The magazine for the crane, lifting and transport industry

AMERICAN Cranes&Transport

October 2007
Volume 3 ➲ Issue 10

A KHL Group Publication

www.khl.com/act

marketplace

The place to buy & sell cranes, lifting and transportation equipment

Official domestic magazine of the SC&RA (Specialized Carriers & Rigging Association)

Twirling in unison on the horizon, windmills appear to be simple machines that harness wind and transform it into clean fuel. But erecting these giant machines is anything but simple. **D.Ann Shiffler** reports

Harnessing the wind

The wind power market continues to provide a strong stream of work for crane owning companies. Windmill erection has become a solid growth market for companies willing to invest in the cranes required to erect the ever taller and heavier windmills.

Buckner HeavyLift started serving the wind market several years back, supplying cranes that have worked on wind farms throughout the US, although the company is located in Graham, NC. The company continues to order large-capacity cranes to meet demand in the wind market and other energy and power generation markets.

"The wind market definitely remains strong," says Doug Williams, president of Buckner HeavyLift. "It's hard to look too far into the future but right now I at least feel confident about the next three to four years. That's farther than I can normally feel confident about anything. My gut feeling is it will go longer than that. And then even once the erection of new windmills slows down there's a lot of demand on the maintenance side."

While most of Buckner's business has been in the erection of new wind towers, Williams said that he anticipates maintenance work will provide a steady stream of work in the future.

"The major components, the main rotors that support the blades and gear boxes have a life and have to be changed out at certain points and that takes a fairly sizeable crane to do," he says. "Maintenance is already going

Bigge's LR1300 setting turbines on a wind farm in Texas. The crane is rigged with 272 feet of boom and 23 feet of jib

on and will be continuous as more and more windmills are erected."

Wind turbine erection requires heavy lift cranes with strong capacities for lifting and reaching. Crane manufacturing companies have responded likewise by producing cranes better designed for this type of work.

"I think the crane manufacturers have definitely responded to the wind market," says Williams. "From our company's position, the leading crane thus far has been the Liebherr LR 1400 and special elements such as the heavy fixed jib for windmill erection."

Also new to the market in 2008 are narrow track crawler cranes designed for wind farm use. Williams says he has reviewed the attributes of these models and that they definitely have their place in the market, although he has not yet made an investment in one of these machines.

"I want to own cranes that are not just specific to the wind industry," he says. "I don't really see the narrow tracks being quite as versatile as your typical crane."

Williams says his company recently placed orders for the Kobelco SL 6000 machines that were specifically designed with wind turbine erection in mind, although their operation is not exclusive to that market.

The SL 6000 offers simplified

Purchased from Stafford Equipment, W.O. Grubb recently took delivery of a 375 ton capacity Demag CC 2200. The first project for the crane was a windmill farm in Thomas, WV

walking tall

A brand new Manitowoc 18000 erects 30 windmills on a new development in Jeffers, MN

Photo by Shann Deprey

Working in Jeffers, MN this summer, a Manitowoc 18000 erected 30 Clipper Liberty Wind turbines. The nacelles weigh in at 190,000 and were installed atop 80 meter towers. Owned by Mullen Crane, based in Soda Springs, ID, the crane was on rent to Wanzek Construction, one of the nation's largest wind farm contractors.

The machine was rigged with 300 feet of main boom and a 25 foot wind jib. "This was the best machine for the job because of its capacity," says Ray Mullen, owner. "At that radius and height, the crane is good to lift 292,000 pounds and it is capable of working in 35 mph winds."

The machine is only six months old, and Mullen says he ordered it specifically to do wind work. The crane was moved from the Jeffers wind farm in late August and was already working to erect 90 Suzlon windmills on a wind farm near Evanston, WY by mid-September.

Mullen has been working in the wind market since 2001 and the company has wind work lined up for the new 18000 for at least the next year.

"We have another Manitowoc 18000 on order and we have a Manitowoc 16000 which is used on wind farms as well," he says. "It's a good market for us across the Northwest area."

