THE ECONOMIC AND FISCAL BENEFITS OF THE SHADY OAKS WIND FARM

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FOREWORD

By the end of April 2012, the Shady Oaks Wind Farm construction project undertaken by Goldwind USA, was complete. The utility-scale 109.5-megawatt power generation facility located in Lee County, Illinois consists of 71 Goldwind turbines utilizing permanent magnetic direct-drive technology.

The proposal of a new wind farm project is often accompanied with promises of positive economic benefits such as job creation and additional tax revenue. One is apt to speculate that these assumed benefits may be optimistic and overstated. Upon completion of most new electricity generation projects, a retrospective accounting of net economic gains to the area is rarely made or communicated. ARC Perspectives, Inc. was retained to research and illustrate the economic impact of the construction of the Shady Oaks Wind Farm both through the period of construction and during its operations. In addition to Illinois, two major participating suppliers located in North Dakota and Wisconsin were included in the study to give a more complete picture of the economic ripple-effect of the Shady Oaks Wind Farm development throughout the United States.

EXECUTIVE SUMMARY

The results of this study showed significant economic impacts in Illinois and throughout the United States from Goldwind USA's Shady Oaks Wind Farm development. Local fiscal benefits were found to be significant to the local governments, schools, and landowners.

Highly skilled engineers, construction workers, and managers living in Northwest Illinois tend to commute long distances to work. During the construction phase, Shady Oaks helped to keep jobs local, especially during times of economic downturn. Factories located in Wisconsin and North Dakota dependent on the wind industry were able to keep their workers employed.

During the operating life of the Shady Oaks Wind Farm, the security of land lease payments, property tax revenues, and permanent jobs will have a long-term impact on the local rural economy. Small, local school districts are able to plan on a revenue stream that is not threatened by declines in property values or state revenues.

KEY FINDINGS

ECONOMIC BENEFITS:

During the manufacture of equipment and the construction phase (through February 2012), the Shady Oaks Wind Farm generated total economic benefits of over $125 million in the United States including: › 916 full-time equivalent jobs with a payroll of over $42 million [a] › $83 million additional dollars flowing into local economies from project-related activities [b]	$125 million
It is estimated that during the 20-year operation of the Shady Oaks Wind Farm $80 million will be added to the local economies including: › 24.5 full-time permanent jobs with a payroll of about $1.4 million per year [c] › $2.6 million additional dollars from operations-related activities each year [b]	$80 million

FISCAL BENEFITS:

Based on the 2010 tax rates, the Shady Oaks Wind Farm will generate $16 million in property taxes over 20 years [d]	$16 million
Participating landowners will receive $8.7 million in lease payments over 20 years	$8.7 million
Total Economic and Fiscal Benefits for 20 years:	**$229.7 million**

Some numbers have been rounded and may not add exactly. This analysis considers the economic and fiscal benefits in 2012 US dollars.

a) A full-time equivalent job is based on a full-time work year, calculated as 40 hours per week for 52 weeks (2080 hours).

b) Additional dollars refer to economic activity or the value of production, the resulting increase of demands and services in the economy.

c) Full-time permanent jobs are those positions lasting throughout the 20-year operation period.

d) Future property tax estimates are based on the Illinois Department of Revenue's valuation formula for wind energy device valuation and current tax levies.

Wind Energy in the United States

According to the U.S. Departments of Energy's 2008 study, *20% Wind by 2030: Increasing Wind Energy's Contributions to U.S. Electricity Supply*, the development of wind energy can be part of the solution to address the nation's future growing demand for electricity. It goes on to forecast that the development of the wind industry could support up to 500,000 jobs while creating revenue sources for rural areas.

Along with economic benefits, wind power significantly reduces environmental impact. In addition to producing virtually no emissions, the generation of electricity by wind conserves water resources. The American Wind Energy Association often quotes from the Department of Energy's study that at the 20% wind energy benchmark over 20 billion gallons of water can be saved which otherwise would be used by conventional power sources either through steam or cooling.[1]

Economic Impacts and Ficscal Benefits

ECONOMIC BENEFITS:

Economic impacts described in this study are the effects on the level of economic benefit in the local community, in Illinois, and in the United States as a result of the construction and 20-year operation of the Shady Oaks Wind Farm. Project development, onsite labor impacts, indirect impacts such as turbine and supply chain activities, along with induced impacts are included. Only tangible economic benefits are estimated in this study such as jobs, earnings, and dollars flowing into the economy. No user benefits or social impacts are included.

