

Jicarilla Apache First Steps Project

Renewable Energy & Energy Efficiency Strategic Planning

Jicarilla Apache Utility Authority

Karl R. Rábago, Director

Mike Hamman, COO

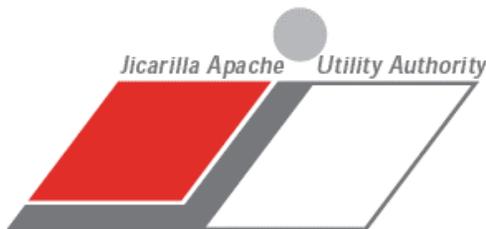
October 19, 2005





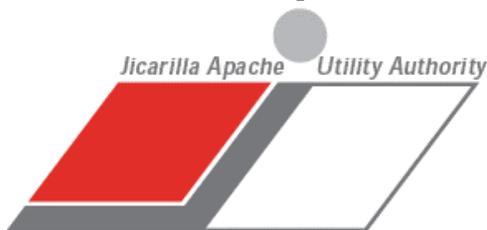
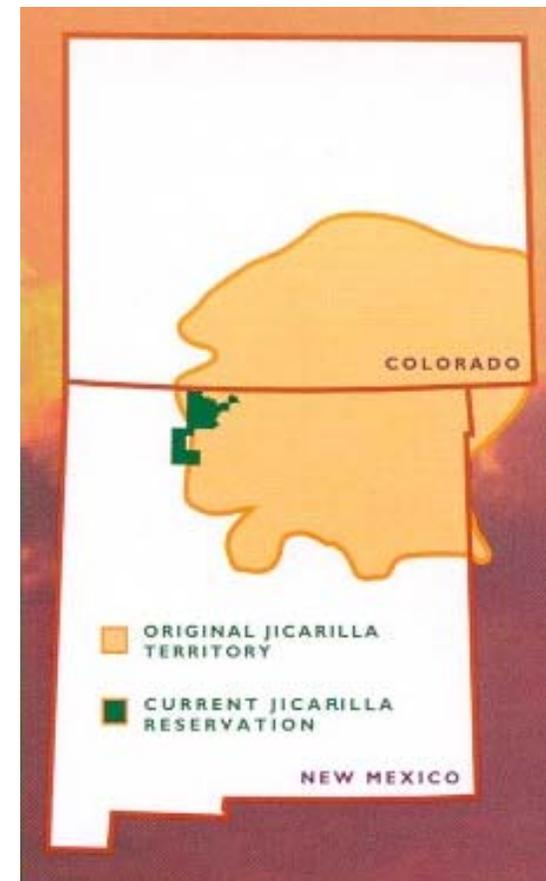
Presentation Outline

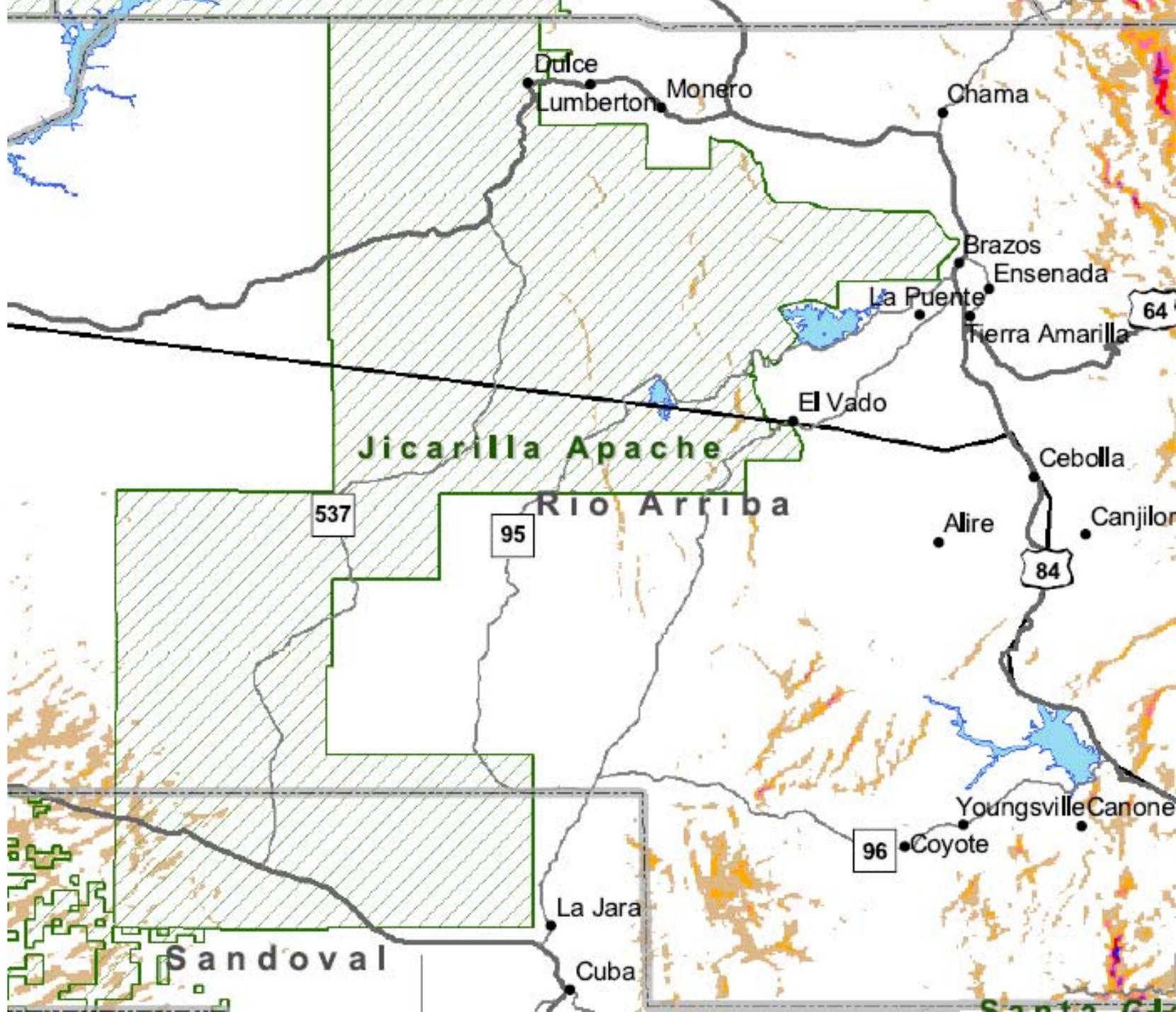
- Location & Basic Facts
- The Jicarilla Apache Utility Authority
- First Steps Project highlights



