Kaw Nation Wind-Biomass Energy Project – Feasibility Phase
DOE Denver Briefing

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Renewable Energy Development on Tribal Lands
FY 2002 Projects
Dept. of Energy Grant
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Kaw Nation Wind-Biomass Energy Project

Feasibility Phase

Briefing Outline

- **Project Overview**
- **Project Location**
- **Project Participants**
- **Objectives**
- **Project Status**
- **Future Plans**
- **Questions**
In considering Energy Resources it is relevant that the Kaw, or Kanza, utilize the gift of wind power.

The Nation’s name derived from three subdivisions:
- Tadje jinga: “Makes-a-breeze-near-the-ground”
- Ak’a unikacinga: “South Wind People”
- Tadje unikacinga: “Wind People”

The Kanza have revered the South Wind in all ceremonial activities. (Kau-zau or Konzas, second syllable scarcely audible)
Project Goal:

Identify optimal low-cost, renewable energy to serve tribal members and enterprises… while providing opportunity for sustainable economic expansion on tribal lands.
Project Location

Wind sites
Nation HQ
Housing or
Enterprise
Med Clinic &
Social Services
Trust Lands

Kaw Nation Wind Energy Project
Project Location (continued)

Chilocco, OK
Joint Tribal Ownership
Kaw Ponca Pawnee Otoe-Missouria Tonkawa
**Project Location (continued)**

- Kay County, Oklahoma
  - Chillico Area development of trust lands
  - Integrated development (Inter-tribal coop)

- **Examples of Major Developments**
  - NA Tech. Training Center
    - Wind Center of Excellence
    - Associated inter-tribal enterprises
    - Other jobs in region
  - Aircraft Machine Shop to support regional aircraft manufacture in Wichita, KS
  - Operate Wind DEG system to power other Chillico developments (e.g.)
    - Native American Diabetes Ctr (5+ yrs)
    - Native American Community College at Chillico renewed campus (5+ yrs)
    - NA School of Government (NCIC)
    - Elder Care Facilities
Project Participants

- Kaw Nation
  - General & Executive Councils
  - Utilities Commission (KNUC)
  - Environmental Dept (KNED)
  - Cultural Cmte (Cultural Studies)

- Chilocco (NC) Inter-Tribal Council & Other NA Nations

- Oklahoma Wind Power Initiative (OWPI, State)

- OG&E Power Distributor
  - Oklahoma Municipal Power Authority (OMPA)
  - SW Power Pool (SPP)

- Kay County communities

- Contractors
  - Dale Osborn, Distributed Generation Systems (Disgen)
    - Ed McCarthy (Met Studies)
    - Western EcoSystems Technologies, Inc. (Avian Assessment)

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

- Council of Energy Resource Tribes (CERT)

- DOE Labs
  - NREL, Sandia, Berkley
Objectives
Feasibility Assessment & Subsequent Wind 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 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 Development

- Technology Transfer to tribal members, resource & enterprise management
  - Disgen to provide Kaw Nation w/training materials to assess & develop wind facilities
  - Establish skill set within tribal membership
  - Project success will enable enterprise expansion & realization of Tribal energy self-sufficiency to offset current energy costs (Facilities Energy Audits/Conservation)

- Develop Energy Sources
  - Primary: Wind Power
  - Supplement: Power company grid distribution capacity
Project Status
Feasibility Assessment & Subsequent Wind Development

- Accomplishments
- Technical & Management Issues
- Activities Yet to Be Completed
In 2002 Department of Energy awarded the Kaw Nation $280K for wind energy feasibility assessment.

Distributed Generation Systems, Inc. (DISGEN) co-wrote the application and is the contractor serving the Kaw Nation.

DISGEN also is a contractor for the Northern Cheyenne in Montana, the Menominee in Wisconsin and the Rosebud Sioux in South Dakota.
Project Status (continued)

Accomplishments

- **Resource Assessment (70%)**
  - A meteorological tower was installed at Chilocco in November 2002 and data is recorded monthly. First yrs data collected.
  - The wind speed has averaged 15.0 mph to date, better than expected. Little variability in wind resource power potential.

- **Transmission Capability & Power Market Assessment (70%)**
  - Prelim discussions w/ transmission entities indicate a willingness to work with the Kaw Nation on the project.
  - Includes Southwest Power Pool, OG&E and OMPA

- **Phase I Environmental Impact Assessment (60%)**
  - A preliminary avian assessment has been completed with no significant impacts identified.
  - KNED preparing for other NEPA studies
Project Status

Accomplishments (continued)

- Cultural & Socioeconomic Impacts (50%)
  - Cultural studies will be completed before the end of 2003.
  - NA member interviews to be continued in development phase
  - GPR conducted at selected locations to ID FFA & define more detail work requirements during Development Phase.
  - Evaluating biomass potential, so far see limitations:
    - USDA & ODA NCOK studies reviewed
    - Feedstock transportation costs likely prohibitive
    - Long-term biomass fuel sources limited, energy gencap limited
    - Attending support infrastructure needs development along with byproduct marketing studies

- Doc & Rpt on Econ Benefits & Business Plan Develop. (40%)
  - Currently completing Pro-forma & Proj. Econ Evaluations
  - The Feasibility Study will be completed in early 2004.
Project Status (continued)
Technical & Management Issues

- Wind Resource Adequate
  - Small variations month to month, steady power
  - Class 3-4 Wind Resource at 50m
  - Grid and farm production feasible

- Management Issues
  - Personnel changes overcome
  - GC education on Wind Energy issues and building KN community interest continues
  - FP cost & schedule in line for timely completion
Chilocco, OK

Test Site

Project Status
Technical & Management
Issues (continued)

Kaw Nation Wind Energy Project
Chiloko 50-m Aerometer

Project Status
Technical & Management Issues (continued)
Project Status
Technical & Management Issues (continued)

Chiloco Test Site Mean Monthly Wind Speed

Mean Wind Speed (mph)

Mean Temperature (deg F)

Nov-02 Dec-02 Jan-03 Feb-03 Mar-03 Apr-03 May-03 Jun-03 Jul-03 Aug-03 Sep-03

Kaw Nation Wind Energy Project
Activities to be Completed

- By late November complete cultural studies and provide requirements for development phase.

- By early December 2003, the economic model will be completed. The potential economic benefits to Kaw Nation will be better defined.

- Complete the Feasibility Report and provide pro forma economics & Business plan by early Jan 2004.
Future Plans

- Options for Tribal ownership or third party financing will be analyzed and explained for EC/GC decision.

- By end Jan 2004, the Nation will decide whether or not to apply for a Development Grant.

- Obtain direction by Resolution from Kaw Nation on the Development Grant Application.

- Prepare Grant Application for review and approval by EC for DOE submittal.
? Questions ?

Your Turn

Wiblahan
(Good-Bye)

Kaw Nation Wind Energy Project