3% of the electricity generated in the state.

## Solar Industry in New Mexico

- There are currently more than 99 solar companies at work throughout the value chain in New Mexico, employing 1,899 people .
- In 2015, New Mexico installed 56 MW of solar electric capacity, ranking it 15th nationally.
- In 2015, \$86 million was invested on solar installations in New Mexico.
- The 406 MW of solar energy currently installed in New Mexico ranks the state 13th in the country in installed solar capacity. There is enough solar energy installed in the state to power 93,000 homes.
- Over the next five years, New Mexico is expected to install 1,392 MW of solar electric capacity, ranking the state 15th over that time span. This amount is more than 5 times the amount of solar installed over the last five years.
- Installed solar PV system prices in the U.S. have dropped steadily- by 12% from last year and 66% from 2010.

Source: Solar Electric Association

## Indian Energy

**Ten percent of the energy resources in the United States are located on Indian lands, which together occupy land areas the size of Texas (5% of US land area).**

**Historically, these resources have been exploited for non-Indian use, with Indians receiving only a portion of their potential benefit through leasing land.**

**Tribes are starting to participate in energy project development and ownership.**

# Indian Energy

## Tribal Advantages:

- **ROW (Policy Act of 2005 - Section 1813)**
- **Government / Business**
- **Funding**
- **Utility Formation**
- **Sovereignty / Regulation**





# Indian Energy

## Barriers:

- **Internal Politics**
- **Energy Pricing / Investment**
- **Complex Project Options**
  - Funding (where to borrow \$\$)**
  - Tax Incentives**
  - PPA/Interconnect negotiations**
  - Regulations/Permitting**
- **Weather in area**

# Indian Energy

## Picuris Project:

- **Kit Carson Electric  
Purchase Power Agreement /Interconnect price per Kwh**
- **Tribal Energy Plan – Pueblo Support**
- **10 acre Project Site**
- **NPHA – START Grant / BIA Grant and DOE – Clean Energy & Efficiency Projects on Indian Lands Grant**
- **NPHA will be the Developer**
- **Picuris Pueblo will be the owner at the end of the project**

# Why Develop a Solar Project?

- Strategic objectives
  - Secure energy asset
    - Energy costs will continue to escalate
  - Diversification of tribal investments
  - Jobs
  - Economic development
    - Secure energy and control costs to attract business activity
  - Marketing “Green” (Renewable Energy Credits)
- Financial objective
  - Diversification of investments (risk adjusted returns)
  - Financial decisions