Bigge's Terex American HC 275 crawler setting tower bases on a job in Washington State

Bigge's new Link-Belt RTC8090 is used as a support crane on wind farm projects because of its chart, reliability and ease of transport, the company reports

transport and assembly. "Kobelco focused on long booms, and an up close radius with capacities to erect some of the larger windmills that aren't even the norm right now but will be within the next few years," says Williams.

Wind farms in the US are going through a similar evolution as what happened in Europe, Williams explained, with the trend toward taller and heavier windmills. "Maybe it's a bit accelerated because the technology has already moved along," he says.

Currently, demand for large cranes is such that Williams says it is difficult to supply the cranes and operators needed. "Our LR 1750s are busy on long-term power plant projects, but I'm sure there will be a point when these cranes will be in demand on some of the larger wind turbine projects."

High velocity

Did the velocity of the wind market catch manufacturers off guard?

Williams answers: "In retrospect, the whole crane market is so out of the norm right now that it was not just the wind market that caught them off guard. The manufacturers are doing all they can, and if you had backed up 18 months before the boom you would have had to have been pretty daring and had a pretty good crystal ball to see anything like this coming. In my career and knowledge, we've never seen anything like it before and I'm not sure anyone out there has."

While Buckner HeavyLift has done well in the wind power market, Williams says that the work is hard on a crane. "As nice as the wind work is, it really isn't a problem for us if one of our cranes gets tied up on a long-term power plant project because the work is so much easier. Wind work requires a lot of crawling of the crane. There's much more wear and tear and maintenance."

In other words, wind tower erection is not as simple and as magnificent as it looks. Typically, the wind farms are located in fairly severe locations, obviously where conditions are windy. "Many times they are in areas where there is extreme weather and you are generally working with demanding schedules, so you are faced 12 months out of the year with having to have operators and back up operators and support often a long way from your home base with very little flexibility," he says. "In other words, it's not all candy, but it's also good work and there's a lot of it at a fair price."

Training vital

Operator training is another complicated aspect of the wind power market. "There is a lot of training needed for this type of work," Williams says. "The demand for operators and the supply of operators is not equal, so we have had to spend time and money training operators. There are times when we will put two operators on a crane, with the second

Bigge's Demag AC500-1, a 600 ton capacity AT, is used for wind turbine maintenance up and down the West Coast

operator observing so he can get familiar with windmill erection and learn the process. That's a constant challenge."

Windmill erection requires expensive cranes, expensive labor and a hefty investment by the companies that choose to enter the market. Bigge Crane & Rigging of San Leandro, CA has been servicing the wind industry for the past five years in California and throughout the US.

Last summer, Bigge received its first Liebherr LR 1300 for setting wind turbines. "It was one of the first ones delivered to the US," says Bigge's Joe Nelms. "The machine went straight out to a wind farm in West Texas."

LEFT: Buckner HeavyLift's Liebherr LR 1400 making its last pick at a wind farm in the Northwestern US

RIGHT: Buckner HeavyLift recently placed orders for the Kobelco 6000 for wind farm work

Besides that machine, the company also supplied a LR1160 for the project. The 200-ton capacity crane is setting the wind tower bases.

For its first job, the LR 1300 was rigged with 282 feet of main boom and a 23 foot offset tip. It was hoisting at about a 50 foot radius and in that configuration the machine is good for 147,000 pounds. The turbines the LR 1300 was lifting weighed 130,000 pounds and the towers were 65 meters high.

The new LR 1300 is a 330 ton capacity machine, and it's the largest crane Bigge has for wind turbine configuration. The machine is good for erecting 80 meter towers and turbines weighing up to 140,000 pounds.

Bigge has invested into the wind market for the long term, Nelms says. "We have six LR 1300s delivering this year, we have three in the field and three in delivery and all can go in the wind turbine configuration," says Nelms. "We have the LR1200s and LR1160s that are

support cranes and we have a rough terrain fleet, ranging from 55 to 120 ton capacities, which we have on lease nationwide. We have 30 rough terrains on lease in the wind market."

Bigge considers the wind market to be a serious industry. "Looking at the projections, the wind market is forecast to triple in the next 20 years," Nelm says. act