Baby Steps in Wind Energy

ALEX CANNELLA

The Department of Energy estimates that 4 million megawatts of potential power—four times the amount all U.S. power plants combined currently produce—exists in offshore wind energy. Construction of America's first offshore wind turbines began in July. The wind farm, which is being constructed off the coast of Block Island, RI, will consist of five turbines. Together, they will produce 30 MW.

It's not even a drop in the bucket. But it's a start, and may mark the beginning of a sea change in public opinion on offshore wind energy.

The idea of offshore wind turbines has always been a contentious issue in the United States. There's no question that all that extra, clean energy would be a boon to the country. Wind turbines sound great on paper, but the voice for change suddenly gets caught in people's throats once they realize those turbines are coming to a coast near them. Between the noise and the towers of metal spoiling otherwise unbroken ocean views, complaints start arising once people start to realize that to make the ideal reality, there will be changes to their personal lives.

Even at Block Island, there's some degree of "Not in my Back Yard" syndrome going on. Despite that, however, developer Deepwater Wind's project has been pushed through with surprising ease, unlike past attempts elsewhere.

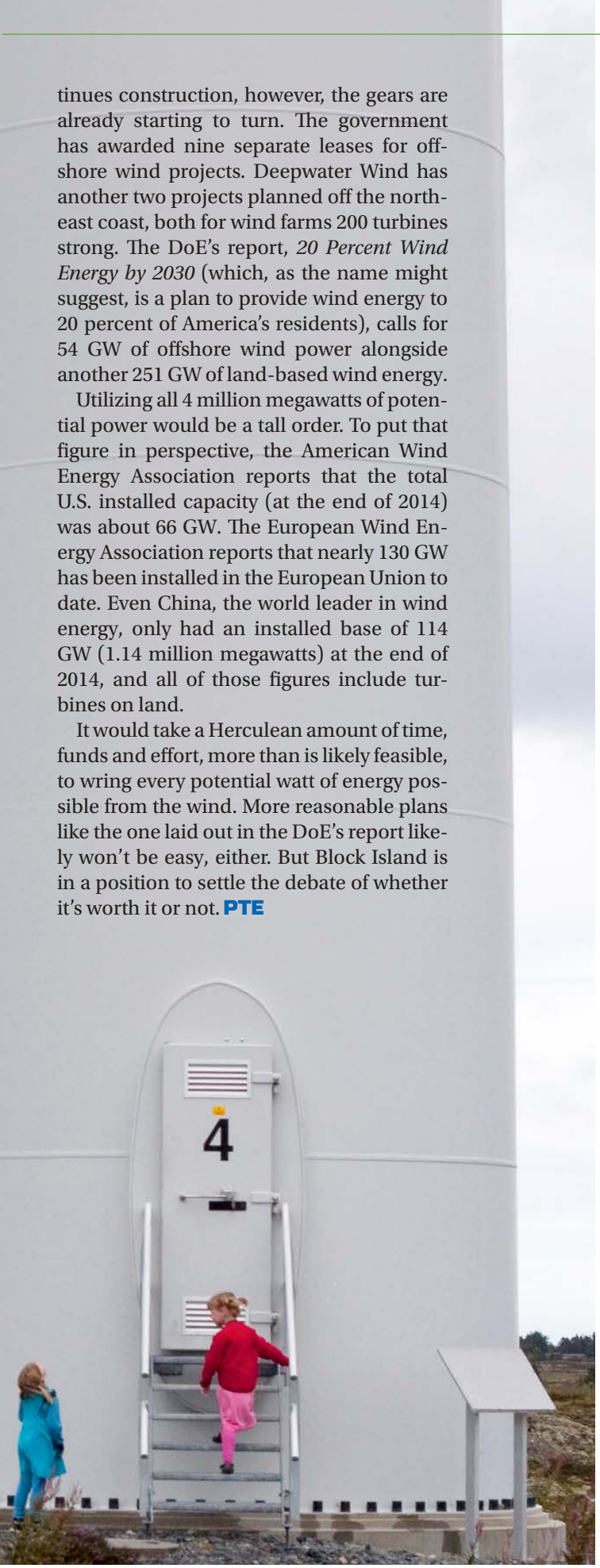
So what's different here? For one thing, the turbines will be placed three miles away from Block Island and 12 miles off mainland Rhode Island's coast. It's predicted that the turbines won't even be visible from the mainland. Block Island is also suffering from crippling electricity costs—50 cents per kilowatt-hour—and just those five turbines are predicted to reduce electricity residents' bills by 40 percent. In the face of those savings, the ocean view sounds like a small price to pay.

