



HARNESSING THE WINDS OF CHANGE

The wind power industry blows gusts of opportunity for project sites, equipment manufacturers, and specialty transportation providers.

In five years, the landscape surrounding Dumas, Texas, will be completely transformed by hundreds of towering wind turbines, predicts Mike Running, executive director of the Dumas Economic Development Corporation. Jutting up from the flat expanse of this Texas Panhandle locale, the wind farms currently being developed and planned in the region could generate several thousand megawatts of power upon completion. "Dumas is in the heart of some of the best wind in the world," boasts Running.



The city is not alone. Throughout the Wind Corridor—loosely defined as the states of Nebraska, Kansas, Oklahoma, Missouri, Arkansas, Louisiana, Texas, and New Mexico—and even in surprising places such as New York and Maine, wind turbines are spinning the country into a new phase of energy generation.

The United States had 35,159 megawatts (MW) of installed wind power generation as of January 2010, according to the U.S. Department

Energy Association. Electric utilities across the country are increasingly adding wind energy to their power supply portfolios as a clean, inexhaustible, and domestic source of electric generation, the association says.

Utilizing Wind Energy

One of those forward-thinking utilities is Nebraska Public Power District (NPPD), the state's largest electric utility, which delivers power to about one mil-

lion in wind generation throughout Nebraska since 1995. (This value does not include \$250 million of capital investment by others in operating wind farms with which NPPD has made long-term agreements to purchase output.) It owns and operates a 60-megawatt facility with 36 wind turbines near Ainsworth, Neb., as well as a smaller facility outside Springview, Neb. The Springview site, erected in 1997 as the state's first wind facility, is currently



Wind power equipment manufacturer Katana Summit produces tubular wind towers in its Columbus, Neb., facility.

of Energy's Wind and Water Power Program—enough to serve more than nine million homes. “Greater use of the nation's abundant wind and water resources for electric power generation will help stabilize energy costs, enhance energy security, and improve our environment,” the agency notes.

The wind power industry is growing quickly, with an estimated 40 percent of all new generation capacity added to the U.S. electric grid in the last few years coming from wind power projects, according to the American Wind

lion Nebraskans. While NPPD leverages a diverse mix of energy sources—including coal, nuclear, gas and oil, hydro, and wind—to service its customers, it is enhancing its focus on renewable energy sources.

“NPPD's board of directors has set a goal to produce 10 percent of our energy with renewable resources by 2020,” says Dennis Hall, NPPD's manager of economic development. A large chunk of that will come from wind power projects.

NPPD has invested about \$100

being revamped and will be operational again later this year.

NPPD also purchases wind power from three Nebraska wind farms: the 81-megawatt Elkhorn Ridge Wind Facility in Bloomfield, Neb., near the South Dakota border; a 54-turbine, 81-megawatt facility near Petersburg, Neb.; and an 80-megawatt wind farm located in central Nebraska near the city of Broken Bow.

“There has been a significant amount of development and interest in the wind industry in Nebraska, so we are



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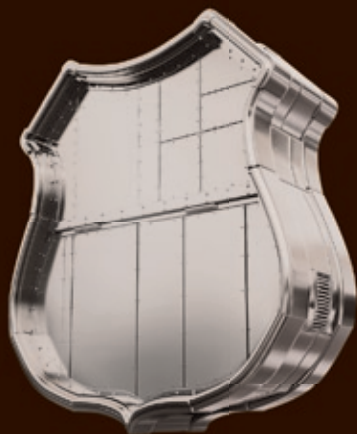
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expecting more development as time goes on," says Hall, noting that the state has made good progress toward its goal of meeting the 10-percent-by-2020 mandate for renewable energy use.

Embracing wind energy is also helping the state lure wind power equipment companies, such as Katana Summit, which is now manufacturing tubular wind towers in Columbus, Neb. The company's facility covers 75 acres and more than 250,000 square feet of building space, and represents the largest wind-related manufacturing investment in Nebraska to date.

