Picuris Pueblo 1MW
Community - Scale Solar Array
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

Tribal Energy Sovereignty – 573 Federally Recognized Tribes in the United States

Since 2002 - 2016 the DOE has invested $66.5 million in 217 tribal clean energy projects valued at $126 million, and creating over 2,000 jobs
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
Northern Pueblos Housing Authority

Picuris

- Proposed Picuris Solar
- KCEC Substation
- Transportation Route
- Electrical Line

Proposed Solar Array & Economic Development Site

- KCEC Substation

PICURIS PUEBLO SOLAR ARRAY

December 2018
Picuris Site
Objective is to actually structure and fund a feasible project for Picuris Pueblo

Feasibility
- Environmental Assessment
- Solar Study
- FONSI – From BIA

Development
- Use Permit – none, Pueblo Owned
- Design / Engineering, Procurement
- Long term financing

Construction
Break Ground in Early April; Anticipated Completion mid-November

Operation – Late November 2017

Operation – Stabilized - 2018

Decommissioning
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

<table>
<thead>
<tr>
<th>2018 Data</th>
<th>kWh per month</th>
<th>Rate</th>
<th>Revenue Generated</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>53,451</td>
<td>$ 0.09</td>
<td>$ 4,810.57</td>
</tr>
<tr>
<td>February</td>
<td>98,853</td>
<td>$ 0.09</td>
<td>$ 8,896.81</td>
</tr>
<tr>
<td>March</td>
<td>137,280</td>
<td>$ 0.09</td>
<td>$ 12,355.18</td>
</tr>
<tr>
<td>April</td>
<td>214,689</td>
<td>$ 0.09</td>
<td>$ 19,322.05</td>
</tr>
<tr>
<td>May</td>
<td>235,691</td>
<td>$ 0.09</td>
<td>$ 21,212.23</td>
</tr>
<tr>
<td>June</td>
<td>83,745</td>
<td>$ 0.09</td>
<td>$ 7,537.03</td>
</tr>
<tr>
<td>July</td>
<td>128,927</td>
<td>$ 0.09</td>
<td>$ 11,603.41</td>
</tr>
<tr>
<td>August</td>
<td>200,514</td>
<td>$ 0.09</td>
<td>$ 18,046.29</td>
</tr>
<tr>
<td>September</td>
<td>195,997</td>
<td>$ 0.09</td>
<td>$ 17,639.69</td>
</tr>
<tr>
<td>October</td>
<td>149,142</td>
<td>$ 0.09</td>
<td>$ 13,422.78</td>
</tr>
<tr>
<td>November</td>
<td></td>
<td>$ 0.09</td>
<td>$ -</td>
</tr>
<tr>
<td>December</td>
<td></td>
<td>$ 0.09</td>
<td>$ -</td>
</tr>
<tr>
<td>Average Mar-May, July-Sept</td>
<td>185,516</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Annual Total</strong></td>
<td></td>
<td></td>
<td><strong>$ 134,846.05</strong></td>
</tr>
</tbody>
</table>

Projected annual generation (kWh), based on full production months

2,226,197 (kWh)
Picuris Solar Data for 2018

Graphical Representation of Data

PICURIS PUEBLO 1 MW PV SYSTEM
2018 GENERATION

Jan-Oct 2018 Revenue: $134,846
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