Location & Basic Facts

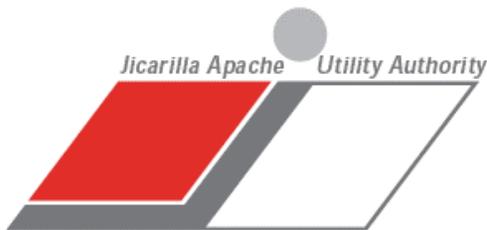
- Population ~ 3,500
- Electric Load ~ 4.5 MW
- Two coops
 - North – Northern Rio Arriba (NORA)
 - South – Jemez Mountain (JMEC)
- Significant oil & gas development
- One prior PV demonstration project



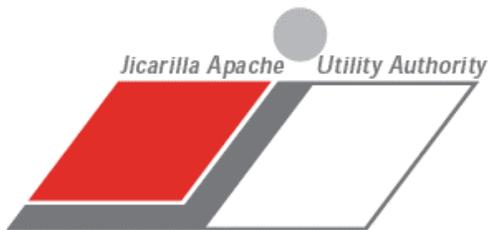


Jicarilla Apache Utility Authority

- Established in 1998
- Primarily focused on water & gas, so far
- Strong focus on building institutional capacity
- Significant accomplishments:
 - Water & wastewater treatment
 - Water resource management
 - Gas service
 - Gas well buy back VPP deal
 - Low income tax credit housing

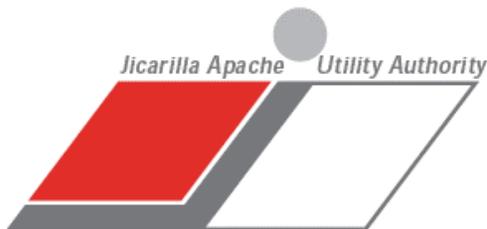


PV Demonstration – 2000 to 2002



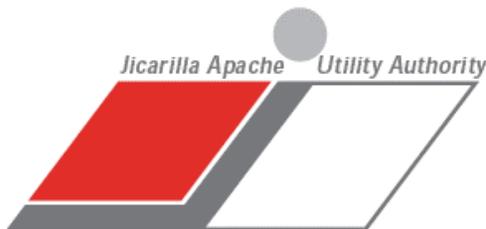
First Steps Project

- Phase 1 – Baseline Assessment
 - Phase 2 – Plan Development
 - Phase 3 – Project Development
-
- Partners & Consultants
 - JAUA
 - Jicarilla Apache Nation
 - HARC
 - DEA

