

Clipper Windpower and Iowa Energizing the Turbine Industry



INSIDE

■ Iowa Poised to Harvest the Wind

■ Iowa and P&G Remain Brand Loyal

■ Siemens Power Generation Finds Expanding in Iowa a Breeze

■ Iowa's Honey Creek Resort State Park Soon to be a "Sweet Destination"

■ Custom-Made Growth for Iowa's Custom-Pak

From a newly renovated manufacturing space in Cedar Rapids, Iowa, Clipper Windpower workers are busy manufacturing the company's revolutionary Liberty turbine. Jim Dehlsen, Clipper chairman and CEO, says the massive turbines will soon give his company—and the wind energy industry—a competitive edge against other manufacturers and electricity sources. The expansion helps solidify Iowa's leadership in the renewable energy field.

The Liberty turbine is the most technologically advanced turbine made by Carpinteria, California-based Clipper.

"Most wind turbines produce 1.5 megawatts of electricity," says Dehlsen, who also founded Zond Systems, one of the pioneering companies in wind energy. "But because of our technology, Liberty turbines produce 2.5 megawatts." The American Association

of Wind Energy says one megawatt of wind energy generates enough electricity to power 225 to 300 households.

What makes the Liberty so revolutionary is turbine design that should result in less down time and lower overall operating and maintenance costs. "The larger the diameter of the spinning blades, or rotors, the more energy that can be generated," says Dehlsen. "The Liberty turbine has a 305-foot rotor span, and towers approximately 250 feet high. Further, the 104-ton turbine enclosure, or nacelle, is about one-third the weight of a comparable 2.5-megawatt turbine manufactured by our competitors."

Dehlsen says his turbines can be used in a wider geographic area, because they can generate energy using less wind. "In effect, Liberty produces more energy from the same breeze. And since electricity is a commodity

“P&G’s expansions of its Iowa City-area distribution complex and manufacturing plant are great additions to our area,” says Joe Raso, president of the Iowa City Area Development Group. “When you have the world’s largest personal products company growing their brands locally, it says a lot about the state, its business climate and workforce.”

Iowa and P&G Remain Brand Loyal

When Procter & Gamble announced it was purchasing Gillette in a \$57 billion deal in early 2005, the shock waves reverberated all the way from Wall Street money managers to approximately 1,000 workers in Iowa. Iowa City has been the long-time home to manufacturing facilities of P&G and Oral-B (a Gillette company). The deal was expected to result in a reduction of 6,000 jobs from the combined global workforce.

Today, Oral-B continues to manufacture the No. 1 brand of toothbrushes in the world at its Iowa City location, just as it has for the past 47 years. And P&G’s Iowa City plant recently celebrated its 50th anniversary in Iowa City. The company is not laying off employees; in fact it is in the midst of two major expansions in the Iowa City area.

As Don Jackson, human resources manager for the Iowa City plant notes, “Acquisitions that have been good for P&G have also been good for the Iowa City plant.”

P&G is currently adding oral rinse and personal cleansing product lines to the Iowa City facility. The new product lines will create 40 jobs and bring \$29 million in new investment at the plant. The company is also moving ahead on a two-fold expansion at its distribution center in West Branch.