# Picuris Pueblos Past Projects

Solar Powered Fire Station – First Net-Zero Building in NM

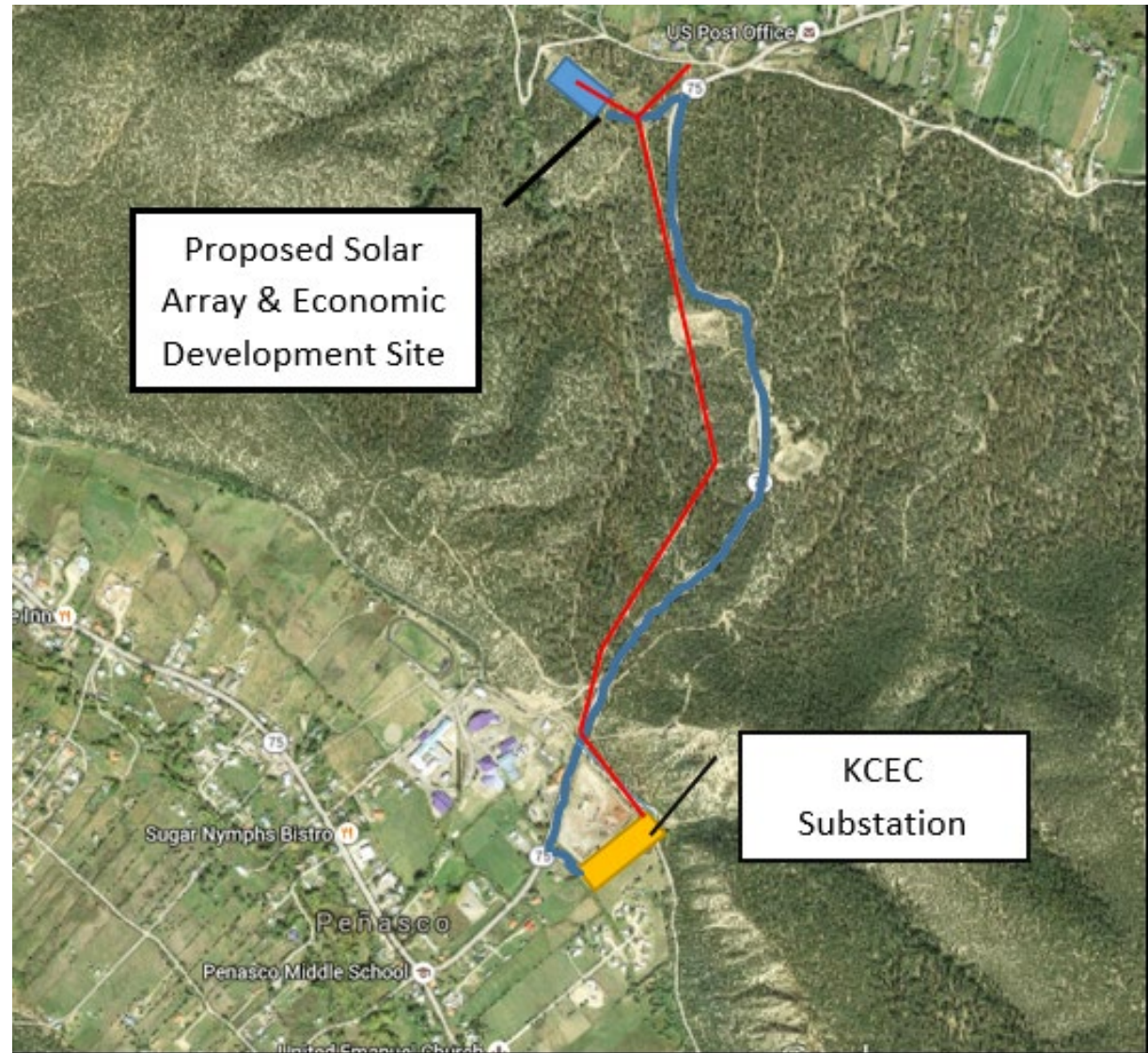






# Picuris Pueblos Past Projects

Rose Allrunner Home and Pump House Projects  
Previous small scale projects



# Picuris



	Proposed Picuris Solar
	KCEC Substation
	Transportation Route
	Electrical Line

# Picuris Site



# Northern Pueblos Housing Authority

## LEGAL DESCRIPTION

A TRACT OF LAND 10.010 ACRES BEING SITUATE IN SECTION 32, TOWNSHIP 23 NORTH, RANGE 12 EAST OF THE NEW MEXICO PRINCIPAL MERIDIAN, WITHIN THE PICURIS PUEBLO GRANT, TAOS COUNTY, NEW MEXICO, BEING MORE PARTICULARLY DESCRIBED BY METES AND MEASURES AS FOLLOWS:

BEGINNING AT THE NORTHEAST CORNER OF SAID TRACT, LYING ON THE WESTERLY RIGHT-OF-WAY LINE OF STATE ROAD 70, MARKED BY A NEEDLE WITH CAP 'T.L.S. STONE' FROM WHICH A BE TO THE S.W. CORNER OF SAID TRACT MARKING THE S.W. CORNER OF SAID TRACT, A BEARING OF  $S\ 22^{\circ}52'34''\ E$  A DISTANCE OF 215.00 FEET;

THENCE FROM SAID BEGINNING POINT, ALONG SAID RIGHT-OF-WAY LINE, ON A CURVE TO THE LEFT, HAVING A RADIUS OF 149.13 FEET, A LENGTH OF 142.58 FEET, A DELTA OF  $52^{\circ}14'12''$ , A CHORD BEARING OF  $S\ 12^{\circ}17'22''\ E$  AND DISTANCE OF 191.88 FEET TO A POINT OF TANGENCY, MARKED BY A N.E. S.W. RIGHT-OF-WAY MARKER;

THENCE  $S\ 00^{\circ}34'21''\ E$ , A DISTANCE OF 168.87 FEET TO THE SOUTHEAST CORNER OF SAID TRACT, MARKED BY A NEEDLE WITH CAP 'T.L.S. STONE';