"Katana Summit and other companies locating here can take advantage of Nebraska's location, which is close to the significant wind resources in the Northern Great Plains and Great Plains states," says Hall.

"This area offers a great workforce adept at fabricated metals, and has an amazing transportation and logistics system: two Class I railroads—BNSF and Union Pacific (UP)—and a number of shortline railroads that make it easy for wind equipment manufacturers to transport their goods," he adds.

In addition, Nebraska offers significant tax incentives to companies that locate manufacturing plants and create jobs in the state.

Ahead of the Curve in Joplin

Another area with an ahead-of-the-game utility company is Joplin, Mo. "Empire District Electric Company serves the Joplin region, and it has been ahead of the curve for investor-owned utilities in the country," explains Rob O'Brian, president of the Joplin Area Chamber of Commerce. "It is already meeting Missouri's standard for deriving 15 percent of energy from renewable sources by 2015."

The utility's commitment to renewable resources has helped the regional economic development partnership formed by the Chamber pitch the region as a great location for a variety

of wind energy businesses. With a solid base of local companies operating in the logistics realm, O'Brian sees the Joplin region, which also includes part of southeast Kansas, as an ideal supply chain hub for the industry.

"We've been talking with many wind equipment manufacturers about the area's great supplier base and easy transportation access," he explains.

Truck and Rail Connections

That transportation access includes U.S. 71, a north-south connector highway that runs from Canada to the Gulf of Mexico, and Interstate 44, which connects the Midwest to the Southwest. The Joplin region also boasts several local trucking firms that specialize in overweight and oversize products, as well as multiple Class I and shortline railroads. The area's highways and shortlines also provide access to the Port of Catoosa in Tulsa, Okla.—an inland port that handles barge traffic to the Mississippi River and Gulf Coast ports.

Existing Joplin companies such as Able Manufacturing & Assembly, which makes components for wind turbines; and FAG Bearings, a subsidiary of Schaeffler Group USA, which produces precision bearings for wind turbines and gear boxes, are already taking advantage of the central location to service the wind industry.

"In addition, some of the area's smaller precision machining and electronics companies are gaining activity in the wind business," O'Brian notes.

Adding to the Joplin region's list of wind energy-friendly assets is the Missouri Alternative and Renewable Energy Technology Center (MARET) at Crowder College in nearby Neosho, Mo., which offers training programs dedicated to producing and maintaining wind turbines. Also, the Kansas Technology Center in Pittsburg, Kansas, offers training in applied manufacturing engineering, including electronics and metal fabrication.



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Supporting Wind Energy – Onshore and Off

Delaware's Port of Wilmington is located in the middle of the largest U.S. energy-consuming population, and its terminal gates lie one-quarter mile from I-95 and connections to the rest of the nation. It also sits alongside the Atlantic Ocean, where offshore wind energy development is planned. Clearly, the port is well-positioned to serve the growing wind power industry.

"The Mid-Atlantic region is ripe for development of wind turbine farms," says Tom Keefer, deputy executive director for the Port of Wilmington. "Some 2,500 megawatts of offshore wind energy projects are planned along the coasts of New Jersey, Delaware, and Maryland. Our port is uniquely positioned to provide logistics support for developers of these projects."

The port first began receiving shipments of wind energy components in 2001. Since then, it has handled hundreds of shipments of wind turbine blades, managing the process by which the blades are discharged from the ships, taken to a staging location, then loaded on either specially configured trailers or rail cars that take the blades to the ultimate project sites.

"We make sure this is done efficiently and safely so there is no damage to the costly wind turbine blades," Keefer notes.

"The port offers six berths capable of handling these components; more than 30 acres of land to store components; specialized cargo handling equipment to unload

The Port of Wilmington provides a convenient transfer point for equipment shipping to both onshore and offshore wind farms.

the ships and load the trucks; as well as labor that is experienced in handling these fragile, oversized, and expensive components," he adds. "Plus, two Class I rails serve the port."