FISCAL BENEFITS:

Fiscal benefits in the form of public revenue generated through fees and property taxes are included in this study. Future property tax estimates are based on the Illinois Department of Revenue's valuation formula for wind energy device valuation. This study assumes the continuation of this valuation method for the next 20 years. Fiscal benefits are limited to Illinois. Because Shady Oaks was built in a State of Illinois High Impact area designed to encourage the construction of wind farms, no state sales tax revenue was realized.

[1] United States Department of Energy. (2008). 20% *Wind Energy by 2030: Increasing Wind Energy Contribution to U.S. Electricity Supply*. DOE/GO-102008-2578. Retrieved 26 April 2012, from www.nrel.gov/docs/fy08osti/41869.pdf

Methodology

DEFINED GEOGRAPHIC AREA:

This analysis estimates benefits in three geographical areas along with a master summary of the economic and fiscal representing impacts in the United States. The economic benefits in each area are individual, non-additive impacts.

The total output, earnings, and jobs from the construction and operations of the Shady Oak Wind Farm have been estimated utilizing the Department of Energy's National Renewable Energy Laboratory's Job and Economic Development Impact (JEDI) Wind Energy Model Version W1.09.03e. State level economic multipliers used in the model are derived from Minnesota IMPLAN Group's IMPLAN professional.

CATEGORIES OF IMPACT:

The economic and fiscal benefits for this report are divided into two categories: construction activities and ongoing operations. Construction activities focus on benefits derived during the active development of the wind farm such as construction materials, labor, supply chain and turbine purchases. Induced impacts, the increase of goods and services as a result of additional revenue flowing into the economy are also included.

The impact of ongoing operations is based on a "typical" year of operation. Although years will vary, it is assumed that the benefits are what should be expected as an average over 20 years of operation.

PROJECT PARAMETERS:

Primary data for this analysis was derived from research and interviews with the Lee County Assessment office, public records, representatives from the construction trades, contractors, school officials, landowners, and Goldwind employees. Because operations and maintenance activities are prospective, this analysis relies on the industry default data collected by the Department of Energy. Other secondary sources include entities such as the U.S. Bureau of Labor Statistics, U.S. Census Bureau, the State of Illinois and the U.S. Energy Information Administration. Every attempt has been made to verify information or collect missing information from sources deemed reliable, but is not guaranteed.

Some numbers have been rounded and may not add exactly. This analysis considers the economic and fiscal benefits in 2012 dollars.

Project Description

The Shady Oaks Wind Farm development encompasses an area of 5,700 acres located in Brooklyn Township, Lee County, Illinois. The area is predominantly agricultural land interspersed with farmsteads generally composed of a farmhouse and outbuildings. The nearest town is Compton, with a 2012 population of 303. Compton came into being in 1872 as a result of railroad development, serving as a transportation point for farmers to get their products to the market. The town continues to serve the area's agriculture industry.

The Shady Oaks facility consists of 68 - 1.5 megawatt and 3 - 2.5 megawatt Goldwind permanent magnet direct-drive wind turbines. A 138 kV substation connects the generating facility to the power distribution system operated by the local utility, Commonwealth Edison. According to the American Wind Energy Association, the 109.5 megawatt wind farm produces enough renewable electricity to power about 32,000 homes.

History of the Shady Oaks Project

The Shady Oaks Wind Farm was many years in the making. Initial development activities were performed by local landowners. On June 15, 2009, Ireland based Mainstream Renewable Power announced its purchase of the wind farm development.

On December 18, 2010, Mainstream Renewable Power and Goldwind USA jointly announced that through the Illinois Power Agency's competitive procurement process, the Shady Oaks development had been awarded a long term power purchase agreement by the agency to provide renewable energy to Commonwealth Edison for 20 years. As a result of the successful bid, Goldwind USA acquired the Shady Oaks development from Mainstream Renewable Power.

