



# Iowa Tribe of Oklahoma





The Iowa Tribe of Oklahoma is a federally recognized Indian Tribe eligible for the special programs and services provided by the United States to Indian Tribes, and is recognized as possessing and exercising powers of self-government.



# Mission

The overall objective of the Tribe is to improve the economic and social quality of life for Tribal members and adjacent communities, and to secure the rights, powers and privileges common to a sovereign entity of government. The strengthening of the powers of the Iowa Tribe of Oklahoma by expanding government through tribal legislative and judicial methods is an ongoing process. While striving to meet its overall objectives, the Iowa Tribe is committed to preserving its cultural and traditional values.



# Tribal Government and Operations

The Tribe was organized under a Tribal constitution drafted pursuant to the Thomas-Rogers Oklahoma Indian Welfare Act of 1936. The Tribal constitution was amended in 1977, 1985, and 2008. The Tribal constitution empowers a five member elected Business Committee with the authority to act on behalf of the Tribe including the right to engage in any business that will further the economic and social development of the Tribe. Of the 37 tribes that are located in Oklahoma, the Iowa Tribe is one of the smallest.

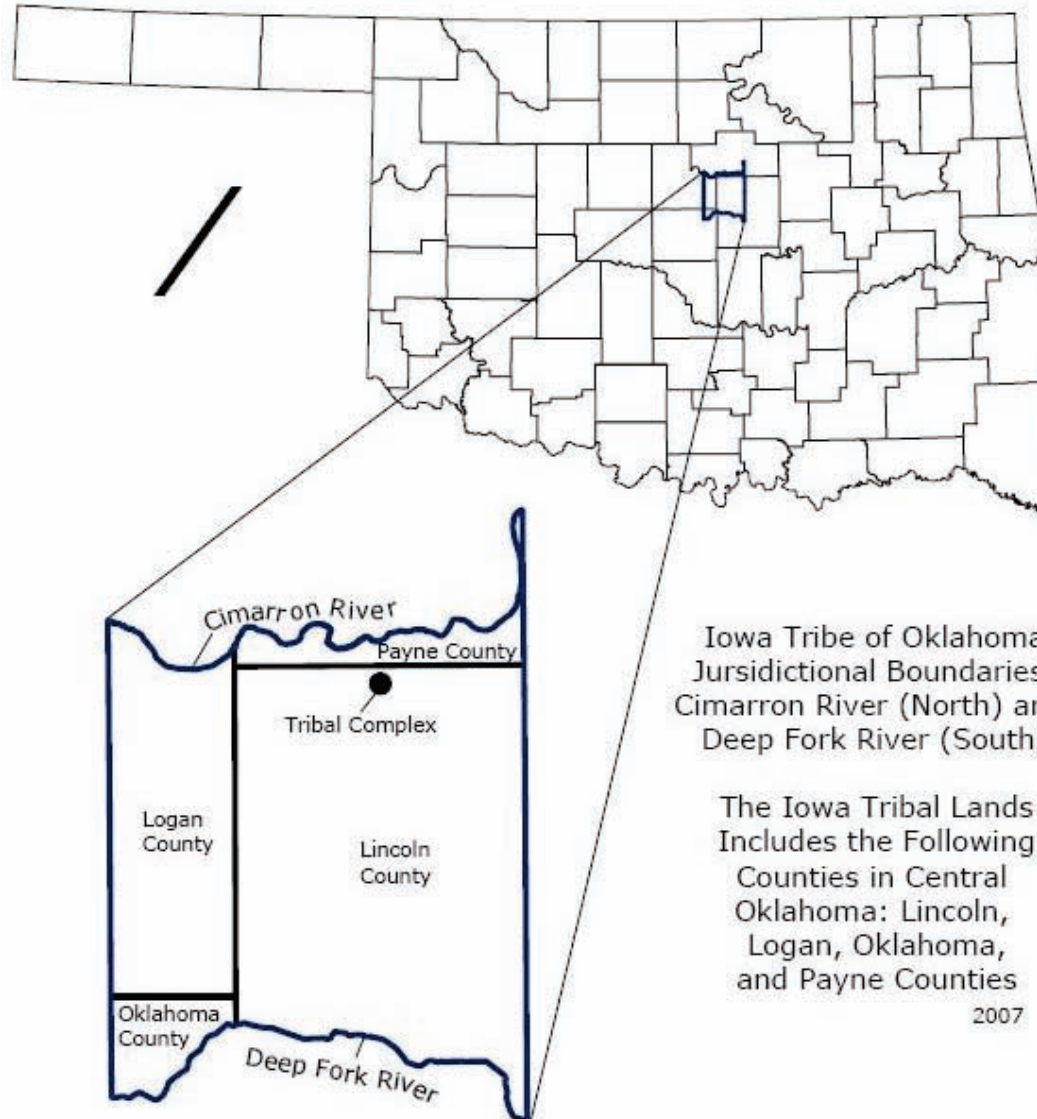
The Iowa Tribal Government primary departments are, as follows:

**Child Care Development**  
**Environmental Services (OES)**  
**Housing**  
**Public Safety**

**Education**  
**Health Services**  
**Social Services**



# Iowa Tribe of Oklahoma's traditional jurisdictional lands



Iowa Tribe of Oklahoma  
Jurisdictional Boundaries:  
Cimarron River (North) and  
Deep Fork River (South)

The Iowa Tribal Lands  
Includes the Following  
Counties in Central  
Oklahoma: Lincoln,  
Logan, Oklahoma,  
and Payne Counties

2007



# Wind Energy



# Wind Energy – project overview

## Long term goal:

Commercially viable wind energy farm to offset the Tribe's electrical loads and sell the excess power back into the grid to provide the much-needed renewable energy source to local utilities and neighboring communities.



# Wind Energy - project objectives

Excerpted from the Tribe's INTERGRATED RESOURCES MANAGEMENT PLAN:

## RESOURCE MANAGEMENT: WIND ENERGY PROGRAM

Management goals:

- 1). Enhance the Tribe's utility infrastructure by pursuing wind energy technology.

Management objectives:

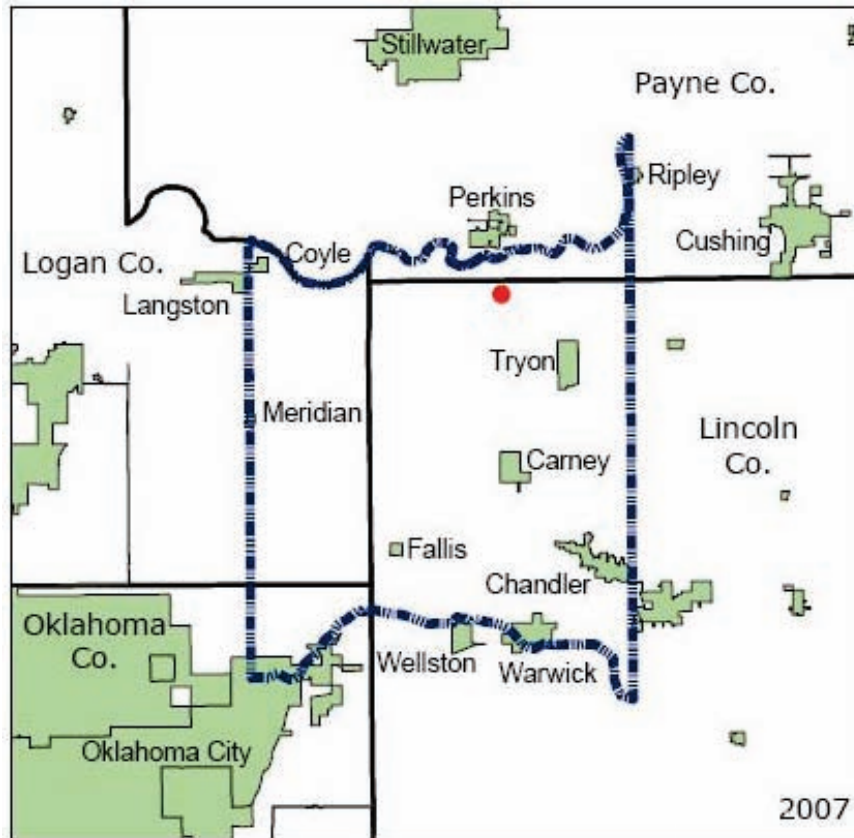
- 1). Identify and address technical issues concerning wind energy development.
- 2). Conduct an in-depth feasibility study of wind energy to evaluate the actual value of wind turbine generated energy for the Iowa Tribe and community.
- 3). Identify and address environmental issues concerning wind energy development and educate stakeholders about the challenges of implementation.