For shipments bound for onshore wind farms, the port's location provides another advantage: the State of Delaware offers quick and adept handling of the necessary permitting and escorts that must accompany truck shipments of oversized wind energy components. The quick turnarounds are especially helpful because many wind farm projects operate on a just-in-time philosophy, so timely delivery of the components is key. "The ease, efficiency, and cost-effectiveness of moving these goods from the port to the ultimate project site is critical," Keefer says.

Keefer also sees the port as an important logistics partner for developing offshore wind farm projects. "These developers need a logistics hub that is close to the project locations; where they can receive components coming in from overseas as well as from domestic manufacturing sites; where they can store and stage components, then easily load them on special vessels that transport the components to the offshore development sites," he explains. "We can offer the whole package to serve as the logistics hub to support these offshore projects."

In addition, Missouri Southern State University recently opened the Missouri Center for Advanced Power Systems Research in Joplin. The center, in concert with Eagle Picher Technologies, will research power storage issues that could help the renewable energy industry.

"Having capacity to store wind energy to meet demand when the wind is not blowing is critical," O'Brian explains.

Of course, utilities have not cornered the market when it comes to attracting wind development. A variety of cities and states in the Wind Corridor and surrounding areas have rolled out the welcome mat to companies involved in the wind energy industry.

For instance, Dumas—which was recently named by *Expansion Solutions* magazine as one of the top five U.S. locations for the wind industry—is rapidly becoming a destination for companies servicing the wind sector.

The Texas city has attracted three wind-related companies over the past few years: an engineering firm that does environmental work for area wind farms; Iowa-based Anamometry Specialists, which gathers the measurement data required to develop wind farms; and an industrial paint company that applies seal coating on wind towers to prevent corrosion.

Investing in Wind

In addition to the city's proximity to several wind farms—the Little Pringle, Exelon, and Valero Sunray wind farms are all located within a short drive—Dumas offers several strong assets for companies interested in servicing the wind energy sector. "Our city invested \$69,000 to develop a wind and renewable energy technical training program at the local two-year college," Running notes. "The program produces workers trained to install, maintain, and service wind power equipment."

The city is also constructing a new 20,000-square-foot speculative business center to help locate some of these



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wind energy-servicing companies, and plans to install a wind training tower in the business park. In addition, Dumas is working with nearby Amarillo College to add to the business park a 30,000-square-foot technical training center for renewable energy businesses.

Checking the Transmission

The state of Texas has also invested in several electric transmission programs that will help the Panhandle and South Plains areas attract wind-related business activity. (Electric transmission lines are needed to move the wind power produced by the wind farms into the power grid and out to electricity consumers.)

These projects will improve Levelland, Texas' ability to position itself as a supply chain and logistics area for the wind energy sector, says Dave Quinn, executive director of the Levelland

Economic Development Corp. "We see a future where companies transport wind energy-related products via rail into Levelland and distribute throughout the region from this area via truck," he says.

"As each of these electric transmission lines come online and more wind farms open, it will be increasingly important for companies supplying the raw materials that go into wind farm production—everything from steel rebar to gears and components for the turbines—to have a place they can easily ship to and from," he adds. "Levelland can be that place."

The newly completed, \$8.6-million Levelland Industrial Rail Park offers more than four miles of track to entice companies seeking immediate access to the large rail shipments typical of the wind sector. In addition, Levelland is

well-positioned for truck transportation: U.S. 385 and Highway 114 both run through the city, providing easy access to larger markets such as Amarillo and Midland-Odessa, Texas.

"Also, wind sector firms can use a Levelland location to service major wind farm development to the north, south, and east," Quinn says. "If you draw a 500-mile radius around Levelland, you capture the wind industry growing in both Texas and New Mexico."

Another reason Levelland attracts wind-related firms is the region's skilled labor. With its strong base of traditional energy-sector jobs, the area boasts plenty of machinists, welders, and mechanics familiar with the energy business.

"Their skills are easily transferred into the renewable energy sector," Quinn notes.

