Southern Ute Alternative Energy

Oxford Solar Project Lessons Learned

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Rebecca Kauffman, SUAE President

Agenda

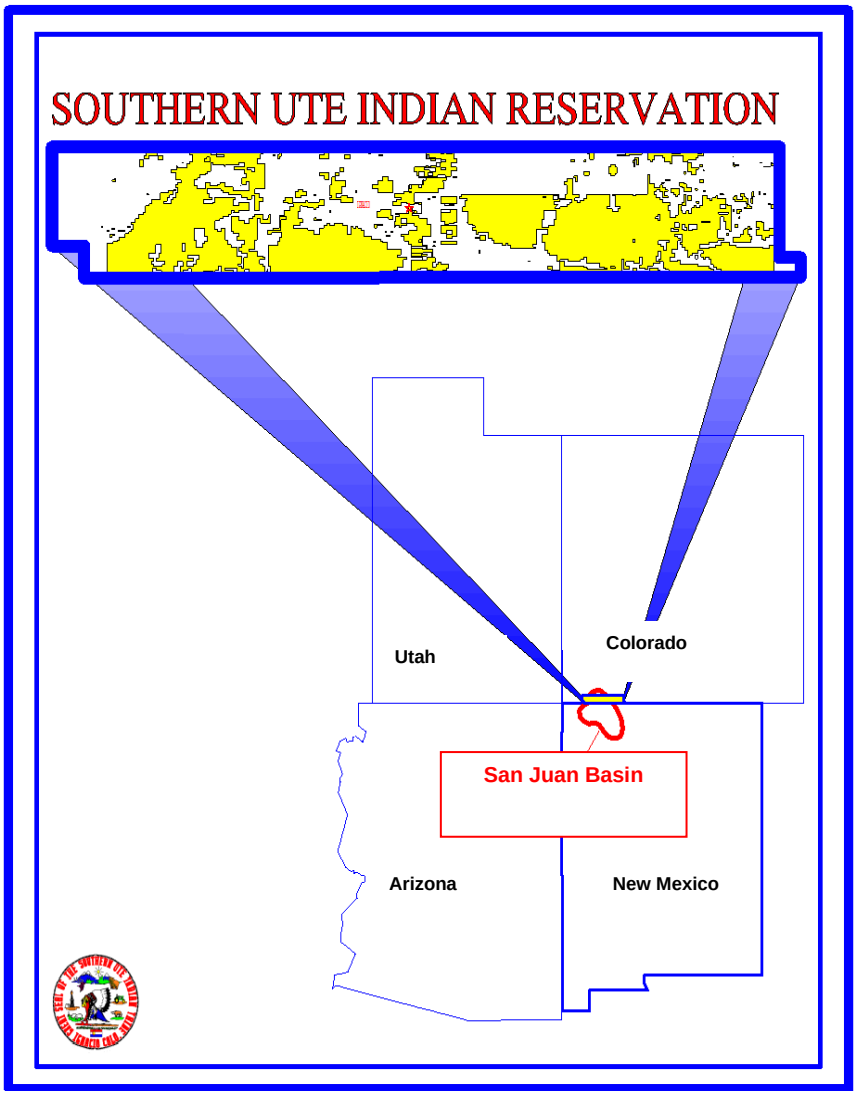
Southern Ute Alternative Energy

- Background
  - Southern Ute Indian Tribe
  - Southern Ute Alternative Energy
- Solar Project Overview
  - Why Now?
  - Why this particular project?
- Project Development Process
  - Permitting
  - Land access
  - Utility Negotiation
- Project Next Steps
  - Remaining Activities

Background

Southern Ute Alternative Energy

- **Tribal Members**: 1,400+
- **Reservation**: 313,070 acres
  exterior: 681,306 acres
- **Employment**: The Tribe is the largest employer in La Plata County with more than 1,300 employees.



