# Taos Pueblo Renewable Energy Feasibility Study

Taos, New Mexico

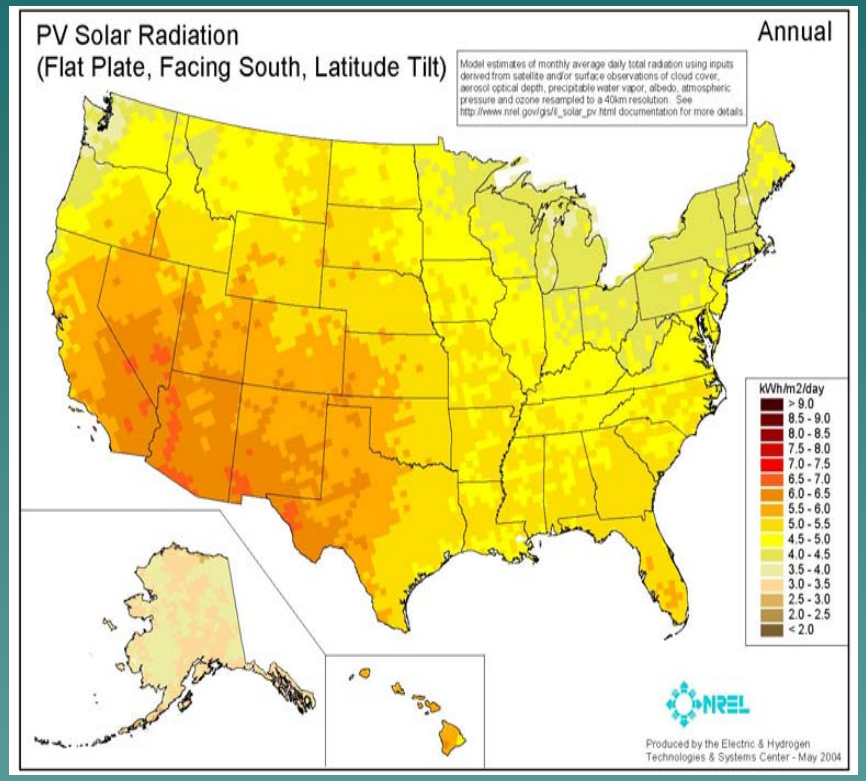
2004-2006

# Scope of Study

- Solar
- Wind
- Biomass
- Hydro
- Tribal Council review
- Business plan development

