Spirit Lake Tribe

1.5 MW Community Wind Turbine Project

Presented by

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DOE Annual Program Review

December 2018



Presentation Outline



- Background of Spirit Lake Tribe
- Project Overview & Location
- Progress to-date
- Project Participants
- Next steps
- Questions



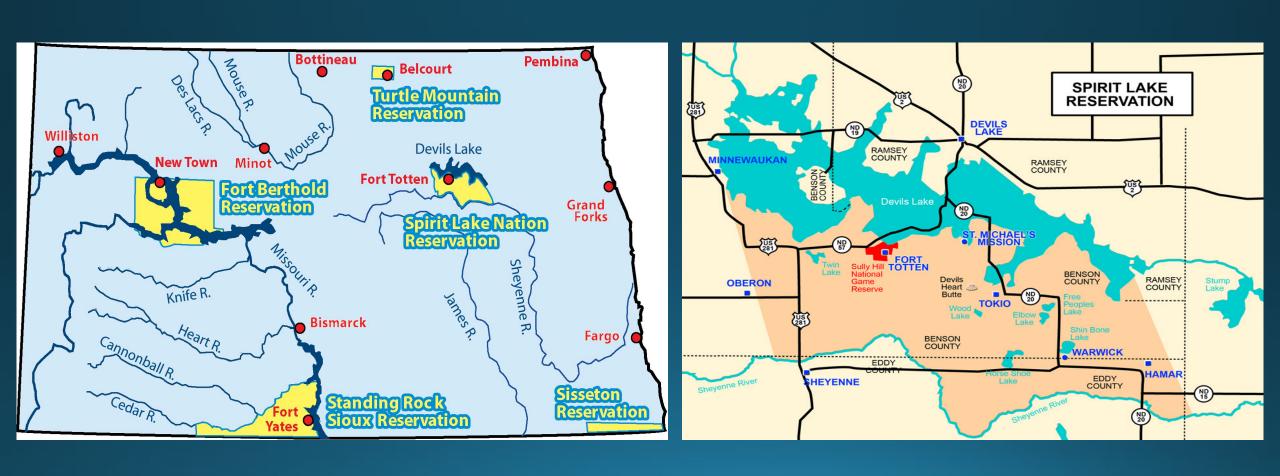
Background

- Located in east-central North Dakota
- Federally Recognized Treaty of 1867 between US Government and Sisseton Wahpeton Sioux Bands
- Tribal Leadership consists of Chairperson, Secretary-Treasurer, and Four District Representatives (one District Representatives voted as Vice Chair)
 - Crow Hill, Fort Totten, Mission and Woodlake Districts
- 245,000 acres (383 square miles)
 - 93,000 acres Tribally owned, allotted trust, and government
 - 152,000 acres Fee Land
- Enrollment
 - 7,256 members but only 2,069 reside within the boundaries





Map of Spirit Lake Reservation



Background (continued)