Background

Southern Ute Alternative Energy

- Southern Ute Alternative Energy (SUAE) is
  - A for-profit business owned by the Tribe
  - Designated manager of the Oxford Solar Project for the Tribe.
- The mandate is to invest in alternative and renewable energy.
  - Funds
  - Operating Companies (including projects)
- Alternative Energy's objective is to focus on opportunities with a
  - positive environmental impact
  - sound technologies
  - sound economics
- Primary areas of focus include:  Solar  Wind

Solar Project Overview

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- ~1,000kW ground-mount Photovoltaic (PV) project
- Interconnection near an underutilized substation
- Power sold to local utility
- Electricity generated equivalent to the usage of about 250 households
- $3M budget including $1.5M award from USDOE TEP/EERE - Community-Scale Clean Energy Projects in Indian Country

The Journey

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- Why Now??
- Why this particular project??

Why Now?

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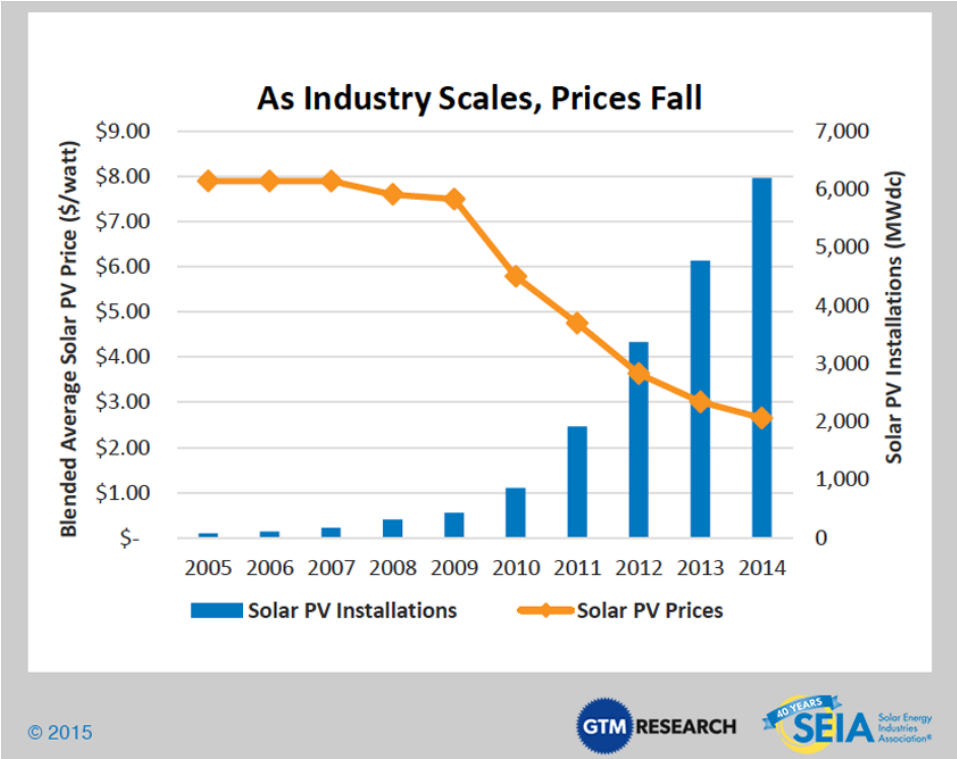
- We have the solar resource
  - And had completed the feasibility work required
- Part of Tribe's overall plan to diversify their businesses
  - Decision started that process in 2006
- The technology started to become economical for our area
  - Costs dropped over 60% over last 5 years



Solar Feasibility Study

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Part I -

- Identified the best potential locations
  - Developed a Geographic Information System(GIS) based model to evaluate locations
    - Proximity to infrastructure (roads, transmission, etc.)
    - Topography (slope, aspect and flood plains)
    - Solar resource
    - Land Ownership
    - Habitat for threatened and/or endangered species
    - Others

Lesson Learned	Conclusion
You need to do your homework.	• Most potential “projects” are not viable • Identify viable projects without spending a lot of money