# Solar

- New Mexico sunshine abundant even in winter



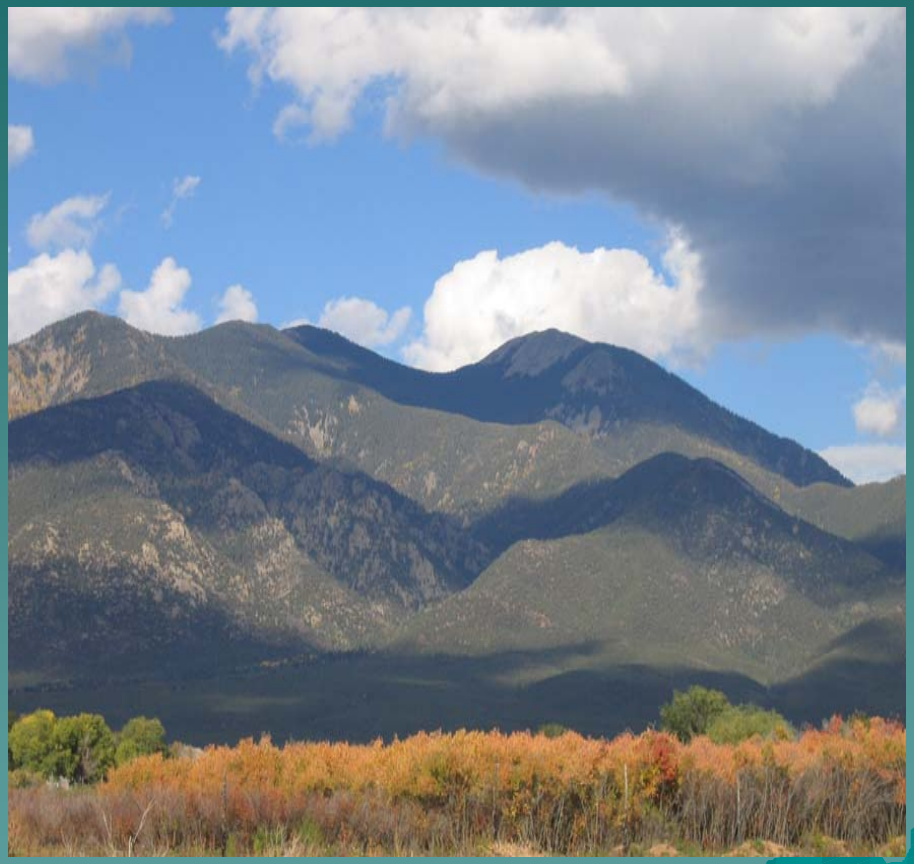
# Solar

- Demonstration Projects: rock- storage system and pv-powered pump supplying irrigation
- New housing- passive-solar design and solar hot water.
- PV powered buffalo water tank

# Attached Solar Greenhouse

# Wind

- Commercial grade wind sites are on mountain ridges -scenic and cultural issues



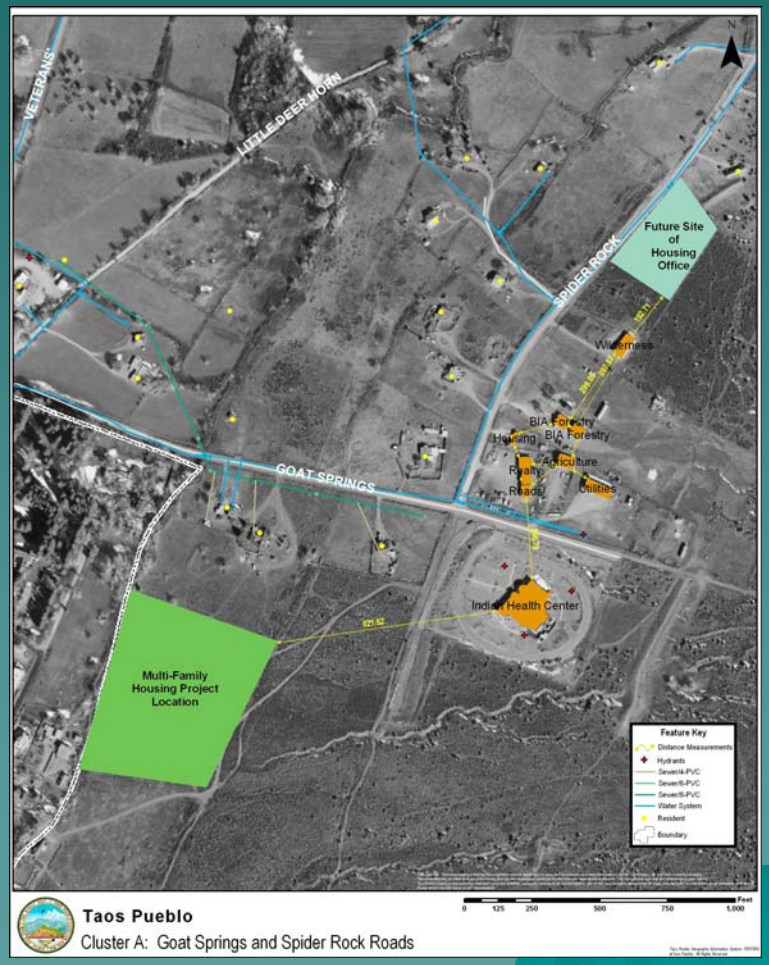
# Small-scale wind

- Good seasonal wind resources in open rangeland
- Pump water for buffalo and cattle
- Off-grid Residential

# Subterranean heating and cooling system

# Biomass

- Preliminary engineering plans for district heat and power system by BioEnergy Corporation
- Manual fired Garn system for Red Willow Center and greenhouses



