Kaw Nation Wind-Biomass Energy Project – Feasibility Phase

Renewable Energy Development on Tribal Lands
FY 2002 Projects
Marriott City Center Hotel
Denver, CO
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Utility Commissioner
Kaw Nation of Oklahoma
Briefing Outline

- Project Overview
- Objectives
- Project Location
- Project Participants
- Requested Technical Support
In considering Energy Resources it is relevant that the Kaw, or Kanza, utilize the gift of wind power.

The Tribe’s name derived from original “aca” meaning “People of the South Wind”.

The Kanza (for which the state of Kansas takes its name) have revered the South Wind in all ceremonial activities.
Project Overview

Project Goal:

Identify optimal low-cost, renewable energy to serve tribal members and enterprises.... while providing opportunity for sustainable economic expansion on tribal lands.
Objectives
Feasibility Assessment & Subsequent Wind Hybrid Development

- Maximize Tribal Economic Benefits
  - Explore ways to employ Wind power to lower electric rates &/or offset production costs
  - Determine tribal energy requirements for services, enterprises & proposed Chilocco enterprises
  - Determine cost/benefit potential: selling local power vs exporting to regional markets to create revenues

- Create NA Employment opportunities
  - Proposed wind hybrid development will address:
    - # jobs & skills to operate & maintain proposed facilities
    - Staff current & future needs of present tribal ops
    - Staff businesses & services for proposed Chilocco development
Objectives (continued)
Feasibility Assessment & Subsequent Wind Hybrid Development

- Technology Transfer to tribal members, resource & enterprise management
  - Disgen to provide Kaw Nation w/training materials to assess & develop wind facilities
  - Est. skill set within tribal membership
  - Proposed Tech Training Center at Chilocco to focus skills needed for both wind facility ops & those needed for potential business partners
  - Project success will enable enterprise expansion & realization of Tribal energy self-sufficiency
Objectives (continued)
Feasibility Assessment & Subsequent Wind Hybrid Development

- **Energy Sources**
  - Primary: Wind Power
  - Secondary (backup): Form of Biomass
    - Diesel with protein enhancement (soybean)
    - Biomass fuel source using Spectrum Separation Process (SSP) (physiochemical/biochemical-thermal separation process) forming a biofuel used to fuel a generator to produce electric power.
    - Ethanol
Project Location

- Wind sites
- Nation HQ
- Housing or Enterprise
- Med Clinic & Social Services
- Trust Lands
Kay County, Oklahoma
- Chillico Area development of trust lands
- Integrated development

Major Developments
- NA Tech. Training Center
  - Wind Center of Excellence
  - Associated tribal enterprises
  - Other jobs in region
- Aircraft Machine Shop to support regional aircraft manufacture in Wichita, KS
- Operate hybrid Wind-Enhance biomass DEG system to power Chillico enterprises
- American Indian Diabetes Center (5+ yrs)
- Native American Community College at Chillico renewed campus (5+ yrs)
Chilocco, OK
Joint Tribal Ownership
Kaw Ponca Pawnee Otoe-Missouria Tonkawa
Project Location (cont.)
Braman & Newkirk, OK

Braman Kanza Plaza & Deli

Braman 5m Anemometer

Newkirk Complex

Newkirk 20m Anemometer

Health Clinic

Newkirk Casino

Kaw Wind-Biomass Energy Project
Project Location (cont.)

Kaw City, OK
Project Participants

- Kaw Nation
  - Utility Commission
    - Clyde McCauley (Dir)
    - Mike Pappan (V. Dir.)
    - Tom Cooper
    - Bob Gaddis, P.E., P.G.
    - Ken Stamper-to-Water
  - Dr. Dejene Alemayehu (KED)
  - Nation Elders (Cultural Studies)
  - Executive Council
    - Guy Monroe (Chair/CEO)
    - Council members (6)

- Oklahoma Wind Power Initiative (OWPI)
  - Tim Hughes (OU)
  - Steve Stadler (OSU)

- Contractors
  - Dale Osborn, Distributed Generation Systems (Disgen)
    - Ed McCarthy (Met Studies)
    - Curry & Kerlinger (Avian Assessment)

- Intertribal Council on Utility Policy
  - Bob Gough (Sec)

- CERT

- DOE Labs
  - NREL
    - Sandia, Berkley & Argonne

- Local Communities

- Oklahoma Municipal Power Authority (OMPA)
Requested DOE Technical Support

- NREL: Sponsor Liaison
  - DOE Support coordinator
  - Disgen 50-M Tower Installation Workshop (Nov 02)
  - European Wind Machine Evaluation Results
  - Regional Power Transmission Assessment
    - State studies and Midwest ISO Panel (see www.spp.org)

- Sandia: Utility Vulnerability Analysis
  - Training support for tribal utilities

- Berkley: Market Conditions / Competitive Claims

- Argonne: Fuel/Materials Recycling issues
? Questions ?

Your Turn

Wiblahan
(Good-Bye)
School History

- Est. 1884 by US Gov’t ed. W. OK tribes through 8th grade
- Original school built on 8,320 acres purchased from Cherokees
- School based on Industrial Plan
  - Half-day academic subjects
  - Half-day vocational subjects
    - Boys studied Ag pursuits
    - Girls learned domestic arts
    - School produced own food & other items needed
- 1907: Expanded to include all Indian children except Five Civ. Tribes (1-bldg to 35-bldgs)
- After 1910 admits children from Five Civ Tribes
- 1916: Education thru 10th grade
- Late 1930’s: lower Elem. Grades elim.; Jr-Sr high cont.
- After WWII: only high school
  - Between 1930-1959 annual enrolled between 800-1200 students
- Closed June 1980 amid opposition from Indian parents
- Rather than transform nomadic Indians into “civilized” American farmers & citizens, actually reinforced Indian & tribal identity among students
- Trained leaders of western OK tribes for half century, creating bonds of friendship of different tribes
- Chilocco help create pan-Indian identity among Indian people in OK
- After 1980, property in transition without defined use
- 1993 to early-2002: Church of Scientology used portion of school for substance abuse & rehab center
Native American Land Losses
1775 – 1992

Source: R. David Edmunds (Cherokee), 1996, Indiana University (in Encyl. of North American Indians)