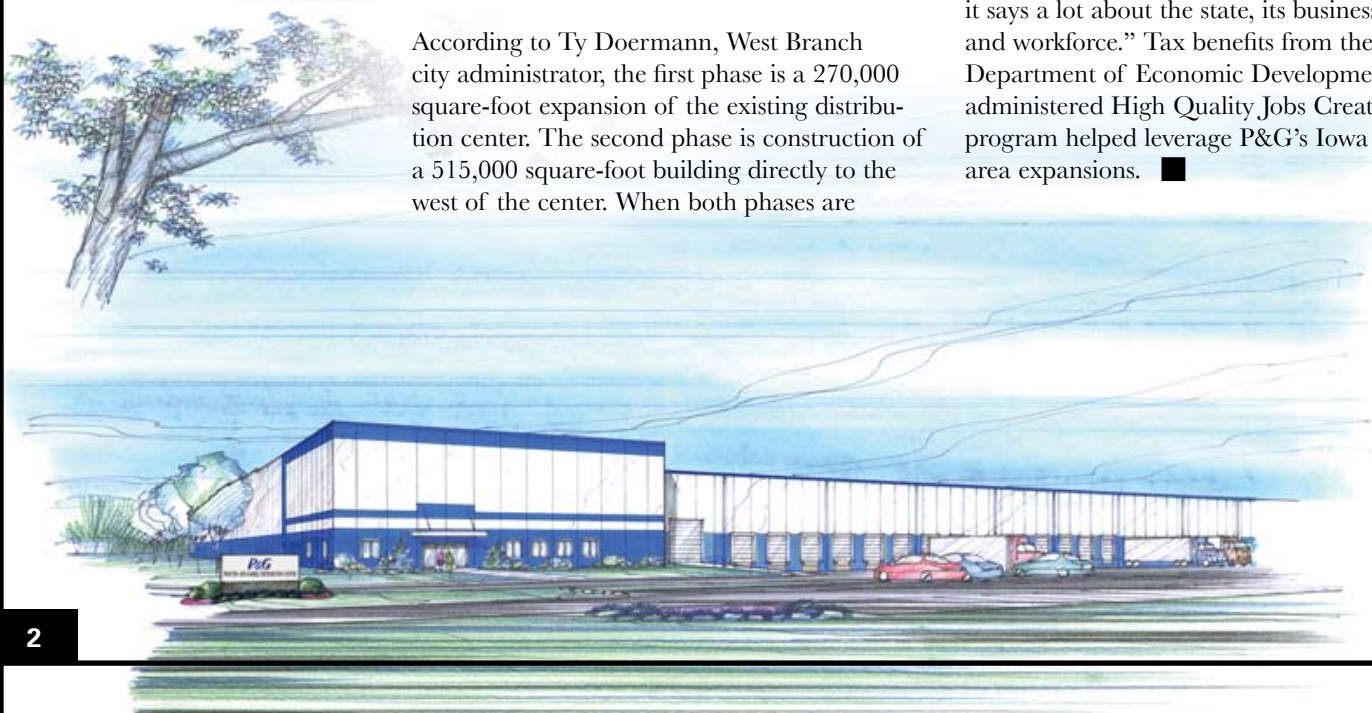
According to Ty Doermann, West Branch city administrator, the first phase is a 270,000 square-foot expansion of the existing distribution center. The second phase is construction of a 515,000 square-foot building directly to the west of the center. When both phases are

complete, P&G’s distribution complex will have more than 1.3 million square feet under one roof.

Cincinnati-based P&G, the world’s largest consumer-products company, began its Iowa City operations in 1956. It was only the second P&G plant built for producing health and beauty care products. When the facility first opened it produced Crest and Gleem toothpastes and Drene and Prell shampoos. Its current brands include Physique, Head & Shoulders, Pert, Pantene, and Vidal Sassoon shampoos and conditioners, along with the oral rinse Scope.

What’s been constant throughout the many years of P&G’s operation, according to Joe Raso, president of the Iowa City Area Development Group, has been its Iowa workforce. “The Iowa City area has one of the most productive environments for personal product companies such as P&G, and our region continues to witness growth in this important industry cluster,” says Raso.

The long-standing relationship between Iowa and P&G has been mutually beneficial. “P&G’s expansions of its Iowa City-area distribution complex and manufacturing plant are great additions to our area,” says Raso. “When you have the world’s largest personal products company growing their brands locally, it says a lot about the state, its business climate and workforce.” Tax benefits from the Iowa Department of Economic Development-administered High Quality Jobs Creation program helped leverage P&G’s Iowa City-area expansions. ■



Siemens Brings a Mighty Wind to Fort Madison

German manufacturer Siemens Corp. has announced plans to build a U.S. turbine manufacturing facility in Fort Madison. Citing rapid growth in the wind turbine business, Randy Zwirn, president of Munich-based Siemens Power Generation, says the company is converting an existing 224,000 square-foot building to meet strong U.S. demand for wind power generators.