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| STATE | MW | FARMS | UNITS | PROPOSED |
|------------|------|-------|-------|------------|
| Texas | 7300 | 62 | 4730 | 4238.55 MW |
| Oklahoma | 1031 | 11 | 621 | 18.9 MW |
| Colorado | 244 | 5 | 163 | 20.5 MW |
| New Mexico | 596 | 7 | 469 | 84.6 MW |
| Kansas | 250 | 2 | 237 | |
| Total | 9421 | 87 | 6220 | 4362.55 MW |

WIND FARMS WITHIN 100 MILES OF DUMAS

| STATE | MW | FARMS | UNITS | PROPOSED |
|------------|------|-------|-------|------------|
| Texas | 1487 | 21 | 1022 | 4199.55 MW |
| Oklahoma | 707 | 7 | 426 | 18.9 MW |
| Colorado | 244 | 5 | 163 | |
| New Mexico | 496 | 5 | 429 | 20.6 MW |
| Total | 2934 | 38 | 2040 | |



FOR MORE INFORMATION, CONTACT



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Oklahoma's Windy Future

With more than 700 megawatts currently in operation, and a projected 38,000 megawatts by 2030, the National Renewable Energy Laboratory projects Oklahoma will be the nation's second-largest wind power generator. It's not surprising that Ardmore, Okla., in south central Oklahoma, is seeking to lure wind energy-related manufacturing activity. The city is touting its assets to potential wind energy businesses that could capitalize on its location and proximity to both wind farm development and major business markets.

"Ardmore is located on Interstate 35, approximately 90 miles from both Dallas and Oklahoma City, and has a population of about seven million people," says Brien Thorstenberg, vice president, development for the Ardmore Development Authority. "The area offers a great location and workforce for wind power equipment manufacturers."

One wind tower manufacturer has already located about 30 miles from Ardmore, and Thorstenberg believes others will soon follow. A firm manufacturing wind components in Ardmore would be able to easily transport those goods to the wind farms because of the city's location on the Interstate, he notes. "Also, because of Oklahoma's incentives and tax structures, many companies have found it more cost-effective to reach the Dallas-Fort Worth market by locating in south Oklahoma," he adds.

The city's other logistics and transportation assets for wind power equipment manufacturers include four industrial parks owned by the Ardmore Development Authority, and the Ardmore Municipal Airport, which boasts a 9,000-foot runway capable of handling fully loaded cargo planes. "The airport also has three rail spurs," Thorstenberg notes.

Ardmore is also home to the Samuel Roberts Noble Foundation, a non-profit foundation devoted to research in agriculture, plant biology, and forage improvement. The organization employs more than 100 PhDs and some 400 workers, notes Thorstenberg. "The area's labor base has advanced skills that could be valuable for wind turbine, tower, or blade manufacturers," he says.

Taming Transport Challenges

While there seems to be no shortage of cities and regions willing to play host to the wind energy sector and its related businesses, the list of companies that can adequately meet the industry's transportation needs is considerably shorter. The components that go into wind turbines are often big, heavy, wide, delicate, and high-tech—all qualities that create specialized transportation demands.

The American Dream Alive and Well in Levelland

The epitome of the American dream, David Duffee founded Levelland, Texas-based Independent Electric out of the back of his pickup truck. For inventory storage, he stacked boxes of electrical parts in his mobile home.



David & Janet Duffee with the Independent Electric Crew at Grand Opening

Fourteen years later in late 2010, Duffee completed a 25,000-square-foot facility to house the thriving company's offices, warehouse, and training space to institute local trade courses. Located in Levelland's new industrial rail park—the city's hotspot for development—Duffee is on track to continue his company's success and give back to the community that's been integral in establishing his business.

From the Ground Up

Duffee entered the electrical industry in 1976 as a 16-year-old apprentice in Dallas. Spurred by a strong construction industry and lagging oilfield, in 1994, Duffee founded Independent Electric, a company that provides electrical services for commercial and institutional buildings, including restaurants, motels, schools, and hospitals. What started as a company of one now has 18 employees, including Duffee's wife, Janet.