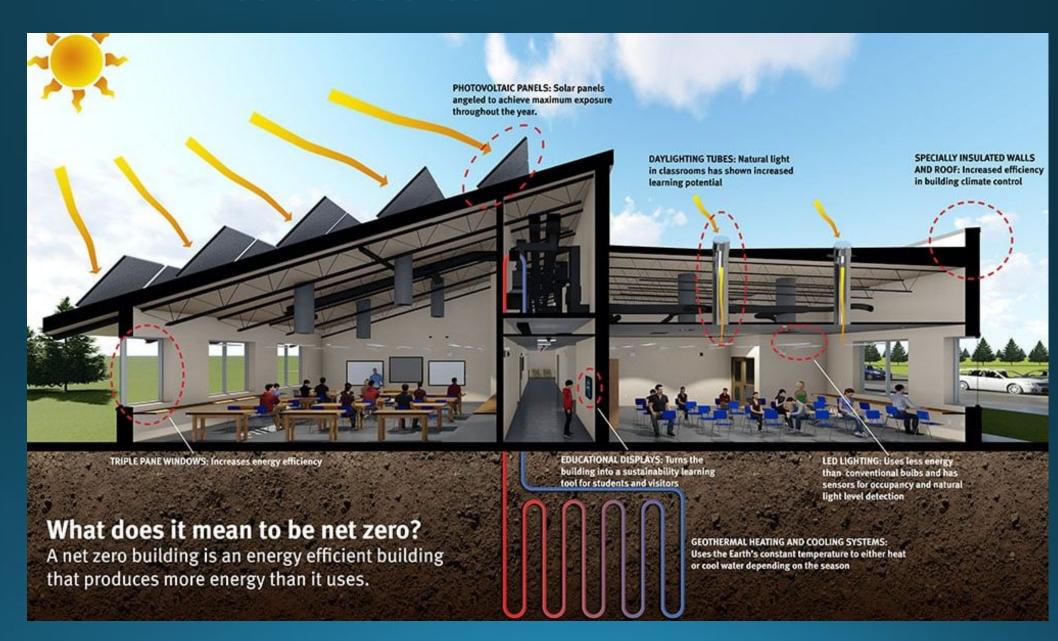
AKE PIBE

- Changed IHS Clinic to Spirit Lake Health Center June 1, 2016
 - Control of contract and operations Self Governance
 - Still receive federal dollars
- First Net Zero School on Tribal Land December 13, 2017
- Previous efforts with Wind Energy
 - Micon 108 Wind Turbine
 - Installed in 1997-98, lasted about 10 years
 - Used from Palm Springs
- Early 2000's Spirit Lake Tribe proposed a
 49.5 MW Wind Farm Project



Net Zero School

- Geothermal Heating and Cooling System
- Solar Panels
- Daylighting Tubes
- LED Lighting
- Insulated walls and roof
- Educational displays

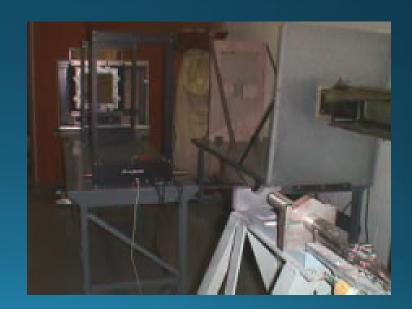


Tribal Entities

• Sioux Manufacturing Corporation – 250,000 sq ft

- Opened doors in 1974 as a joint venture with Brunswick Corporation
- DoD funded contracts through Small Business Administrations 8(a) program and included manufacture of camouflage systems for the U.S. Army and other DoD elements
- 1989, Spirit Lake Tribe purchased remaining share from Brunswick Corp and gained full ownership
- Currently manufactures composite armor made from Kevlar, S-2 Glass, Spectra Shield and E-Glass





Tribal Entities (continued)

Spirit Lake Housing Corporation – The Spirit Lake Housing corporation will provide low income, quality housing in a safe and healthy environment to the people of the Mni Wkan Oyate.







CCCC provides opportunities that lead to student independence and selfsufficiency through academic achievement and continuation of the Spirit Lake Dakota language and culture.

The Mission of the Four Winds Community School is to produce learners who excel academically, physically, spiritually, and socially by expanding curriculum and activities, increasing community involvement and integrating culture in the school environment



Tribal Entities (continued)

- Spirit Lake Casino and Resort
 - June 1, 1996
 - 49,000 sq ft
 - \$7 million cost
 - 35 new jobs







Project Overview

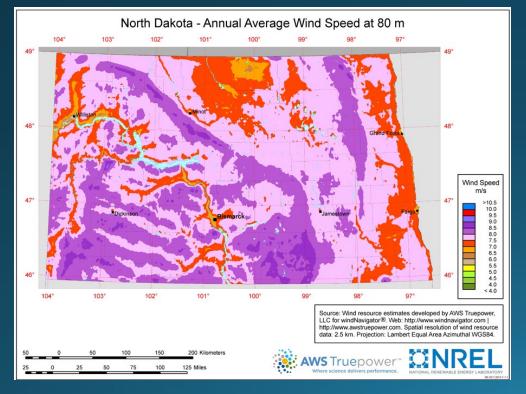
- Project will address the energy cost on the Spirit Lake Reservation
- Currently served by three different power companies
 - 1. Ottertail Power Company
 - 2. Northern Plains Electric Co-op
 - 3. Nodak Electric Co-op
- Project goal is to reduce the electrical energy use of Tribal and Residential buildings within the boundaries of Spirit lake Nation
- Small Scale and Large Scale Wind Turbine Project
- Energy Analysis and Organizational Assessment
- Energy and Mineral Development Program (EMDP) Grants
- Tribal Energy Development Capacity (TEDC) Grants