“This will be Siemens’ first U.S. wind turbine production facility and will expand the capacities of our worldwide manufacturing network,” says Zwirn. “Our Fort Madison expansion is another important step in our strategy to build a global presence in the wind energy business, and to serve growing markets.”

According to Lowell Junkins, executive director of Lee County Economic Development Group, when the Fort Madison plant is upgraded and expanded it will employ 250 Iowans at an average wage of \$19 per hour.

“We’re very excited to have one of the world’s premier entities in the international power generation sector coming to southeast Iowa,” says Junkins. “With this facility, Iowa can become the epicenter of supplying clean, alternative energy sources.”

Recruiting of employees has already begun, and Junkins says Siemens is looking for management, administrative and technical support personnel as well as an estimated 200 production and maintenance people required to manufacture the wind turbine blades.

“Company officials have told me they hope to be producing rotor wind blades here by summer 2007,” says Junkins.



The first wind turbines and blades to be produced in Fort Madison will be the company’s 2.3-megawatt wind turbine. It will incorporate Siemens-patented Integral Blade technology.

“With this technology, the blade is cast in one piece in a single step from a reinforced epoxy resin in a closed, environmentally compatible process,” says Zwirn.

Lee County and Fort Madison provided financial assistance to leverage the \$17 million expansion. The Iowa Department

of Economic Development approved an award from the Economic Development Set-Aside (EDSA) program and tax incentives from its High Quality Jobs Creation program to assist the expansion.

Junkins feels Iowa’s central location was also key in securing the manufacturing facility. “The massive size of the blades, which are upwards of 150 feet and up to 15 tons, makes logistics critically important,” says Junkins. “Fort Madison’s proximity to water, rail and road transportation, as well as our central U.S. location, is ideal for wind turbine blade production.”

With the U.S. Department of Energy’s goal of obtaining six percent of the country’s electricity from wind by 2020, and growing public demand for clean energy, Zwirn expects wind energy to play an increasing role in the nation’s energy supply.

“We are committed to bringing clean, efficient power generation to the energy market. By expanding in Iowa, we will increase our ability to serve a market that is projected to triple by 2020,” says Zwirn. ■

Iowa's ongoing wind energy development

MidAmerican Energy Company, Iowa's largest energy company, has approval from the Iowa Utilities Board to build up to 545 megawatts of additional wind-powered electric generation in Iowa.

Iowa Winds LLC, Iowa Falls, is proceeding with permits to build a \$200 million, 200 to 300 megawatt wind farm on 40,000 acres of north central Iowa.

Clipper Windpower is developing two 150-megawatt wind farms in Crawford, Carroll and Dickinson counties.

The Top of Iowa II wind farm in Worth County will have an additional 110 megawatts from up to 67 wind turbines. The expansion is about six miles east of the original Top of Iowa wind farm, commissioned in late 2001. ■



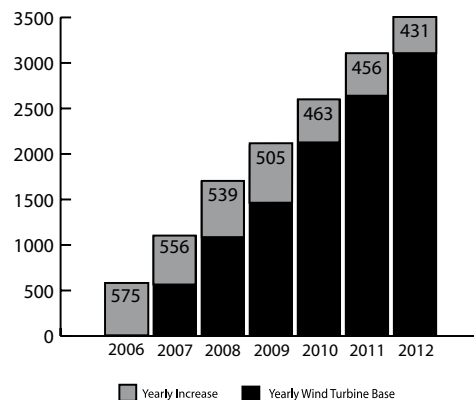
Photo courtesy of Iowa Lakes Community College Wind Energy & Turbine Technology Program

Growth market in Iowa for wind turbines

Yearly Increase of Total Wind Turbines for the Upper Midwest*

* Upper Midwest only includes Illinois, Indiana, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota and Wisconsin.