When Duffee secured his first architectural contract

for \$13,000 of electrical work, he was elated. (It felt like \$13 million, he says.) Now, Independent Electric is regularly completing multiple jobs that range from \$1 to \$2 million, and he works for clients—including McDonald's, Harley Davidson, and Levelland's new Mallet Event Center—across a 300-mile radius around Levelland.

Capitalizing on the company's success, in December 2009, Independent Electric broke ground on the \$800,000 state-of-the-art, multipurpose facility at Levelland's \$8.6 million, 300-acre industrial rail park. The Duffees contributed a private capital investment of approximately \$750,000, and Levelland Economic Development Corporation (LEDC) gave \$45,000 toward the new build. "LEDC and their money was the catalyst for the project," Duffee says. "Without them, we might not have moved forward with the facility. We definitely would have waited, and we wouldn't have built to the scale that we did."

The community's willingness to invest in future growth boosted the Duffees' confidence in their personal outlay to expand the business. "The town knows that sometimes it has to spend a little money to get businesses started, but they know it's an investment. LEDC and city officials are pro-business. They want businesses to succeed, and it shows," Duffee says.

Primed for Success

The facility's railway location will allow Independent Electric easy access to large loads of equipment and will provide a place for the company to store heavy equipment. Duffee is also excited to be in close proximity to the rail park's other businesses. "We have some really good businesses there to work with. It's the place to be right now. When other good businesses are around, it helps us all," Duffee notes. "Success breeds success," adds Dave Quinn, executive director of LEDC. "David and Janet Duffee exemplify the type of success we strive for in Levelland. The business activity they will create in the new rail park will prime the pump for future development. You can't help but be impressed by their facility. They are the kind of neighbors others want to build around."



Because of the Duffees' expansion, Quinn is starting to see a chain reaction. "The investment made by Independent Electric raises the confidence level of other Levelland businesses. These local companies have watched the Duffees' progress and have begun to initiate capital investment projects as well," he says. "David is a prime example of someone who is successful because he loves what he does. He follows the mantra that givers gain. He understands that hard work is necessary to be successful, yet he finds balance by giving back to the community," Quinn continues.

You can read more about Levelland at GoLevelland.com/Blog and you can follow them at [Twitter.com/Levellandedc](https://twitter.com/Levellandedc)





Going Where the Wind (Project) Goes

With experience serving the wind power industry since 1997, international logistics and freight management company Geodis Wilson is a veteran at providing a full menu of services to wind power OEMs and suppliers. "We provide international freight management of expedited and cost-sensitive air and ocean freight; project cargo services; a buyer's consolidation program; customs clearance; and EDI to interface with our wind power shippers' transportation management systems," says Henrik Funk, global manager, wind energy projects at Geodis Wilson.

The company's network of worldwide locations makes it a natural to serve the global wind power industry. Geodis Wilson works to coordinate flows between OEMs, suppliers, and wind power project sites within and between regions in Asia,



Geodis Wilson coordinates equipment flow among manufacturers, suppliers, and wind power project sites worldwide.

the Americas, Europe, the Middle East, and Africa. As such, Geodis Wilson's wind-related shipments have run the gamut from temperature-controlled epoxies used for equipment fabrication to shipping completed wind turbine blades to installation sites; sending equipment and machinery to production lines; and consolidating shipments from multiple suppliers into ocean containers to supply factories producing nacelles.

This diversity of services has led to some interesting transportation arrangements. "We recently chartered an Antonov Airline AN-225 to fly a set of prototype windmill blades that measured 138 feet long," Funk notes. "This was one part of a complete turnkey operation that Geodis Wilson executed from a manufacturing site in China to a test site in Europe."

Wind power OEMs and suppliers often turn to Geodis Wilson for its depth of experience solving the industry's unique transportation challenges. "We know how to meet the challenges of moving the sector's finished components for production in a just-in-time operation," Funk says. "We do this through our personnel, many of whom we've recruited directly from the wind power industry."