THENCE LEAVING SAID RIGHT-OF-WAY,  $N\ 75^{\circ}14'11''\ E$ , A DISTANCE OF 403.00 FEET TO AN ANGLE POINT OF SAID TRACT, MARKED BY A NEEDLE WITH CAP 'T.L.S. STONE';

THENCE  $N\ 38^{\circ}52'34''\ E$ , A DISTANCE OF 187.27 FEET TO AN ANGLE POINT OF SAID TRACT, MARKED BY A NEEDLE WITH CAP 'T.L.S. STONE';

THENCE  $N\ 02^{\circ}52'34''\ E$ , A DISTANCE OF 87.76 FEET TO AN ANGLE POINT OF SAID TRACT, MARKED BY A NEEDLE WITH CAP 'T.L.S. STONE';

THENCE  $N\ 82^{\circ}48'21''\ E$ , A DISTANCE OF 122.33 FEET TO AN ANGLE POINT OF SAID TRACT, MARKED BY A NEEDLE WITH CAP 'T.L.S. STONE';

THENCE  $N\ 51^{\circ}29'34''\ E$ , A DISTANCE OF 346.11 FEET TO THE SOUTHWEST CORNER OF SAID TRACT, MARKED BY A NEEDLE WITH CAP 'T.L.S. STONE';

THENCE  $N\ 1^{\circ}07'22''\ E$ , A DISTANCE OF 34.83 FEET TO AN ANGLE POINT OF SAID TRACT, MARKED BY A NEEDLE WITH CAP 'T.L.S. STONE';

THENCE  $N\ 04^{\circ}10'18''\ E$ , A DISTANCE OF 170.67 FEET TO AN ANGLE POINT OF SAID TRACT, MARKED BY A NEEDLE WITH CAP 'T.L.S. STONE';

THENCE  $N\ 15^{\circ}44'40''\ E$ , A DISTANCE OF 22.84 FEET TO AN ANGLE POINT OF SAID TRACT, MARKED BY A NEEDLE WITH CAP 'T.L.S. STONE';

THENCE  $N\ 01^{\circ}49'14''\ E$ , A DISTANCE OF 30.84 FEET TO AN ANGLE POINT OF SAID TRACT, MARKED BY A NEEDLE WITH CAP 'T.L.S. STONE';

THENCE  $N\ 85^{\circ}10'11''\ E$ , A DISTANCE OF 154.88 FEET TO THE NORTHWEST CORNER OF SAID TRACT, MARKED BY A NEEDLE WITH CAP 'T.L.S. STONE';

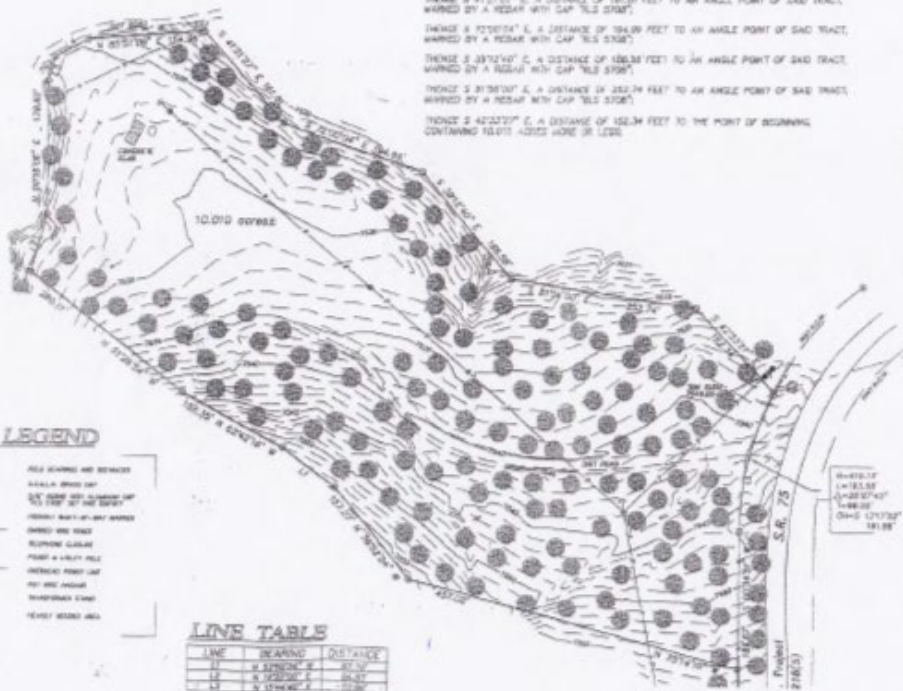
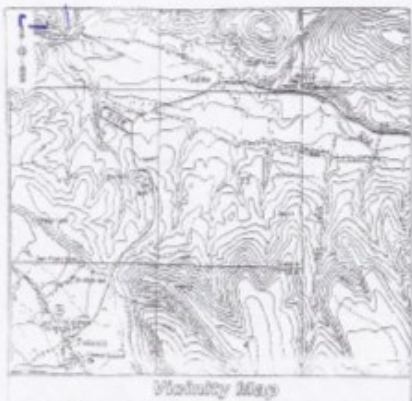
THENCE  $S\ 47^{\circ}12'22''\ E$ , A DISTANCE OF 181.81 FEET TO AN ANGLE POINT OF SAID TRACT, MARKED BY A NEEDLE WITH CAP 'T.L.S. STONE';