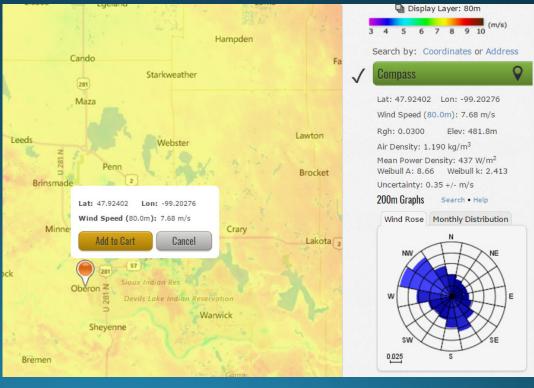
Project Model: Energy Project development in context of TUA



Project Location

- ND has the best wind resource in US but only 16% of its electricity generation is from wind
- Fort Totten, MD: Estimated wind speed = 8.2 m/s
 - Good wind resource for an economically feasible project
- Capacity factor: 44-48%
- Likely Vinsys 1.5 MW Turbine

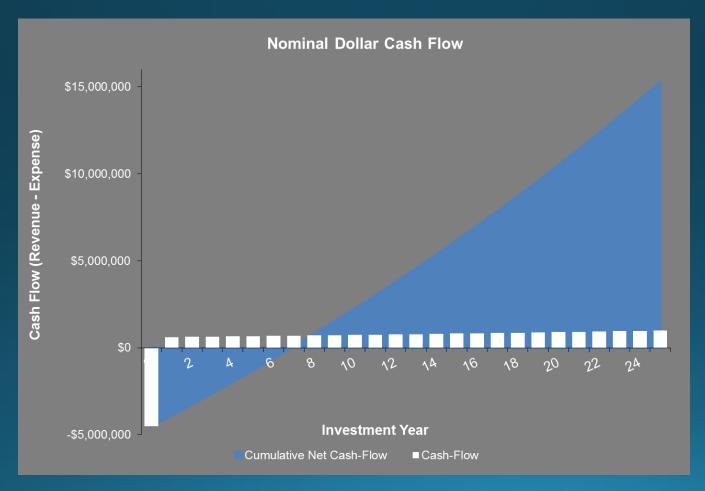




Project Pro-Forma

| Power Output (kWh/year) | 5,501,664 |
|--|-----------------|
| Average Cost of Electricity (\$/kWh) | \$ 0.12 |
| Nominal Electricity Escalation Rate (%/year) | 2% |
| Analysis Period (Years) | 25 |
| Total Installed Cost / Lease Initial Cost | \$ 4,500,000 |

| Payback Period (SPB) | 7 |
|-------------------------|-------------|
| Rate of Return (IRR) | 15% |
| Net Present Value (NPV) | \$9,469,808 |



Key strategic element – control of interconnecting means

- Two substations located on trust lands
 - Otter Tail Power Company
 - Central Power Electric Co-op







SLT Roadmap

Spirit Lake Tribal Utility Roadmap



This is a living document, and should be updated quarterly.

Long-term Short-term Medium-term <12 months 2-3 years 4 years + Year 1 Year 4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q2 Q3 Establish baseline and advanced GIS map Hire TUA GM and Clerk Finalize Tribal Organizational utilization capacity (R. Brown) Government Org Chart w/Placeholder Establish formal TUA charter for Future TUA Establish System for aggregation and distribution/utilization of LIHEAP and/or WAPA Credits Explore implementation of the Determine leverage with Implement Hearth Hearth Act as it relates to three utilities (OTP, NoDak, Act Leasing implementation of energy and NP) and execute strategy Regulations other projects on trust land Initiatives Explore other agreements/partnership Confirm wind opportunities for large scale development Review GIS mapped energy energy project revenues based on leverage and asset mapping assets relative to fee/trust site control and land, ownership, ROW issues refresh Meet with Otter Tail appropriate Power, discuss wind documents Explore opportunities, if any, for aqusition projects and prior legal/ Continue dialogue with of distribution assets regulatory history on Otter Tail Power reservation Development and implementation of small (1 turbine) wind project Explore and implement large scale wind project (20 MW) with project partner Additional large scale wind projects within reservation boundaries Energy Develop energy efficiency program for tribal member housing to offset winter heating bills : Indicates a new hire

Participants

- Ryan Brown, Project Manger, Spirit Lake Tribal Planning Department
- Baker Tilly Virchow Krause, LLP
- WES Engineering
- Spirit Lake Tribal Council
- Department of Energy, Office of Indian Energy and Economic Development







Next Steps

- Spirit Lake Tribe and Baker Tilly will work on Establishing Tribal Utility Authority (TUA)
- Completing Environmental Assessment on 1.5 MW Wind Turbine Project site
- Provide Tribal Council with quarterly update in January/February
- Legal and Regulatory assessment



Questions???

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Happy Holidays Safe Travels Home