A single section of a wind tower can span 200 feet long and weigh 225,000 pounds; a nacelle—which houses all the wind turbine's generating components—often weighs about 150,000 pounds.

"Transporting wind tower components via truck requires investment in specialized, expensive equipment, which can be a barrier to entry for many carriers," says John Collins, executive vice president, specialized freight services for Landstar, a carrier that offers transportation and supply chain services to the wind energy sector.

Landstar provides over-the-road transportation for a variety of wind energy manufacturing companies, shipping bulk components including wind towers, blades, nacelles, and other components from their origin at a port or supplier's location all the way to the wind farm sites. The company has been involved since the industry's inception.

"Landstar has a broad network of agents and capacity that was already involved in transporting over-dimensional goods and superloads, so the wind industry was a natural fit," Collins explains.

The company's expertise comes in handy for shippers trying to navigate the myriad restrictions involved in transporting wind power equipment by truck. Because of the loads' size, weight, and dimensions, Landstar must submit route surveys in advance to obtain permits from the areas the shipments travel through.

"Every truck needs a unique issued permit, and some trips require separate permits from cities, counties, and states," Collins notes. "You may need three permits for just one mile of road."

The trucks also have to be escorted by pull cars, often both in front and back, and are restricted as to when they can travel: only during daylight hours, and not on holidays. Frost laws also come into play for some shipments. Because of the shipments' weight and potential



damage to the highways, these trucks cannot drive on certain roads until frost laws are lifted.

"These restrictions are tough because trying to park a 200-foot trailer can be a challenge," Collins says.

Conditions during wind component transportation's last mile also make it crucial to work with an experienced carrier. "Wind farms are placed in remote locations, so you need drivers who are capable of handling large loads on secondary and gravel roads," Collins says.

These challenges mean a lot of planning goes into every shipment, and lead times are often extensive. This is where Landstar's experience pays off. "Landstar has been doing this for years, so we have a good sense of the routes that are most efficient and that the states will allow," Collins says.

Some shippers in the wind power

sector choose to skip the headaches of over-the-road transportation entirely and opt for rail shipping as a cost-effective, environmentally friendly means of transportation, with fewer restrictions and planning concerns.

Turning to Rail

"Wind power components are large, heavy objects that move long distances, so shipping via rail makes sense," says Beth Whited, president of Union Pacific Distribution Services (UPDS), a wholly owned subsidiary of Union Pacific Railroad (UP) that provides a variety of value-added rail logistics services. UP and UPDS have been providing rail transportation and logistics services to the wind power industry since 2007.

"UPDS offers a port-to-door or door-to-door package," Whited explains. "We help shippers manage their equipment

and the flow of railcars so they are available when the customer is ready to load; we hire riggers and crane operators to load and unload the components; we monitor the shipments in transit through our proprietary *WindVision* software, which tracks components at a SKU level all the way through the supply chain; and we run distribution centers near the wind farm sites, where we manage the train loads of components that come in, are offloaded, and trucked to the job site."

Because a lot of wind component production takes place offshore in Europe and Asia, many of the shipments UPDS handles come into the country via ocean and must be picked up at port, taken off the ship, and loaded either directly on to rail or a truck destined for a rail location for inland transportation. Domestic production of certain



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wind components—such as towers and blades—has started to grow, so the company is also handling many shipments that originate at manufacturing plants in the United States.

Either way, the complexities of these heavy and over-dimensional shipments require a transportation provider with specialized experience and equipment. “We use heavy-duty flatcars for the nacelles. Blades are lighter, but they are made of composite materials, have unique dimensions, and require specialized devices to hold them in place,” Whited says. “Towers are also transported on customized flatcars, and have to be bolted down in a way that doesn’t create stress on the metal during transit.”

To ensure all this customized transportation is done correctly, UPDS and UP work with engineering firms that design fixtures for fastening the

components to the rail cars.