During the spring of 2011, township agreements and local permits for the future Shady Oaks Wind Farm were finalized. LM Wind Power was awarded a contract to manufacture the project's turbine blades at its Grand Forks, North Dakota manufacturing facility. Broadwind Energy of Naperville, Illinois was selected to supply the towers at its facility in Milwaukee, Wisconsin.

Goldwind USA chose Mortenson Construction of Minnesota as the general contractor. Mortenson's responsibilities included the design and construction of access roads, the collection system, the foundations, and the erection of the turbines. As of the date of this report, Mortenson has completed over 100 wind projects, with name plate capacity of nearly 11,000 megawatts of energy.[2]

As the development process moved along, turbine nacelles were being manufactured at Goldwind's facilities in China for shipping and delivery to Lee County, Illinois. Turbines in China include many US-produced components. Timken, an Ohio-based company, supplied the required roller bearing assemblies that measure six feet in diameter. Ultracapacitors for the project were purchased from Maxwell Technologies located in California. High-tensile bolts were sourced from Texas. The miles of cables used are also made in the United States. Goldwind estimates that overall, over 60% of the materials and parts used in the Shady Oaks Wind Farm were manufactured in the United States.

The construction of the Shady Oaks wind farm commenced in August 2011. An especially rainy fall challenged construction crews from September through December. During the construction process, Mortenson contracted for many services and supplies locally. The construction phase of the project was completed in April 2012.

[2] Mortenson Construction Inc. (October 26, 2011) *Mortenson Construction Builds Its Fifth Wind Facility in Illinois.* Retrieved 11 May 2012, from http://www.mortenson.com/NewsArticle_2011_02611_FifthWindProjinIL.aspx

ECONOMIC BENEFITS

The impact of the Shady Oaks wind farm on the region and the country is more than just the amount of money spent on construction labor and materials, taxes, and lease payments. Workers and businesses that benefit from the investment in the wind project spend their wages in the local economy, altogether creating a multiplier effect. This concept is especially important to those living in rural areas where populations are small and dependent on limited local goods and services. By the very rural nature of wind farms, one can easily imagine a construction worker paying for gasoline at the local service station on Monday morning. The local service station uses that money to pay a local employee, who then cashes that check and pays the babysitter. The babysitter then proceeds to take her family out for pizza. And so, the cycle continues. Economists have developed multipliers based on this concept representing the number of times a dollar is spent throughout the relevant economy. The result is that a dollar invested in a community results in more than a dollar of local benefit.

TABLE 1 - SHADY OAKS PROJECT DATA SUMMARY

Project Location	**Lee County, Illinois**
Year of Consctuction	2012
Total Project Size - Nameplate Capacity (MW)	109.50
Number of Projects (included in total)	1
Number of Turbines	71
Installed Project Cost ($/KW)	$1,827
Annual Direct O&M Cost ($/KW)[a]	$21.22
Money Value (Dollar Year)	2012
Installed Project Cost	$200,000,000
Local Spending in Illinois	$36,927,994
Total Annual Operating Expenses[a]	$33,649,192
Direct Operating and Maintenance Costs	$2,323,833
Local Spending[b]	$882,616
Other Annual Costs[c]	$31,325,360
Local Spending	$1,233,100
Property Taxes[d]	$800,000
Land Lease	$433,100

Totals may not add up exactly due to rounding

a) Future operating and maintenance costs derived from JEDI model defaults. Total annual operational expenses include personnel, materials and services, debt and equity payments, property taxes, and land leases.

b) Local spending include, but is not limited to salaries for personnel such as field technicians and support staff along with materials and services such as fuel, vehicle maintenance, tools, supplies, and site maintenance.

c) Other annual costs include debt and equity payments, land leases, and property taxes.

d) Property taxes are calculated as an average over a period of 20 years.

JOBS AND ECONOMIC DEVELOPMENT IMPACTS

To measure the overall local and national economic impact of the Shady Oaks wind farm project, the Department of Energy's National Renewable Energy Laboratory's Jobs and Economic Development Impact (JEDI) wind energy model was utilized.[3] Table 1 summarizes Shady Oak's project data. Economic multipliers used within the model are derived from Minnesota IMPLAN Group's IMPLAN professional. The JEDI model is the standard in the wind industry and is thus more useful in comparing project impacts. Table 2 illustrates the domestic economic impacts based on the JEDI analysis.