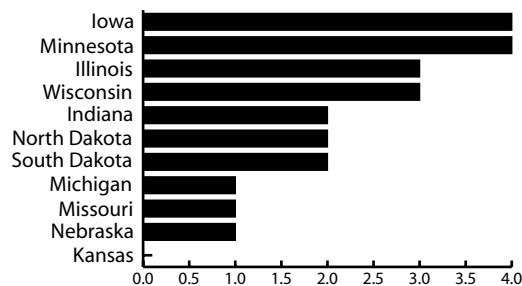
Source: Projections of Wind Generation in the Upper Midwest, Thomas A. Wind & Rory Artig - October 2005



A consultant's study shows strong growth in wind generation is very likely in the upper Midwest. The mean projection of new wind generation in the 11-state area totals about 7,750 megawatts over the period of 2006 through 2012. This represents a fleet of 3,500 new large wind turbines in the upper Midwest.

Overall Assessment of Effectiveness of State Incentives for Renewable Energy

Rating is a scale of 0 to 4; 4 = Most effective in encouraging significant commercial-scale wind generation development



Source: Wind Utility Consulting - December 2005

Rising winds of commercial generation

Large-scale wind farms that dot the landscape of Iowa with towering turbines mark the ongoing shift to renewable energy resources that is sweeping across the United States.

By harvesting abundant resources from wind and agriculture, Iowa has become a national leader in alternative energy, leading the U.S. in ethanol and biodiesel fuel capacity and leading the Midwest in wind electrical generation. Nationally, Iowa ranks only behind Texas and California in wind energy output.

Progressive public policies, state goals for renewable energy output and financial incentives are driving wind energy development in the state of Iowa.

Estimates show Iowa has the potential to generate five times its current electrical use from wind power and to become an energy exporter to other states.

About half of the state of Iowa has significant areas of the Class 3, 4 and 5 winds needed for commercial scale wind generation.

Manufacturers of wind power components such as Clipper Windpower Incorporated and Siemens Power Generation are investing in new production facilities in Iowa because the state is strategically located in the center of the growing U.S. wind turbine market.

For more information on manufacturing or alternative energy opportunities in Iowa, visit www.iowalifechanging.com or phone a project manager of the Iowa Department of Economic Development for a confidential consultation at 800.245.IOWA (4692). ■

Honey Creek Resort State Park: A Sweet New Iowa Destination

Iowa Governor Tom Vilsack, Iowa Department of Natural Resources Director Jeff Vonk and David Sweet, chair of Regency Hotel Management are shown breaking ground on the Honey Creek Resort State Park — Iowa’s newest destination state park. Located in Appanoose County on the 11,000-acre Rathbun Lake called “Iowa’s Ocean” by area residents, Honey Creek Resort is the first Iowa State Park to offer a full range of overnight accommodations and a broader range of recreational opportunities for the whole family. The first phase of the construction project includes a 105-room lodge with an indoor water park, meeting facilities and a restaurant, 28 cabins of various sizes, an 18-hole championship golf course, boat ramps and slips, and an RV park. The site is located on 850 acres near the existing Honey Creek State Park. Phase two of the project will include connecting the two parks with a series of multipurpose trails and a pedestrian bridge over the Honey Creek arm of Rathbun Lake.



Clipper Windpower — Continued from page 1



business, any improvement on the margins really gives you a tremendous advantage in the marketplace,” he says.

One of the world’s largest energy companies agrees. BP Alternative Energy has entered into a strategic alliance with Clipper for a long-term turbine supply and joint development of five wind energy projects in the U.S. that will generate 2,015 megawatts of wind energy. BP has also agreed to purchase 900 Liberty turbines over the next five years.