The company has also begun to work with wind shippers on manufacturing and design concerns that impact transportation. “We are trying to educate shippers to understand that the way they design their components can have significant ramifications for their transportation costs,” Whited explains.

The industry’s growth does not worry UP. “We have the available capacity, and we’re excited to continue providing green and cost-effective services to this growing industry,” says Whited.

The Overseas Connection

Because so many wind turbine components are still made overseas, manufacturers and wind developers must determine the best way to transport these components into the United States before they tackle the road-vs.-rail

decision for getting them to the wind farm site. Atlantic Container Line (ACL) believes a roll-on/roll-off (RoRo), just-in-time approach is the most reliable and cost-effective option. The carrier, which has served the wind industry for five years, offers weekly just-in-time service from Europe to North America.

ACL’s unique strategy is to use RoRo methods and move smaller shipments from the factory to the installation site without the interim accumulation and storage—a just-in-time approach. With this method, wind power components flow seamlessly from the overseas factory to the destination port, where a logistics company arranges the final inland move to a storage or staging site, or directly to the wind farm.

“RoRo is the safest and most inexpensive way to handle and transport oversized or special project cargo,”



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explains John Fricker, general manager, special project and RoRo Europe for ACL. "The shipments often move as one piece using specialized trailers from origin to port to destination, which requires less physical handling. Also, they are not exposed to water or the elements because the cargo is secured in ACL's garage decks."

Although it sounds like a simple strategy, executing these moves is anything but simple. A recent ACL shipment, for example, included units measuring 31 feet long by 12 feet wide by 13 feet high destined for a U.S. wind farm.

Loading the equipment is no easy task. "At the origin port, the components are loaded onto roll trailers used in our RoRo decks—called mafi trailers—and positioned according to the manufacturer's specifications," Fricker explains. "Some components need to



Garage decks on ACL's RoRo ships protect wind power equipment from the elements during transit.

be angled on the trailer and welded into place. The mafi trailers then roll aboard the vessel and are lashed in place for the journey across the Atlantic."

The nacelles carry an added requirement, Fricker notes: the mechanism must be rotated regularly during transit. "Our vessels have power stations, so the necessary connections can be made and factory engineers can inspect and

approve the load before it embarks for one of the U.S. East Coast ports," he says. "At destination, the mafi trailers are rolled off, and the loads are transferred to specialized trailers or rail cars for the inland portion of the move."

The complex process nets a smooth ride for ACL's shippers—and shows no signs of slowing down. "We see a strong future for the wind power business, based on interest fueled, at least in part, by federal incentives," Fricker notes.

Many in the wind power industry share Fricker's perspective. The focus on sustainable and renewable energy sources at local, state, and federal government levels, combined with educated consumers seeking green solutions, and manufacturers and carriers with the skills to power this growing industry, add up to one conclusion: wind power will continue to blow strong. ■

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Ardmore Development Authority • www.ardmoredevelopment.com

The Ardmore Development Authority, Okla., has identified the wind industry as a target to attract companies to the area. The wind corridor (an area identified as having the strongest wind in the nation at a height of 50 feet) is located approximately 100 miles to the west of Ardmore. With its centralized U.S. location, immediate proximity to wind projects, and position in the heart of the wind corridor, Ardmore is an ideal site for tower and blade production, turbine component manufacturing, and repair and maintenance operations.



Atlantic Container Line (ACL) • www.aclcargo.com

Publicly held Atlantic Container Line is a North Atlantic ocean carrier operating since 1967. Five identical vessels, each with a 3,100-TEU container, car, and RoRo capacity, make 50 calls weekly. Line slot exchanges enable ACL to offer six transatlantic services weekly. ACL also offers relay services between North America, the Mediterranean, the Black Sea, Middle East, and Africa.