Turbine and supply chain impacts include the manufacture of towers in Wisconsin and turbine blades in North Dakota. Due to the limitations of the model, U.S. suppliers providing parts and components incorporated in the manufacture of the nacelle in China are not included. Therefore, the reader will find the impacts conservative.

TABLE 2 - SHADY OAKS DOMESTIC ECONOMIC IMPACTS

DURING CONSTRUCTION PERIOD	# of Jobs	Earnings[a]	Output[b]
Project Development / Onsite Labor Impacts	69	$5,610,000	$6,250,000
Includes:			
Construction and Interconnection Labor			
Construction Related Services			
Turbine and Supply Chain Impacts	588	$26,860,000	$89,280,000
Induced Impacts[c]	259	$9,620,000	$29,720,000
Total Construction Period Impacts	**916**	**$42,090,000**	**$125,250,000**
DURING OPERATIONAL YEARS (ANNUAL)			
Onsite Labor Impacts - per year	6.5	$560,000	$560,000
Local Revenue and Supply Chain - per year	9.0	$450,000	$2,250,000
Induced Impacts - per year[c]	9.0	$390,000	$1,190,000
Total Annual Operating Impacts	**25**	**$1,400,000**	**$3,990,000**

Totals may not add exactly due to rounding

a) Earnings include wages and salaries per year calculated in 2012 dollars.

b) Output refers to dollars flowing into the economy from project-related activities.

c) Induced impacts are those jobs created, salaries, and output associated with the increase of local goods and services due to growth in area revenue. Retail spending, services, childcare, and fuel sales are examples of induced impacts.

[3] U.S. Department of Energy, National Renewable Energy Laboratory, Job and Economic Development Impact (JEDI) Wind Energy Model Version W1.09.03e. Retrieved 15 March 2012. www.nrel.gov/analysis/jedi

CONSTRUCTION ACTIVITY

Construction activities focus on benefits derived during the active construction of the wind farm such as construction materials, labor, supply chain and turbine purchases.

Illinois employment impacts

AN ESTIMATED $36,900,000 WAS SPENT ON CONSTRUCTION IN ILLINOIS

The total development, manufacture, and construction cost of the Shady Oaks Wind Farm was $200,000,000. Of that, approximately $36,900,000 was spent in Illinois. The bulk of the money was spent on construction materials such as concrete, gravel, rebar and electrical cabling. Additionally, the project was sourced locally in Illinois. Construction trade workers living within a 50 mile radius of the project site received approximately $5,600,000 in wages as a result of their work on Shady Oaks. Development costs such as engineering, legal fees and building permits also added to the total.

"SHADY OAKS WAS A SHOT IN THE ARM FOR THE BUILDING TRADES."

Brad Long
President,
Northwestern Illinois
Building and Construction
Trades Council

185 DIFFERENT CONSTRUCTION WORKERS WITHIN A 50 MILE RADIUS OF THE PROJECT AREA WORKED ON SHADY OAKS.

Construction Trades

"SHADY OAKS WAS A SHOT IN THE ARM..."

Brad Long is President of the Northwestern Illinois Building and Construction Trades Council. His organization is composed of over 15,000 members representing 17 craft unions in an 8-county area in Northwestern Illinois. He explained that during the construction of Shady Oaks, unemployment amongst construction workers had reached nearly 35%. "Last year was really rough. Some workers lost their houses to foreclosures," said Brad Long. "The wind farm project provided opportunity for our construction workers to put food on the table and keep their health insurance...Shady Oaks was a shot in the arm for the building trades."

The JEDI model can be misleading as far as numbers of construction jobs created. Job numbers are determined by hours worked. An average work year is calculated as 40 hours per week for 52 weeks (2080 hours). Construction work tends to be seasonal. Mortenson Construction estimates that about 185 different local construction workers within a 50 mile radius participated in the

project's construction. "Close to 22 heavy equipment operators worked 60 hour weeks from September through February," said Mike Stowe of Mortenson. "We estimate that around 160,000 hours were worked by local hires."