THENCE  $S\ 77^{\circ}02'14''\ E$ , A DISTANCE OF 104.09 FEET TO AN ANGLE POINT OF SAID TRACT, MARKED BY A NEEDLE WITH CAP 'T.L.S. STONE';

THENCE  $S\ 38^{\circ}12'40''\ E$ , A DISTANCE OF 168.38 FEET TO AN ANGLE POINT OF SAID TRACT, MARKED BY A NEEDLE WITH CAP 'T.L.S. STONE';

THENCE  $S\ 21^{\circ}30'21''\ E$ , A DISTANCE OF 350.24 FEET TO AN ANGLE POINT OF SAID TRACT, MARKED BY A NEEDLE WITH CAP 'T.L.S. STONE';

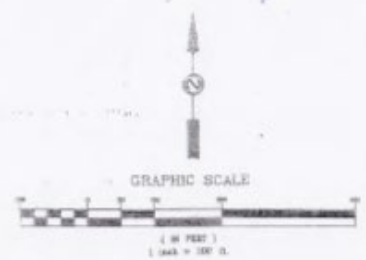
THENCE  $S\ 42^{\circ}22'27''\ E$ , A DISTANCE OF 158.34 FEET TO THE POINT OF BEGINNING, CONTAINING 10.010 ACRES MORE OR LESS.



### LEGEND

N 00°00'00" E	ALL MARKERS AND BEARINGS
●	NEEDLE WITH CAP
○	SEE PLAT FOR ALL BEARINGS OF TANGENCY AT THE CORNER
○	RIGHT-OF-WAY MARKER
○	CHORD AND BEARING
○	BEARING AND DISTANCE
○	POINT OF ANGLE POINT
○	NEEDLE WITH CAP
○	SEE PLAT FOR ALL BEARINGS OF TANGENCY AT THE CORNER
○	CHORD AND BEARING
○	BEARING AND DISTANCE
○	POINT OF ANGLE POINT
○	NEEDLE WITH CAP

Tribal Boundary & Topographic Survey of  
**Picuris Pueblo 10 Acre Commercial**  
 Section 32, Township 23 North,  
 Range 12 East, N.M.P.M.  
**Picuris Pueblo Grant**  
 (VADITO)  
 Taos County, New Mexico  
 October 2003



### SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF A SURVEY MADE BY ME IN OCTOBER 2003 AND THAT THIS PLAT AND SURVEY INSTRUMENTS AS ADOPTED BY THE NEW MEXICO BOARD OF REGISTRATION LAND SURVEYORS AND THAT THIS PLAT AND SURVEY ARE TRUE AND CORRECT BY KNOWLEDGE AND BELIEF.

