

Kansas Wind Applications Center (WAC) activities as of October 2009

The WAC at Kansas State University was established with funding from DOE/NREL starting in February, 2008. Our missions are to educate young engineers on the basics of wind energy, to increase interest and understanding of wind energy among K-12 students, and to be a source of information on wind energy for the people of Kansas, who want to harvest wind power for the benefit of themselves, their children and the state. Our primary activities fit into three categories: Wind for Schools; course and curriculum development in the College of Engineering at KSU; and research in wind energy at KSU.

Wind for Schools:

List of all Accepted Schools

Academic Year 2007-8

Concordia School District USD 333 CONCORDIA, KS 66901

EII-Saline USD 307 BROOKVILLE, KS 67425

Fairfield High School USD 310, LANGDON, KS 67583

Sterling USD 376 STERLING, KS 67579

Walton Rural Life Charter Elementary – Newton Public Schools USD 373, WALTON, KS 67151

Kansas State University , Manhattan, KS 66506

Academic Year 2008-9

Pretty Prairie, KS (USD 311)

Blue Valley Schools, Randolph, KS (USD 384, Riley Co.)

Deerfield, KS (USD 216, Kearny Co.)

Rolla HS, Rolla KS (USD 217, Morton, Co)

Southeast Kansas Education Service Center Interlocal 609 (Greenbush) , Girard, Kansas 66743

South Barber District, Kiowa, KS (USD 255, Barber Co)

Academic Year 2009-10

Colby County Community College, Colby, KS

Appanoose Elementary School, USD 287, KS 66076

Hope Street Academy, Topeka, KS 66604

Solomon Schools USD 393, KS 67480

Lindsborg, USD 400, Smoky Valley KS

Goessel, KS

Hutchinson School District, USD 308

From the schools selected for the year 2008, Rolla HS USD 217 and South Barber USD 255 withdrew, wishing to pursue larger-sized turbines that would contribute significantly to their electricity needs. Deerfield USD 216 has the project on hold due to budget cuts. Consequently we have accepted applications from two more schools: Goessel, KS and Hutchinson School District, USD 308 for the Year 2009 against the normal five schools per year.

From the above list **9 schools (in bold font)** in total have turbines up and turning including the one at Kansas State University.

Schools with wind data streaming live online:

Blue Valley School District, Randolph:

http://wind-for-schools.caesenergy.org/windforschoolsweb/blue_valley.html

Greenbush:

<http://view2.fatspaniel.net/PV2Web/merge?&view=PV/detail/HostedAdmin&eid=172683>

(click on the "Detail" tab)

WAC Classes and Curriculum at KSU

The WAC in the Department of Electrical and Computer Engineering offers a Wind and Solar Energy class, taught first in Spring 2008. In the first semester 15 students were enrolled, mostly Electrical Engineering majors. In Fall 2009, the class has 30 students from various majors, as given below:

Electrical Engineering – 10

Mechanical Engineering – 10

Industrial Engineering, Architectural Engineering & BioAg Engineering – 10

Out of the 30 students, we have 4 students pursuing their Masters and the rest pursuing their Bachelor's degree. The students are working on design projects as listed below:

Current Projects

Lindsborg – Wind for Schools 2009

Goessel – Wind for Schools 2009

Appanoose (W Franklin Dist) –Wind for Schools 2009

Hope Street/Topeka Public Schools – Wind for Schools 2009

Hutchinson/State Fair/Met Tower

Colby Community College/Met Tower

Manhattan Met Tower

Enterprise, KS wind resource estimation

Solar power for the KSU Amateur Radio Club "Shack"

Solar-powered Donut-store Sign

Wind Turbine Design: aerodynamics and electronics

Other Wind- and Solar- related activities at Kansas State University

A \$700,000 appropriation from DOE to fund the Kansas Wind Energy Consortium (KWEC) has been obtained with the contract being finalized this month. The KWEC includes Kansas State University and Wichita State University.

Five faculty members are involved in an NSF-funded grant to incorporate sustainability concepts into the Electrical and Computer Engineering curriculum. The grant currently supports one graduate student and approximately 4 undergraduate students working on teaching resources in sustainability, notably solar and wind energy. Initially changes and assessments are being made in four courses including the Wind and Solar Energy course.

One large proposal has been submitted to DOE with University of Nebraska--Lincoln and Wichita State University. Two other smaller proposals to the Department of Energy (DOE) and the Kansas Department of Transportation (KDOT) are in progress for wind-related research. There are ongoing conversations to collaborate more with Wichita State University as well.