Benefits to Suppliers and Their Communities

Shady Oaks Wind Farm contractors relied heavily on local businesses to supply materials and services such as concrete, gravel, trucking, lumber, and hardware. Mortenson Construction reported that $35,000 was spent in Mendota and Rochelle to service the 60 trucks and vehicles used during the project. Workers who relocated to the area were housed in local hotels and ate in local food establishments.

ILLINOIS JOBS, EARNINGS, AND OUTPUT DURING CONSTRUCTION PERIOD

	# of Jobs[a]	Earnings[b]	Output[c]
Project Development / Onsite Labor Impacts[d]	69	$5,610,000	$6,250,000
Turbine and Supply Chain Impacts	268	$13,590,000	$40,010,000
Induced Impacts[e]	126	$5,370,000	$16,230,000
Total Illinois Economic Impact:	**463**	**$24,570,000**	**$62,490,000**

Totals may not add exactly due to rounding

a) Job numbers are calculated as full-time equivalent, based on a full-time work year (40 hours per week for 52 weeks = 2080 hours per year).

b) Earnings include wages and salaries based on 2012 dollars.

c) Output refers to dollars flowing into the economy from project-related activities.

d) Project development and Onsite Labor Impacts include jobs such as construction, concrete manufacturing, engineering, management, and legal.

e) Turbine and supply chain impacts include employment activities related to equipment manufacturing, parts, materials, and services.

f) Induced impacts are those jobs created, salaries, and output associated with the increase of local goods and services due to growth in area revenue. Retail spending, services, childcare, and fuel sales are examples of induced impacts.

Employment Impacts Outside Illinois

Goldwind USA has established many relationships and partnerships with companies that produce wind energy components in the United States.

On January 13, 2011, the Grand Forks Herald reported the news that LM Wind Power intended to lay off 150 workers at their Grand Forks wind turbine blade manufacturing facility. Four months later LM Wind Power signed an agreement to deliver the sets of blades needed for Shady Oaks.

CONSTRUCTION ACTIVITY

This order enabled LM to retain between 60 and 80 additional workers during this difficult period.

Broadwind Energy, based in Naperville, Illinois was the first company in the U.S. to manufacture 100-meter towers. They were chosen by Goldwind USA to supply the steel towers for Shady Oaks. The towers were made in their Manitowoc facility in Wisconsin, which employs about 275 people.

JOBS, EARNINGS, AND OUTPUT DURING CONSTRUCTION PERIOD OUTSIDE ILLINOIS

	# of Jobs[a]	Earnings[b]	Output[c]
Turbine and Supply Chain Impacts - Wisconsin[d]	164	$7,590,000	$25,810,000
Turbine and Supply Chain Impacts - North Dakota[e]	156	$5,680,000	$23,460,000
Induced Impacts - Wisconsin[f]	72	$2,470,000	$7,780,000
Induced Impacts - North Dakota[f]	61	$1,780,000	$5,710,000
Total Economic Impact Outside Illinois:	**453**	**$17,520,000**	**$62,760,000**

Totals may not add exactly due to rounding

a) Job numbers are calculated as full-time equivalent, based on a full-time work year (40 hours per week for 52 weeks = 2080 hours per year).

b) Earnings include wages and salaries based on 2012 dollars.

c) Output refers to dollars flowing into the economy from project-related activities.

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f) Induced impacts are those jobs created, salaries, and output associated with the increase of local goods and services due to growth in area revenue. Retail spending, services, childcare, and fuel sales are examples of induced impacts.

ONGOING OPERATIONS

The ongoing operations impacts are based on a "typical" year of operation. Although years will vary, the results herein are presented as an expected average over 20 years of operation.

After a wind farm is completed, a permanent staff of field technicians is hired to service and maintain the generating facility. In addition, a support staff of managers and accountants is required throughout the life of the facility. This study estimates that once Shady Oaks becomes operational, approximately 15.5 direct jobs will be created, including those created through local realized revenue and supply chain impacts. The induced impacts result in the creation of 9 additional jobs. The entire economic output of jobs associated with ongoing operations totals nearly $4 million per year.