*John Paisano Jr.*  
 JOHN PAISANO JR., R.L.S., No. 5708

11-28-03

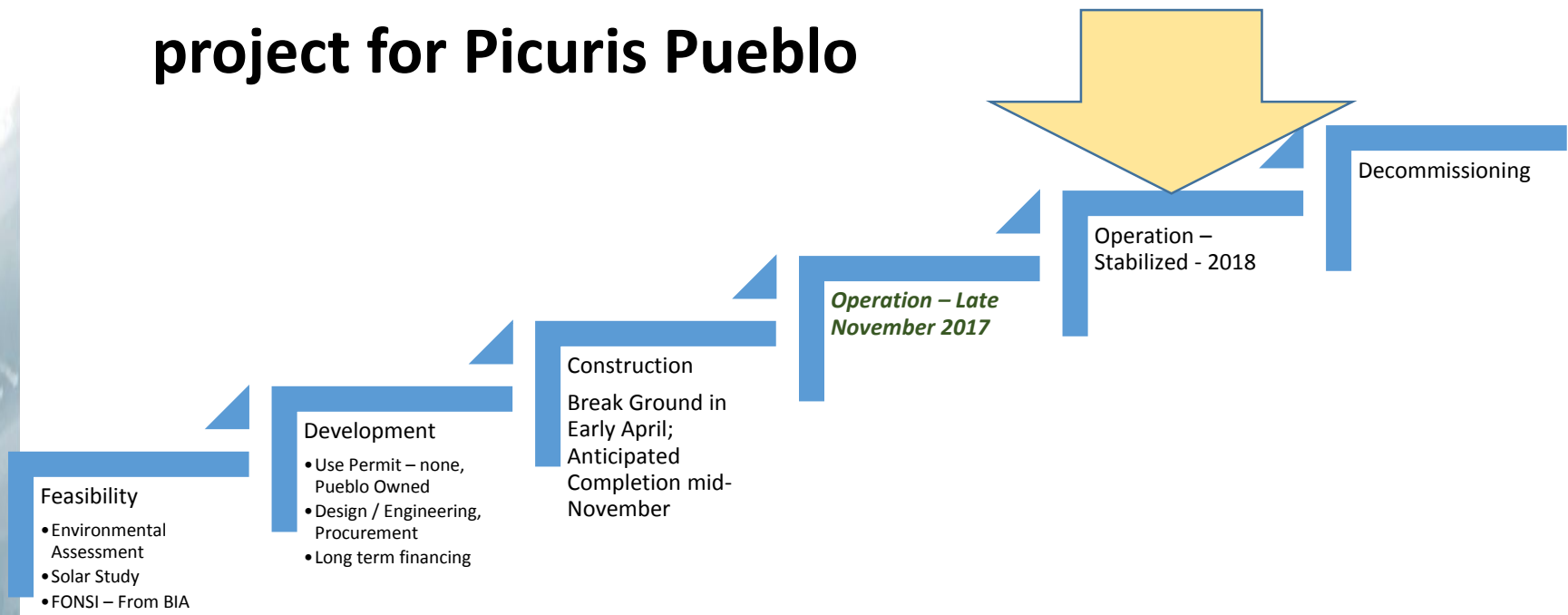
**PAISANO SURVEYING**

EAST BOUNDARY PICURIS PUEBLO GRANT



# Project Phases

**Objective is to actually structure and fund a feasible project for Picuris Pueblo**



# Project Challenges

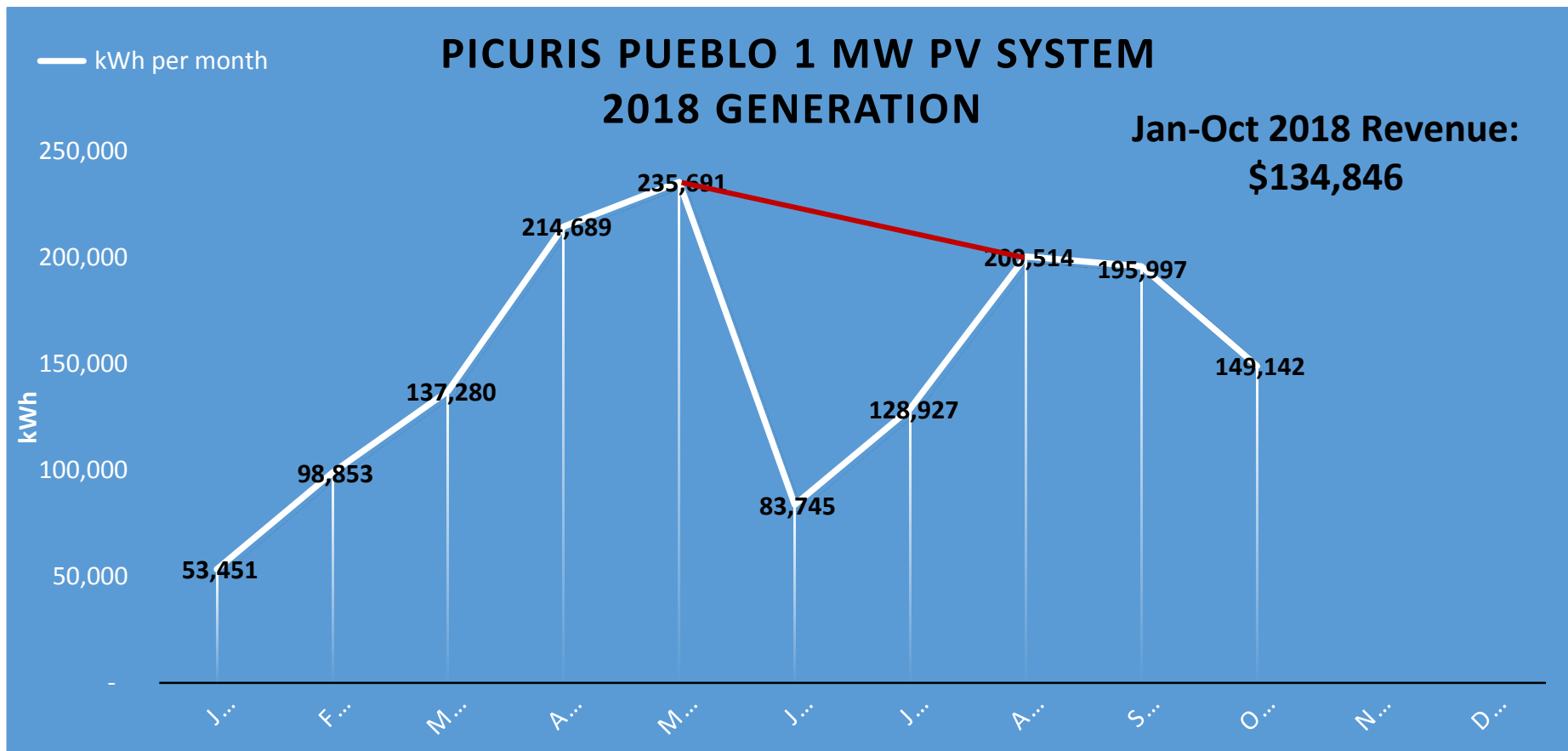
- **Start the Process Early**
- **Environmental Reports**
- **Site Selection – Geo-Technical Investigation**
- **Funding (\$\$\$) – Have Project Monies Allocated and Committed for Entire Project Early on**
- **Selection of Contractor – Make sure contractor and subcontractors have the capacity and experience for project that you are planning!!**
- **Schedule and Time-Line for Deliverables**
- **Commissioning**
- **Completion Dates, Punch List and Owner Acceptance**

# Picuris Solar Data for 2018

2018 Data	kWh per month	Rate	Revenue Generated
January	53,451	\$ 0.09	\$ 4,810.57
February	98,853	\$ 0.09	\$ 8,896.81
March	137,280	\$ 0.09	\$ 12,355.18
April	214,689	\$ 0.09	\$ 19,322.05
May	235,691	\$ 0.09	\$ 21,212.23
June	83,745	\$ 0.09	\$ 7,537.03
July	128,927	\$ 0.09	\$ 11,603.41
August	200,514	\$ 0.09	\$ 18,046.29
September	195,997	\$ 0.09	\$ 17,639.69
October	149,142	\$ 0.09	\$ 13,422.78
November		\$ 0.09	\$ -
December		\$ 0.09	\$ -
Average Mar-May, July-Sept	185,516		
<b>Annual Total</b>			<b>\$ 134,846.05</b>
<u>Projected annual generation (kWh), based on full production months</u>			
	2,226,197 (kWh)		

# Picuris Solar Data for 2018

## Graphical Representation of Data



## *Lessons Learned*

- **Start the communication early with all the partners**
- **Make sure to secure the funding**
- **Have detailed plans and specifications**
- **Have solid and detailed contract documents**
- **Continue the communication process throughout the project to stay ahead of potential bumps in the road**

## *Special Thanks to the Project Team*

- **DOE – Office of Indian Energy**
- **Kit Carson Electric**
- **Picuris Pueblo Tribal Council**
- **Taos County**
- **NREL**
- **BIA**
- **Osceola Energy**

# *Special Thanks to the Project Team*



# Questions About Project?

## Thank You

**Governor Craig Quanchello  
Picuris Pueblo, NM**

**Jon Paul Romero, Executive Director  
Northern Pueblos Housing Authority**