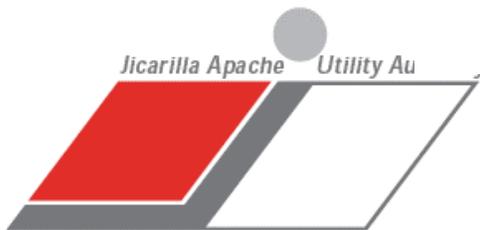
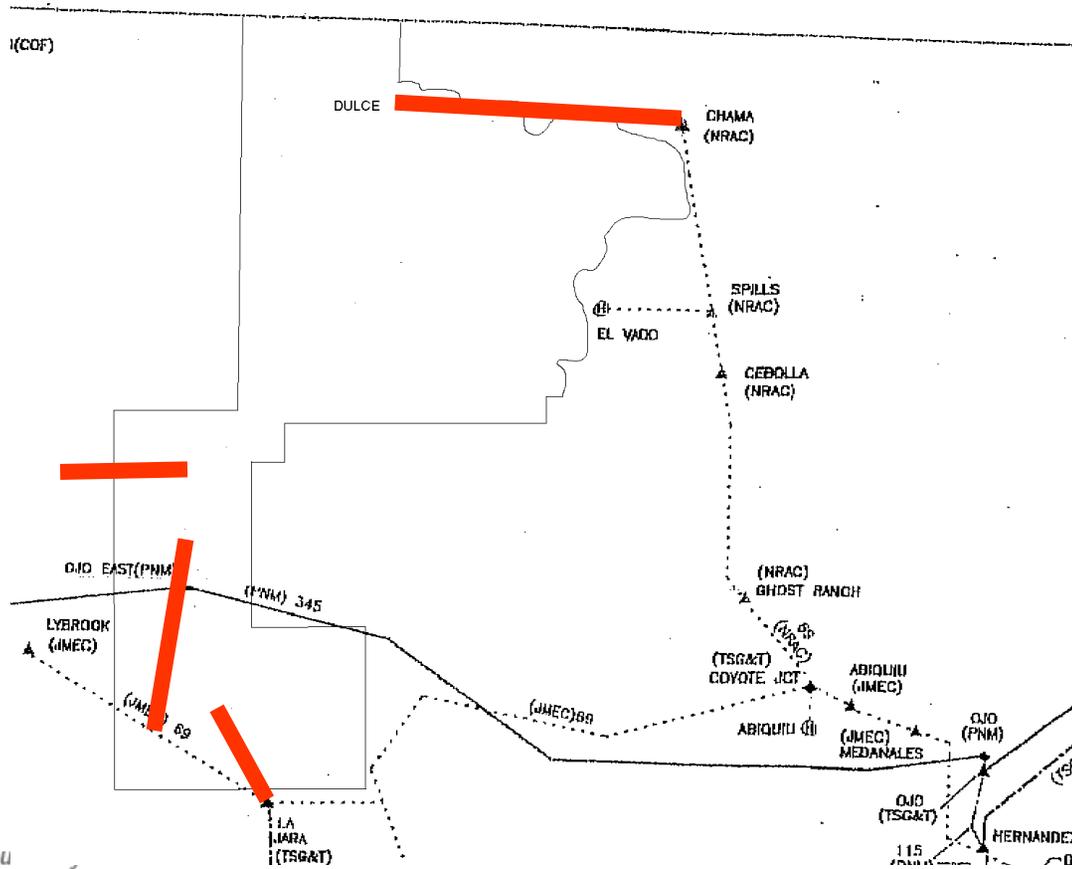


Objectives & Questions to Answer

- A comprehensive strategic plan that prioritizes opportunities for maximizing the potential of RE & EE on the Jicarilla Apache Nation Reservation (and beyond)
- Resource quality
- Promising technologies
- Economic development opportunities
- Integrated solutions



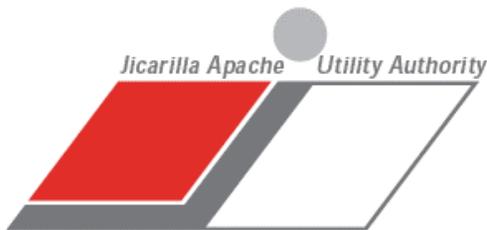
Transmission



Initially Identified Resources

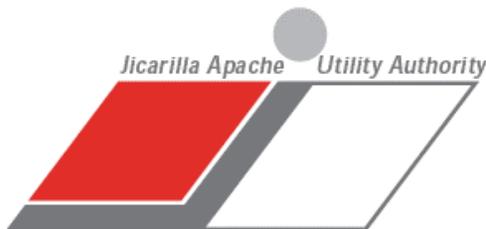
- Solar
- Biomass
- Geothermal
- Small wind

- Energy efficiency



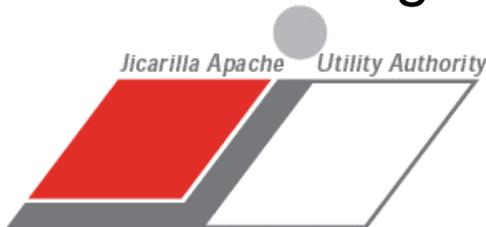
Preliminary Findings

- Large wind not promising
- Electric system data lacking; local coops lack expertise, confidence and enthusiasm
- “We already studied that” – but we can’t find the report
- Feasibility studies will be required
- Most promising opportunities are small in scale
- Distributed generation may offer multiple benefits
- Not likely that the Jicarilla Apache Nation will go “off the grid” anytime soon



Initial Stakeholder Meeting

- Strong interest & good participation
- Anecdotal information about remote PV
- Coops concerned that Jicarilla Apache Nation would consider self-generation
- Several agencies with supporting capabilities:
 - IRMP
 - Forestry
 - Housing
 - Public works (buildings)
 - Oil & gas



Thank You!

- Karl R. Rábago
Member, Board of Directors, JAUA
e: krabago@harc.edu
t: 281.364.4035
- Mike Hamman
Chief Operating Officer, JAUA
e: mikehamman@valornet.com
t: 505.759.9176