Delaware Economic Development Office • www.dedo.delaware.gov

The Delaware Economic Development Office (DEDO) attracts new investors and businesses to Delaware, promotes expansion of existing industry, assists small and minority-owned businesses, promotes tourism, and creates new and improved employment opportunities for all Delaware citizens. Focusing on high-growth industries, DEDO believes the offshore wind industry brings near-term jobs and can transform Delaware's economy in the long run, providing good-paying, skilled employment opportunities. Delaware understands the wind industry's needs—from power purchasing, to supply chain, to policies.



Dumas Economic Development Corporation • www.dumasedc.org

Dumas, Texas, is surrounded by six sites for wind energy. Each site has 10 megawatts of power, with eight to 16 turbines. You can see wind turbines from U.S. Highway 152 from Dumas to Borger; U.S. Highway 287 from Dumas; and FM 281 from Etter to Sunray. The sixth site is being erected adjacent to the Valero-McKee Refinery. Wind energy is a big part of the Texas Panhandle, positioning Dumas to work with additional developers in the area on several proposed wind farms.



Geodis Wilson • www.geodiswilson.com

With 5,500 people and a global network, Geodis Wilson is one of the world's largest freight management companies, serving customers with integrated supply chain solutions that deliver cargo by sea and air. The company's expertise, value-added services, and e-services enable you to streamline the flow of goods. We also make your supply chain more transparent and easier to manage. A self-reliant network of offices, and air and ocean hubs in more than 50 countries, ensures that your cargo flows efficiently and consistently across the world.



Joplin Area Chamber of Commerce • www.joplincc.com

Thinking of Joplin, Mo., as the next site for your headquarters or distribution center? Your first stop should be the Joplin Area Chamber of Commerce's Web site. You'll find a complete business profile of Joplin, including population, location, infrastructure, labor, education, real estate, and cost-of-living statistics. The Joplin Area Chamber of Commerce is a private, not-for-profit organization of business and professional people committed to improving the economic prosperity and quality of life in the Joplin area. Member of NASCO.

WIND LOGISTICS WEB_CITE CITY



Landstar • www.landstar.com

Landstar, a safety-first transportation services company, provides complete logistics services throughout the United States, Canada, and Mexico. Landstar's extensive brokerage network increases customer options as it brings a wider array of equipment options to handle the toughest transportation challenges. With innovative use of Internet technology, Landstar communicates in every medium, from the most sophisticated satellite tracking systems to the simplest pagers. That means customers know where their shipment is every step of the way, with every carrier selected. You'll find complete details on our Web site.



Levelland Economic Development Corporation • www.golevelland.com

As the search for more environmentally friendly sources of energy continues, the Levelland Economic Development Corporation is leveraging the momentum and investment in wind, solar, and biofuels. Levelland, Texas, is growing its economy by positioning the community as a provider of logistical advantages to companies building the infrastructure needed to deliver green energy to market more efficiently.



Nebraska Public Power District • www.sites.nppd.com

Nebraska Public Power District's (NPPD) service area, located in the center of the major wind energy resource area in the United States, offers significant advantages to manufacturers of wind energy projects and related industries. NPPD's communities have available industrial sites and buildings providing access to the nation's rapidly growing wind power generation industry, a quality workforce, low-cost power, and a business-friendly environment.



Port of Wilmington, Delaware www.portofwilmington.com

From supply chain logistics, to special road permitting and escorting, to favorable renewal energy policies and support for relocating businesses, Delaware and its deepwater seaport in Wilmington are ready to serve the needs of Mid-Atlantic land-based and offshore wind energy projects. Delaware's port has extensive experience handling wind energy components, the equipment to load/off-load this fragile and high-value cargo, as well as ample berths for ship discharge, and terminal land for staging, storing, and distribution.



Union Pacific • www.up.com

Union Pacific Corporation operates North America's premier railroad franchise, covering 23 states in the western two-thirds of the United States. Union Pacific Railroad links every major West Coast and Gulf Coast port and provides service to the East through its four major gateways in Chicago, St. Louis, Memphis, and New Orleans. Additionally, Union Pacific operates key north/south corridors and is the only railroad to serve all six major gateways to Mexico. UP also interchanges traffic with the Canadian rail systems.