GIS Based Solar Suitability

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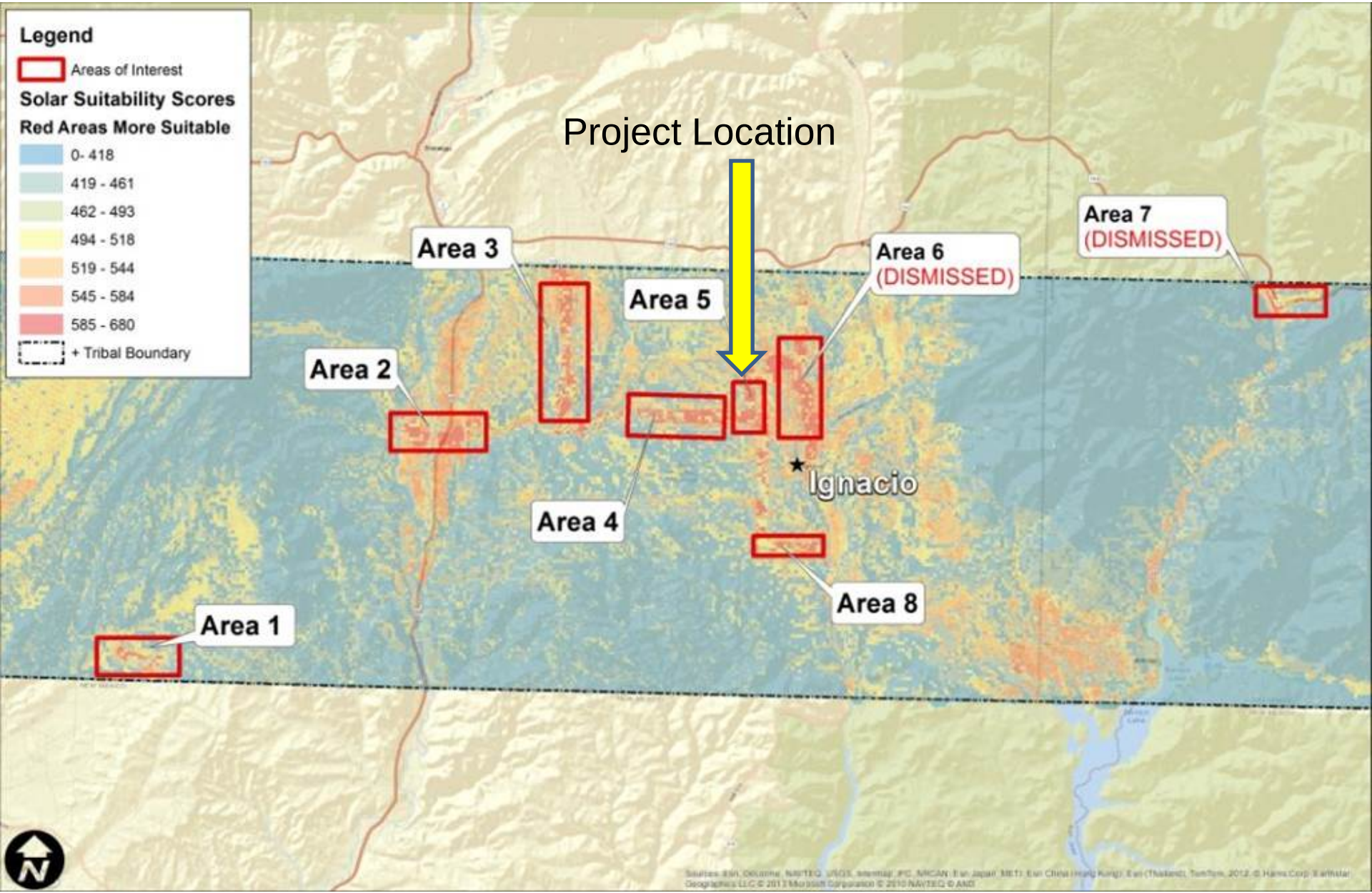

Solar Feasibility Study

Southern Ute Alternative Energy

Part II – Review the market

- Evaluated opportunities for electricity sales

Lesson Learned	Conclusion
You need to do your homework.	• Most potential "projects" are not viable • Identify viable projects without spending a lot of money
Understanding Energy Markets is Difficult	• The price you can get for your energy is unique and driven by many factors including local incentives, competition, generation profile, and demand.
Identifying the players can be complex	• Selling locally or far away there are potentially many players involved. • Their roles and motivations are not necessarily easy to discern.

Why this particular project?