In addition to building its new Liberty turbine in Iowa, Clipper is also developing new wind farms in the state. The company is developing two 150-megawatt wind farms in Crawford, Carroll and Dickinson counties. When finished, each farm and its 86 turbines will generate enough electricity to power 45,000 homes. The wind farms are being leveraged by recently passed tax credits for wind producers by the Iowa Legislature.

Dehlsen says his Iowa location will help Clipper remain a wind-energy leader for the foreseeable future. “We’ve found an available and highly skilled workforce in Iowa,” says Dehlsen. “The Iowa Department of Economic Development, Alliant Energy, the Cedar Rapids Area Chamber of Commerce and the city of Cedar Rapids also provided significant support to help us launch our production facility.”

The \$22-million expansion project was leveraged by a \$500,000 award from the Iowa Department of Economic Development’s Community Economic Betterment Account program and \$346,000 from its Physical Infrastructure Assistance Program.

With Clipper Windpower and Siemens Power Generation (see story on page 3) both bringing wind power turbine production facilities to the state, Iowa continues its leadership position in the renewable energy industry. Iowa currently has 25 ethanol refineries with the capacity to produce nearly 1.6 billion gallons of that environmentally friendly fuel annually, with an additional 11 ethanol refineries under construction or expansion adding 775 million gallons of annual capacity. What’s more, Iowa has 14 biodiesel refineries either in operation or under construction with a combined annual capacity of over 315 million gallons.

As the push for renewable energy sources grows throughout the nation, innovative companies such as Clipper are finding that Iowa is the location to harness these winds of change. ■

Moving Iowa renewable energy into biogas

Iowa’s first commercial scale project to turn livestock waste into natural gas is being launched with the assistance of the Iowa Department of Economic Development.

The Economic Development Board awarded The Cornerstone BRAD LLC \$200,000 from the Value-Added Agricultural Products and Processes Financial Assistance Program (VAAPFAP) and tax benefits from the High Quality Jobs Creation (HQJC).

To be built near Hull in northwest Iowa, the BRAD, which stands for Biogas Regional Anaerobic Digester, uses technology from Europe to convert livestock manure into natural gas pure enough for home heating and appliances.

Plans call for the creation of 74 jobs at the new Iowa facility, which would be built with a capital investment of \$22 million. Using waste from livestock operations in the area, it will be the first plant for Bison Renewable Energy, a newly formed company from Minnesota.

Eventually the plant will be capable of producing 6.2 billion cubic feet of natural gas per year that would be sold to natural gas companies. A byproduct will be an odorless organic fertilizer. ■

Custom-Made Growth in DeWitt

Clinton, Iowa-based Custom-Pak, one of the world's largest plastic molded parts makers, is increasing its Iowa manufacturing capacity and workforce, according to Jeff Anderson, Custom-Pak president.

Founded in 1974 and boasting a 30-year track record of sales growth, Custom-Pak is more than doubling the size of its DeWitt operation, adding 70,000 square feet of manufacturing space to the facility.

"The DeWitt facility was built in 1994 to handle overflow capacity after we ran out of space at our Clinton campus," says Anderson. "The plant has become a major molder in its own right, which is why we are expanding there."

The \$2 million expansion will create 30 jobs and was awarded incentives from the Iowa Department of Economic Development, including Enterprise Zone tax benefits.

Along with its three-building Clinton campus and DeWitt plant, Custom-Pak has locations in Walnut Ridge, Arkansas, and Mexicali, Mexico. The company designs and manufactures blow molding machinery and molds and holds numerous product, process and technology patents.

"From product design, resin and compound selection, tool and die making, product manufacturing to recycling plastic products for new uses, Custom-Pak is a one-stop shop for those needing state-of-the-art plastic products," says Anderson.

Although Custom-Pak has no proprietary products, Anderson says the company works with its customers to design and develop more than 200 new products each year. "Our products are manufactured for market-leading companies in the appliance, seating, hand tool, electronic, houseware, recreation and lawn and garden industries," he says.

Blow molding produces plastic structures that are stronger, lighter and less costly than competing processes. "Blow-molded parts offer customers a tremendous competitive advantage and we feel our package of quality, price and service is unsurpassed," explains Anderson.