# Wind Energy – project location

2 1/2 miles south of Perkins, Oklahoma at an elevation of 970 feet. (N 35.915°, W 97.020°)



**The Iowa Tribe of Oklahoma's traditional jurisdictional area: South of the Cimarron River, North of the Deep Fork River, West of the "Ripley" Road, East of the Indian Meridian.**



# Wind Energy – project participants

Iowa Tribe of Oklahoma is project manager.



# Wind Energy – background information

Significant project milestones to date:

- From June 4, 2001 to July 15, 2002 the Iowa Tribe participated in a wind-monitoring program, the Native American Anemometer Loan Program, with the U.S. Department of Energy - National Renewable Energy Laboratory (NREL).
- From 2004 - 2007; the Iowa Tribe developed, and adopted an Integrated Resource Management Plan (IRMP).
- During 2008 the Iowa Tribe hires staff to oversee the Wind Energy Project.
- From August 2008 through 2009 an extensive search for highly qualified Technical Consultant.



# Wind Energy – background information

## Results of Native American Anemometer Loan Program with NREL

As part of the WAPA Anemometer Loan Program an anemometer was installed on land belonging to the Iowa Tribe of Oklahoma near Perkins, Oklahoma to determine the reservation's wind energy potential. The monitoring period ran from 4 June 2001 to 15 July 2002. The annual average wind speed (at 20 meters [66']) measured at the site was 5.0 m/s (11.1 mph). Comparison with long term data from nearby sites indicates that the monitoring period data represents an average or slightly above average year. The best estimates for the adjusted long term average wind speed and power density are 4.7 m/s (10.6 mph) and 117 watts/m<sup>2</sup>, respectively.

The monitoring site was located about 2 1/2 miles south of Perkins, Oklahoma at an elevation of 970 feet. (N 35.915°, W 97.020°)

The instrumentation consisted of an NRG Wind Explorer system including cup anemometer, wind vane and data logger. The instruments were mounted at a height of 20 meters (66') on a tilt up tubular tower. The data consists of 10-minute average wind speed, wind speed standard deviation and wind direction.



# Wind Energy – background information

Results of Native American Anemometer Loan Program with NREL

Annual Average Wind Speed & Power Density:	5.0 m/s (11.1 mph) /136 watts/m <sup>2</sup>
Month with best wind resource:	March
Average wind speed and power density for best month:	6.2 m/s (14.0 mph) /244 watts/m <sup>2</sup>
Month with worst wind resource:	September
Average wind speed and power density for worst month:	3.7 m/s (8.3 mph) / 65 watts/m <sup>2</sup>
Adjusted Annual Average Wind Speed & Power Density:	4.7 m/s (10.6 mph) /117 watts/ m <sup>2</sup>



# Wind Energy – background information

Picture taken of the project area which represents the consistent wind blowing from the SSE (which is the prevailing wind in that area). Notice the trees bending north in the direction of the wind.



# Wind Energy - project objectives

## Scheduled action steps:

.Conduct a wind resource assessment: purchase, install, and manage a RISO compliant, turbine hub height (80 meter / 240 feet) anemometer and collect data.

.Data collection, data verification and certification; such verification procedures are required for negotiation of power purchase agreements and as collateral for financing.

.Data analysis to determine the feasibility of constructing a commercial scale wind energy project to offset local and distributed electrical loads and sell the excess power back into the grid.



# Wind Energy - project objectives

Scheduled action steps (continued):

- .Economic assessment for wind turbines that would be sited on tribal lands based on wind data and wind performance data.
- .Environmental assessment for cultural resources, natural resources and avian.
- .Completion of business plan and model.
- .Obtain letters of intent for the sale of excess energy.