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- Evaluated the project goals, desired role for the Tribe and what the Tribe has to offer. (Land? Buildings? Project Management? Labor?)
- Identified opportunities to make a project economically viable
  - Community Solar? (NREL technical assistance, START program)
  - Grant Funded Project? (identified and applied for grant)

Lessons Learned	Conclusions
Tribal Projects have many opportunities for assistance	• Need to have a project that is well defined
Need to have a way to quickly evaluate project economics	• Many tools available online (System Advisor Model, PV Watts, RETScreen) • Can also build a custom spreadsheet
Putting someone on point is critical to success.	• Need a Project Manager with time and incentive to make the project succeed.
Look for ways to simplify the project.	• Categorical Exclusion. • No third party ownership

Our Project Initially Defined

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- Technology: Ground mounted photovoltaic (PV)
- Financing: Partial grant funded
- Offtake: The Tribe is "virtually" net metered
- Benefits:
  - Tribe saves money on electricity use
  - Utility buy in and high level agreement

Permitting/Land Access

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- Environmental
  - Eligible for a Categorical Exclusion due to early farming and ranching activity which disturbed the land
  - The site also has naturally occurring selenium, e.g., natural brownfield
- Geotech
  - Difficult issue for this project given the nature of the soil
  - Utilized an outside contractor and took extra care in this evaluation
- Land Lease and Rights of Way
  - Right to use and access the land
  - Complexities
    - BIA water ditches
    - Private property
    - Utility rights of way and infrastructure
    - Oil and gas infrastructure
- Identified a “clean” 40 acres for a 10 acre project

Utility Project Negotiations

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Discussions included:

- Interconnection Agreement
  - Negotiated with local electric utility
  - Defines the terms under which the project can connect to the grid
- Wheeling Agreement
  - Cost and terms by which energy will be delivered to a distant buyer/end user
- Power Purchase Agreement
  - Defines the rates the project will be paid for the energy provided to the buyer

Utility Negotiation

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- **Step 1 – Homework**
- Who are you dealing with?
- What is your historical relationship?
- What do you need? What do you want?
  - Who you are and your intentions
  - A Customer vs. a Tribe!!!!
- What do they need? What do they want? What is their motivation?

Utility Negotiation

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Type of Utility	Motivation	Owners	Their Rulebook	Services
Investor Owned Utility (IOU)	For Profit	Investors/ Owners	Receive a franchise license from the State PUC governance	Generation Bulk Power sales Transmission Distribution
Public Utility (PPU)	Not for Profit	Municipalities Counties Tribes	Locally self-governed	Generation Distribution
Cooperative (Coop)	Not for Profit	Member Owned (customers) Governed by elected Board of Directors	Some Federal, some state. Critical to treat all customers the same	Mostly distribution (some generation coop of coops)
Federally Owned (WAPA)	Not for Profit	Federal Government	Federal	Generally wholesale to utilities

Utility Negotiation

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- **Step 2 - Identify Points of Leverage**
  - Rights of Way on Tribal Land
  - Major customer of utility
  - Develop a tribal utility (various approaches)
  - Legal precedent
  - The Utility's need for the power (load growth, IRP, RPS, new regulations, other mandates, public pressure, etc.)

Utility Negotiation

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- **Step 3 - Investigate what is market price and a "fair" price**
  - Publically available prices
  - Talk to other developers
  - Hire a rate consultant
  - Know the price you need
    - Project economics
    - Costs and options
    - Run multiple iterations and scenarios

Utility Negotiation

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- **Be a little patient but <u>keep pushing</u>**
  - Keep the dialogue going – **if you don't no one else will…**
  - Look for common ground but be persistent
  - Develop and work to maintain trust

Lessons Learned	Conclusions
Know as much as you can about the Utility	• Completing the homework before you start discussions pays back during the process.
Keep doing the math	• Understanding the project economics and flexibility is critical to reach a reasonable result. • Knowing the project inside and out can keep you from wasting time and money. • Project costs can change over time.
Putting someone on point is critical to success.	• Need a Project Manager with time and incentive to make the project succeed.

Our Current Activities

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- Selection of the Engineering, Procurement and Construction (EPC) Contractor
  - Release Request for Qualifications (RFQ)
  - Select a limited number of contractors to receive Request for Proposals (RFP)
  - Release the RFP
  - Score and rank the proposals
  - Negotiate the EPC contract

Remaining Activities

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- Finalize Design (Spring of 2016)
- Construction (Summer 2016)
- Commercial Operation (Fall 2016)
  - Operation & Maintenance initially contracted with the EPC contractor

End Product

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