With the doubling of its De Witt production facility, Custom-Pak is proving that value wins out in the battle for customers and sales. Astute management, highly skilled workers and supportive state and local governments make Custom-Pak a custom-made Iowa success story.

As with other manufacturing sectors, Custom-Pak is facing increased competition from foreign companies, but the company continually looks to find product niches that are not as vulnerable to overseas competition.

"We're constantly looking for new products that are made in North America," Anderson says. The company also keeps a tight lid on costs by building both the molds and production equipment in house. "We produce our own line of blow molding machinery and the molds for our products," says Anderson. "The idea is that we design our equipment to be ultra flexible, and it can be moved into

any plant when it's needed."

The company is also actively involved in waste reduction, recycling and environmental stewardship. "Our Midwest-Poly recycling facility has been reclaiming waste plastics for more than 20 years. Each year we transform over 15 million pounds of scrap plastic from other manufacturers into consumer products," Anderson says.

With more than 600 employees operating state-of-the-art blow-molding production lines, Custom-Pak is growing in the face of competitive pressures by producing parts and products to exacting specifications.

With the doubling of its DeWitt production facility, Custom-Pak is proving that value wins out in the battle for customers and sales. Astute management, highly skilled workers and supportive state and local governments make Custom-Pak a custom-made Iowa success story. ■

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guest opinion

Clipper Windpower and Iowa: An Energizing Partnership



James Dehlsen
Chairman and CEO
Clipper Windpower

As the global market for wind power continues to grow—from 14,000 megawatts in 1999 to more than 45,000 megawatts in 2004, Clipper Windpower continues to assert a leadership position in this \$9 billion-a-year industry. Windpower energy is projected to grow at an annual rate of 15 percent to 25 percent for the next five years. This trend is driven by:

- An accelerating global demand for electricity. Over the next 25 years the world will require the construction of more electrical generating capacity than was built in the previous 100 years.
- Wind power costs that are competitive with fossil-fuel power generation. Further rises in fuel costs will only add to the economic advantage for wind power.
- Petroleum reserves concentrated in politically volatile parts of the world. Industrialized nations are seeking the security of renewable energy resources such as wind.
- Climate change. Thought to be caused by burning fossil fuels, climate change is stimulating world governments to take measures to promote clean energy.
- The potential of wind energy producing more than 20 percent of the U.S. electricity needs, with comparable opportunities for the world's major economic regions.

Clipper Windpower and our new Cedar Rapids, Iowa, production facility are poised to take advantage of wind power's growing acceptance through a variety of means.

Our patented wind-turbine technology, the Liberty turbine, significantly reduces the cost of wind power generation.

We are also aggressively growing our wind project development portfolio, which now exceeds 6,000 megawatts.

Additionally, we have recently formed a strategic alliance with the global energy giant BP Alternative Energy. This will provide both Clipper and BP unparalleled opportunities to capture major footholds in the U.S. wind energy market. Over the next five years, Clipper will not only deliver up to 900 Liberty turbines to BP, but will also jointly develop five wind energy projects with total generating capacity of more than 2,000 megawatts.

Finally, in Iowa we've found a location that shares our vision of wind power as a vital industry that offers attractive business opportunities while furthering energy sustainability and a healthy environment.

A series of financial incentives and tax credits from the Iowa Department of Economic Development, the Cedar Rapids Area Chamber of Commerce, Alliant Energy and the city of Cedar Rapids helped us launch our \$22 million turbine production facility in Iowa. And with an available and highly skilled workforce, central U.S. location and extensive transportation infrastructure, we believe our Iowa location will pay dividends well into the future.

As the nation's leading producer of ethanol and biodiesel, Iowa is building upon its national reputation as an innovative renewable fuel and energy leader by aggressively pursuing more wind energy production. We invite you to take a closer look at Iowa as we harness the winds of renewable energy. ■