PRESENTATION OUTLINE

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

- Located in east-central North Dakota
- Federally Recognized - Treaty of 1867 between US Government and SissetonWahpeton 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)
  - 38% or 93,000 acres – Tribally owned, allotted trust, and government
  - 62% or 152,000 acres – Fee Land
- Enrollment
  - 7,577 members but only
  - 3,674 reside within the boundaries
MAP OF SPIRIT LAKE RESERVATION
• 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
IHS Clinic to Spirit Lake Health Center – June 1, 2016

- Control of compact and operations – Title V Self Governance
- Still receive federal dollars
- Currently process own 3rd party billing
NET ZERO SCHOOL
FIRST NET ZERO SCHOOL ON TRIBAL LANDS
DECEMBER 13, 2017

What does it mean to be net zero?
A net zero building is an energy efficient building that produces more energy than it uses.

- Geothermal Heating and Cooling System
- Solar Panels
- Daylighting Tubes
- LED Lighting
- High-efficiency water-to-air heat pumps
- Insulated walls and roof
- Triple pane windows
- Educational displays
NET ZERO SCHOOL
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 of which we graduated in 1986
  - 1989, Spirit Lake Tribe purchased remaining share from Brunswick Corp and gained full ownership
  - In late 1980’s produced composite spall liners from aramid “Kevlar” and fiberglass materials.

**Currently Manufactured in 2020**
- Woven Aramid (Kevlar) Fabric
- Aramid/Phenolic Prepreg
- Spall Liners for Combat Ground Vehicles
- Blast Resistant Floors for Commercial Vehicles
- Ablative Tills for Vertical Launch Systems
- Bonded Ablative/Steel Assemblies
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 Wkaŋ Oyate.

CCCC provides opportunities that lead to student independence and self-sufficiency 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.
Spirit Lake Casino and Resort
- June 1, 1996
- 49,000 sq.ft.
- $7 million cost
- 35 new jobs
TRIBAL ENTITIES (CONTINUED)
* 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 the Spirit Lake Reservation
* Small Scale and Large Scale Wind Turbine Project
* Energy Analysis and Organizational Assessment
* Prior Tribal Utility Development frames this project
The tribe is served by 3 utilities:
- Otter Tail Power Company
- Northern Plains Electric Co-op
- Nodak Electric Co-op

* Missing some large loads that are on the reservation

<table>
<thead>
<tr>
<th>Utility</th>
<th>Total Usage (kWhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otter Tail</td>
<td>15,105,886</td>
</tr>
<tr>
<td>Northern Plains</td>
<td>6,032,280</td>
</tr>
<tr>
<td>Nodak</td>
<td>3,263,172</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>24,401,338</strong></td>
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</tbody>
</table>

Missing Loads:
- Dakota Tribal Industries
- Spirit Lake Fire Department
- BIA Correctional Facilities
- Warwick Public School
- Oberon Grain Elevator
- Fort Totten Historical Site
- Oberon School
- Sully's Hill National Game Preserve
- Spirit Lake Roads Department
- Other smaller loads
ENERGY ANALYSIS – COST OF SERVICE

Residential is the largest load followed by Casino and Hotel

- Estimated Electric Load: 24,401 MWh/year
- Total annual electricity spend: $2.27MM
- Includes Gen, Trans, Distribution
KEY STRATEGIC ELEMENT – CONTROL OF INTERCONNECTING MEANS

- Two substations located on trust lands
  - Otter Tail Power Company
  - Central Power Electric Co-op
PROJECT MODEL: ENERGY PROJECT DEVELOPMENT IN CONTEXT OF TUA

- **LIHEAP**: Low-Income Home Energy Assistance Program
  - $300K LIHEAP

- **DG Wind Project**: ~$45K avoided energy costs

- **TUA**
  - SustainMIB
  - Electric Utility Services

- **WAPA**: $235K WAPA Credit
  - Lease and Dev fee $350K

- **Large Wind Project**

- **Tribal members**
• ND has the best wind resource in US but only 16% of its electricity generation is from wind
• Fort Totten, ND: Estimated wind speed = 8.2 m/s
  • Good wind resource for an economically feasible project
• Capacity factor: 44-48%
### PROJECT PRO-FORMA

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Power Output (kWh/year)</td>
<td>5,501,664</td>
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<tr>
<td>Average Cost of Electricity ($/kWh)</td>
<td>$ 0.12</td>
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<tr>
<td>Nominal Electricity Escalation Rate (%/year)</td>
<td>2%</td>
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<tr>
<td>Analysis Period (Years)</td>
<td>25</td>
</tr>
<tr>
<td>Total Installed Cost / Lease Initial Cost</td>
<td>$ 4,500,000</td>
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<tr>
<td>Payback Period (SPB)</td>
<td>7</td>
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<tr>
<td>Rate of Return (IRR)</td>
<td>15%</td>
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<tr>
<td>Net Present Value (NPV)</td>
<td>$9,469,808</td>
</tr>
</tbody>
</table>

#### Nominal Dollar Cash Flow

![Nominal Dollar Cash Flow Chart](image)
• Total Project Cost = $4.7 million
  • DOE Grant = $1 million
  • Tribal Cost Match = $500,000

• Remaining Cost Share = $3.2 million
  • Potential Partnership considerations
  • Tribal Funds/Resources
PROJECT PROGRESS

ProgressTimeline:

- Grant Award/Agreement May 1, 2019
- Change of Leadership in May of 2019
- Signed Grant Agreement by TC in Sept 2019
- Change of Chairperson in June of 2020
- Environmental Assessment completed – July 2020
- Began interconnection application with WES engineering – Summer 2020
- Gathered and reviewed ROW data on local substation – October 2020
- Signed new WAPA contract – December 2020

- Quarterly meetings with Tribal Council
- Conversation with THPO
- Discussions with all three power companies
- Choosing another site location

- Identified Cost Share considerations
  - BIA Loan Guarantee Program
  - Internal Tribal Resources
PARTICIPANTS

- Ryan Brown, Economic Development Planner, Spirit Lake Tribe
- Baker Tilly Virchow Krause, LLP
- WES Engineering
- Spirit Lake Tribal Council
- Potential Cost Share Partner
- Department of Energy, Office of Indian Energy
NEXT STEPS

-Spirit Lake Tribe and Baker Tilly will work on Establishing Tribal Utility Authority (TUA)
- Continue to Provide Tribal Council with quarterly updates/meetings
- Plan community engagement/informational meetings
- Continue Legal and Regulatory assessment of Rights of Way for substations and Distribution
- Continue to monitor WAPA Contract for potential credit updates (Yearly)
- Continue Interconnection application and discussions with local utilities
QUESTIONS??

Ryan Brown, Economic Development Planner, Spirit Lake Tribe
sltplanningpm@gondtc.com
701-766-1700

Jim Yockey, Senior Manager, Baker Tilly Virchow Krause, LLP
Jim.Yockey@bakertilly.com
608-240-2696

Jonathan Berry, Consultant, Energy and Utilities, Baker Tilly Virchow Krause, LLP
jonathan.berry@bakertilly.com
512-975-7298