ANNUAL JOBS, EARNINGS, AND OUTPUT DURING OPERATING YEARS

	# of Jobs[a]	Earnings[b]	Output[c]
Onsite Labor Impacts Per Year[d]	6.5	$560,000	$560,000
Turbine and Supply Chain Impacts In Illinois Per Year[e]	9.0	$450,000	$2,250,000
Induced Impacts In Illinois Per Year[f]	9.0	$390,000	$1,190,000
Total Annual Illinois Economic Impact:	**25**	**$1,400,000**	**$3,990,000**

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FISCAL BENEFITS OF THE SHADY OAKS WIND FARM

TAXES PAID WILL HELP FUND LOCAL SCHOOLS, COUNTY SERVICES, VOLUNTEER FIRE DISTRICTS, AND TOWNSHIP ROADS.

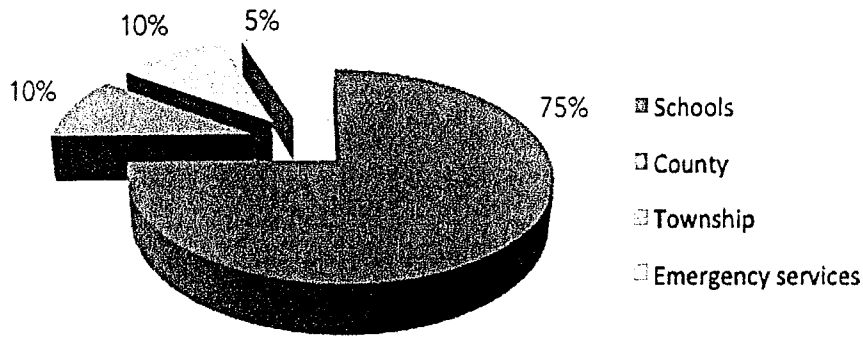
Property taxes paid to local governments are the most evident benefits of a wind farm development. Shady Oaks Wind Farm is expected to generate approximately $1,089,000 in property taxes during the first full year of operations. In rural Illinois, property taxes are vital to maintain services in a sparsely populated area. The State of Illinois has developed a formula to value wind energy devices for purposes of taxation. Using a complicated taxation formula, the amount of taxes to be realized over 20 years by local governments and school districts is over $16,000,000.

FIRST YEAR ESTIMATED PROPERTY TAX DISTRIBUTION

Based on most current tax levies available (2010)

SCHOOLS	
Mendota Township High School #280	$341,495.35
Mendota Community Consolidated Unit School #271	$313,546.76
Paw Paw Community Unit School District #271	$99,485.00
COMMUNITY COLLEGES	
Illinois Valley Community College #513	$44,228.95
Kishwaukee Community College School District #523	$9,906.13
COUNTY GOVERNMENT	
Lee County	$111,150.98
TOWNSHIP GOVERNMENT	
Brooklyn Township	$39,484.25
Brooklyn Township Road and Bridge Fund	$67,325.90
Brooklyn-Wyoming Multi-township District	$5,763.82
EMERGENCY SERVICES	
West Brooklyn Fire District	$17,270.52
Compton Fire District	$39,294.39
TOTAL FIRST YEAR ESTIMATED PROPERTY TAXES:	**$1,088,952.05**

Shady Oaks Wind Farm property tax distribution



SMALL COMMUNITY SCHOOLS CHALLENGED BY BUDGET CUTS AND RECENT DROPS IN PROPERTY VALUES ARE SCRAMBLING TO MAKE ENDS MEET.

"THIS NEW REVENUE TO OUR SCHOOL MOST LIKELY SAVE 2 TEACHERS' JOBS."

Robert Priest
Superintendent,
Paw Paw School

Robert Priest, Superintendent of Paw Paw Unit School District #271 was elated when he discovered that 8 turbines were located in his school district. He had just received the sobering news that the State of Illinois had released a statement outlining plans to cut state-aid for school funding. With a total yearly budget of around $4 million, the minimum cut was anticipated to be a little over $100,000. In addition to a state budget crunch, the school district was already grappling with a substantial decrease in real estate valuation. "The tax revenue from the 8 turbines will almost make up the difference," said Mr. Priest with a huge smile. "This new revenue to our school will most likely save 2 teachers' jobs." Paw Paw Unit School District currently employs 24.5 teachers.

