Oxford Solar Project

Presented by
Brent Brown, Construction Project Manager

Southern Ute Indian Tribe
Ignacio, Colorado
November 13th, 2017
Historic Ute Land

Uintah

Yampa

Grand River

Tabeguache

Weeminuche

Capote

Mouache

Utah

Wyoming

Colorado

New Mexico

Ute Hunting Grounds
Southern Ute Statistics Today

- **Tribal Members**: 1,500
- **Reservation**: 1,064 square miles
- **Employment**: The Tribe is the largest employer in La Plata County with more than 1,300 employees.
Solar Feasibility Study

Conducted a broad study of solar energy options (2012-2013)

- Goals
  - Identify Lands best suited for solar PV projects
  - Identify if Utility and/or Commercial scale solar is currently viable on the Reservation
  - Identify needed conditions for economically viable projects

- High level analysis of solar energy opportunity within Reservation boundaries
  - Utility Scale – wholesale energy, ground mount, greater than 1MW
  - Commercial Scale – net metered, roof mount, less than 1MW

- Solar photovoltaic (PV) technology
  - Low Technology Risk
  - Rapid Price Decline
  - Widely Deployed
Solar Feasibility Study

Identified most suitable areas for utility scale solar

- Utilized site based parameters that impact energy generation, development cost and/or development risk
  - Proximity to transmission infrastructure
  - Proximity to roads
  - Topography (slope, aspect and flood plains)
  - Solar resource
  - Land Ownership
  - Habitat for threatened and/or endangered species
  - Others

- Utilized GIS data and developed parameter weighted scoring methodology to compare sites (Solar Suitability Score)

- Collected data and mapped all Reservation lands

- Selected 8 most promising areas
GIS Based Solar Suitability

Project Location

Legend
- Areas of Interest
- Solar Suitability Scores
  - Red Areas More Suitable
  - 0 - 418
  - 419 - 461
  - 462 - 493
  - 494 - 518
  - 519 - 544
  - 545 - 584
  - 585 - 680
- + Tribal Boundary

Areas:
- Area 1
- Area 2
- Area 3
- Area 4
- Area 5 (DISMISSED)
- Area 6 (DISMISSED)
- Area 7 (DISMISSED)
Does Solar Make Sense?

- Part of Tribe’s overall plan to diversify their businesses
  - Decision started the process in 2006
- We have the solar resource
- The technology became economically feasible
- From 2009-2014 Solar costs dropped over 60%
- Grant was critical to the project

As Industry Scales, Prices Fall

- Blended Average Solar PV Price ($/watt)
- Solar PV Installations (MWdc)

© 2015 GTM Research SEIA
Permitting / Land Access

- Environmental
  - NEPA - Eligible for a Categorical Exclusion due to early farming and ranching activity which disturbed the land

- Geotech
  - Utilized an outside contractor and took extra care in this evaluation

- Land Lease and Rights of Way
  - Right to use and access the land (e.g., Trust land)
  - Complexities
    - BIA water ditches
    - Private property
    - Utility rights of way and infrastructure
    - Oil and gas infrastructure
Discussions included:

- **Interconnection Agreement**
  - Negotiated with local electric utility
  - Defines the terms under which the project can connect to the grid

- **Power Purchase Agreement**
  - Defines the rates the project will be paid for the energy provided to the buyer
  - Power purchased at $0.072/kWh
Finalize Design (Summer of 2016)

- ~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
Construction Overview

Construction Started (Fall 2016)
Construction Overview

Underground Conduit

Pile Structures

Inverter Assembly
Construction Overview

- Energize and Test the Array
- Commission the System
- Commercial Operation (Spring 2017)
Construction Overview
Site Stabilized
Tri-State Installing Monitoring Equipment
Monitoring Program

Southern Ute

Tuesday, November 07, 2017 2:23 PM
Sun azimuth: 224.2 elevation: 23.7
View More...

28 Tons of carbon
doxxide savings this month

971 Tons of carbon dioxide
lifetime savings

Devices

Olbrivus Gateway
Last update: 9 minutes ago

Cell Modem
Last update: 8 minutes ago

Production Meter (MarkII)
Last update: 8 minutes ago

Solectria 36TL #1
5.1 kW
Last update: 9 minutes ago

Solectria 36TL #2
5.2 kW
Last update: 9 minutes ago

Solectria 36TL #3
5.1 kW
Last update: 9 minutes ago

Solectria 36TL #4
5.3 kW
Last update: 9 minutes ago

Solectria 36TL #5
5.2 kW
Last update: 9 minutes ago

Solectria 36TL #6
5.1 kW
Last update: 9 minutes ago

Solectria 36TL #7
5.1 kW
Last update: 9 minutes ago

Data

Data Download
Analyzer "New"
Timeline
Summary
Map
Scheduled Reports
Report Wizard
Rule Tool

Maintenance

Site Setup
Hardware
Site Alerts

My Account

Settings

Monitoring Program

139 kW

AC Power

51/24
56/16
60/20

Mon

Tue

Wed

Thu

Fri

50

High: 53
Low: 31
Sunrise: 6:38 AM
Sunset: 4:55 PM

Sect. 26, T 34N, R 8W
LaPlata County
Durango, CO 81317
USA

Acquire/Report:
http://166.211.230.21:8880/setup/

carbon

AlsoEnergy
Dedication Ceremony July 24th, 2017

Tribal Council Members: Kevin Frost, Lorelei Cloud, Adam Red, Tyson Thompson

Photo courtesy of the Southern Ute Drum - Ignacio, CO
Governor Hickenlooper Inspecting the Array
Lessons Learned

- Start negotiations with your area electric company early in the project in order to reach agreement for the power purchase and interconnection.

- Submit the archeological, environmental and wildlife studies to the appropriate agency early in the planning stages in order to obtain the FONSI.

- Contract a local solar company for the post construction operation and maintenance of the facility.

- Work closely with the regional BIA agency to obtain all required easements and right of ways.

- Be prompt with the required grant quarterly reporting.
What We Have Earned

La Plata Electric Payments Received

- June 2017: $11,837
- July 2017: $16,840
- August 2017: $19,199
- September 2017: $16,614
Questions?

Contact Information

Brent Brown
Construction Project Manager

bbrown@sugf.com
970-764-6420

Hayes Briskey
Utilities Manager

hbriskey@sugf.com
970 563-5502