# Biomass System

# Biodiesel Crops

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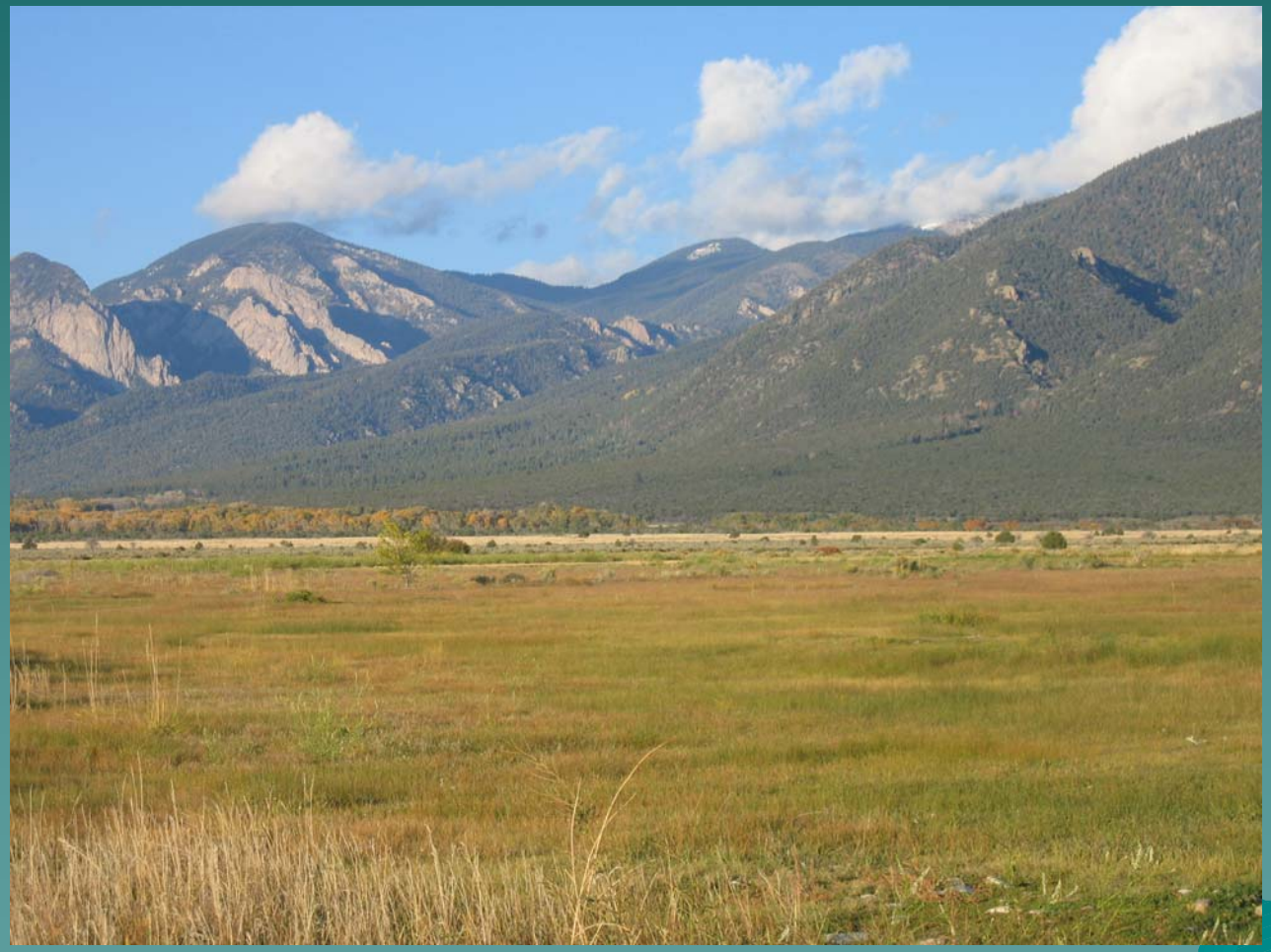
- Can be used as rotation crop
- Oilseed can be processed at planned processing plant in nearby area
- Algae ponds

# Hydroelectric

# Irrigation Pipes with 650’ Elevation Change



# Generation Potential

- Use of irrigation pipes as penstocks can generate 60% of electrical load
- 100% of electrical load can be supplied with additional run-of-river installations with less than 20% of stream-flow diversion.

# Promising Results

- Wood-fired district heating systems can enable new businesses such as commercial greenhouses, and lower energy bills for existing and planned buildings.
- Hydro electric generation can create energy sovereignty.
- Off-grid land assignments can be used without power line extensions .