Mendota High School Superintendent, Jeff Prusator described his school's portion of the property taxes starting at $340,000 as a "win-win" for the school district and the taxpayers. Although a larger district than Paw Paw, Mendota school district has a bond obligation related to the construction of its new high school building. Mr. Prusator explained that every additional assessed valuation dollar helps lower the bond payment tax rate. Everyone in the district proportionally pays a little less. He also added that additional property taxes help in the budgeting process. "The State of Illinois is unpredictable in its payments," explained Mr. Prusator. "Money coming into the district through taxes paid by Shady Oaks Wind Farm can be budgeted without the uncertainty of receipt."

ONGOING OPERATIONS

SHADY OAKS WIND FARM MAKES IT POSSIBLE TO KEEP THE FAMILY FARM IN THE FAMILY.

Twenty-three different landowners host the 71 wind turbines through lease agreements with Goldwind USA. Landowners interviewed said that they initially decided to host a wind turbine based on their interest in clean energy and concern about the environment. Another major motivator was future financial security of the lease payments. One land owner explained that the lease income is being used to help make the payments on the family farm which he had purchased from his mother a few years ago. He said that the farm was established by his grandfather. The lease income from the Shady Oaks Wind Farm will make it possible for his children and grandchildren to keep the farm in the family.

CONCLUSION

The results of this study showed far-reaching economic impacts in Illinois and the United States from Goldwind USA's Shady Oaks Wind Farm development. Many people and many jobs were dependent on a single construction project. After the construction was completed, local permanent jobs were created along with a new need for materials from local suppliers. Local fiscal benefits were found to be significant to the local governments, schools, and landowners.

Without a thorough understanding of the benefits provided both during construction and operation of a wind farm it is easy to overlook the powerful impact a wind farm makes in a rural area. By nature of its location, a wind farm exists in sparsely populated areas struggling to maintain their populations, infrastructure, and schools. The sustainability of a new source of revenue not lured away from another area and not subject to relocation in today's climate of economic incentive battles is rare. The major capital investment tied to a location with the proper wind resource assures the long-term sustainability of the economic and fiscal benefits to the rural area.

ABOUT GOLDWIND USA

Goldwind USA Inc. was established in 2010 in Chicago, Illinois. However, its experience in the global wind industry runs much deeper. Built upon the passions of a young Chinese engineer, in charge of a wind farm in the harsh Gobi desert, the company has grown to employ over 3,900 people in offices and facilities across North and South America, Europe, Asia, Australia, and South Africa.

As a wind farm facility manager, Goldwind's founder, Mr. Wu Gang, believed that wind energy was critical in providing clean, renewable energy to the world. He became frustrated with the inefficiency and high maintenance requirements of the wind turbines. In 1997, Mr. Wu was given the chance to build a six-hundred kilowatt turbine. Rather than starting from scratch, Mr. Wu researched what was available internationally. He initially licensed a design from Jacobs Energie, a German company. In 1998, Xinjiang Goldwind Science and Technology was established. The manufacturing process proved to be very challenging; the company overcame difficulties in order to create sophisticated and high quality turbines. In 2002, Goldwind established China's first large-scale wind turbine assembly plant.[4]

From his experience and unique perspective, Mr. Wu Gang has developed a global corporate culture embracing technologically advanced turbine designs that are the most efficient and the easiest to maintain. In 2008, Goldwind acquired majority ownership of German firm VENSYS Energy AG. That year the company also finished building research and development centers in Beijing, Xinjiang, and Germany, becoming the first Chinese wind manufacturer with its own proprietary technology.

Goldwind's turbine design employs permanent magnetic direct-drive (PMDD) technology developed in Germany. This gearless turbine requires fewer components, and thus less maintenance. The company attributes its growth and success to its global presence, utilizing the best technology, components, and talent the world has to offer.

In Chicago, Goldwind USA has assembled a management team of highly experienced energy and wind professionals from the United States and Canada. The company offers turbine sales, development services, project management and operations and after-sales service. Goldwind has the ability to finance projects and create development partnerships around the world. The Shady Oaks utility-scale wind farm development was undertaken by Goldwind USA to showcase the company's capabilities, reliability, and distinct turbine technology.

[4] Osnos, Evan. (December 21, 2009). "Green Giant, Beijing's crash program for clean energy". *New Yorker*. Retrieved 5 May 2012, from http://www.newyorker.com/reporting/2009/12/21/091221fa_fact_osnos