While the scale is small, Block Island's turbines might lay down a precedent for future, larger-scale operations as a proof of concept. Even as Deepwater Wind con-

tinues construction, however, the gears are already starting to turn. The government has awarded nine separate leases for offshore wind projects. Deepwater Wind has another two projects planned off the northeast coast, both for wind farms 200 turbines strong. The DoE's report, *20 Percent Wind Energy by 2030* (which, as the name might suggest, is a plan to provide wind energy to 20 percent of America's residents), calls for 54 GW of offshore wind power alongside another 251 GW of land-based wind energy.

Utilizing all 4 million megawatts of potential power would be a tall order. To put that figure in perspective, the American Wind Energy Association reports that the total U.S. installed capacity (at the end of 2014) was about 66 GW. The European Wind Energy Association reports that nearly 130 GW has been installed in the European Union to date. Even China, the world leader in wind energy, only had an installed base of 114 GW (1.14 million megawatts) at the end of 2014, and all of those figures include turbines on land.

It would take a Herculean amount of time, funds and effort, more than is likely feasible, to wring every potential watt of energy possible from the wind. More reasonable plans like the one laid out in the DoE's report likely won't be easy, either. But Block Island is in a position to settle the debate of whether it's worth it or not. **PTE**



Emerson

DELIVERS UPGRADE AT CHAMPAGNE PRODUCER NICOLAS FEUILLATTE

Emerson Motors and Drives recently improved the drive system for The Centre Vinicole Champagne Nicolas Feuillatte (CV-CNF). CV-CNF is comprised of 80 cooperatives and represents over 5,000 wine-growers. Its facility in Chouilly, France, in the Marne region, is one of the most automated plants of its type, with a workforce of 235 people, half of whom are involved in production. The company output reaches 23 million bottles a year, making it one of the world's leading champagne producers.

"We needed to replace a series of drive systems, in a gradual process," said Frédéric Lopez, automation manager at CV-CNF. "We considered using the original supplier of the equipment, as well other leading firms in this sector "They were all able to supply equipment that would have met our expectations, but we also wanted to establish a partnership with a company able to deliver the level of service we needed. This is why we selected Emerson."

The existing drive system consisted of an automatic controller, an alignment controller, a variable speed drive and a motor. The solution from Emerson removes the need for the alignment controller, reducing the overall complexity of the system. It consists of a Control Techniques Unidrive M700 variable speed drive, connected to the automatic controller and combined with a Leroy-Somer DYNABLOC Pjn1102 low backlash servo-gear. This offers high overload tolerance, very high torsion strength and improved accuracy. Emerson's MCi200 machine control option module has been added to Unidrive M to manage positioning.

The Unidrive M700 drive is suited to this type of application, with a cycle time of 250µs, synchronised communications through real-time Ethernet and an integrated PLC for controlling movement sequences.

The entire application is simple to program using Engineering Control Studio. The system uses Unidrive M's embedded Advanced Motion Controller. In the final configuration, 15 different configurations have been defined to suit the various bottle shapes. Each cycle has a coarse pitch with a specific movement profile (position, speed, acceleration and deceleration), a fine pitch with a second movement profile (position, speed, acceleration and deceleration) and the number of short pitches to be carried out. The required configuration is selected using logic inputs, which automatically starts the chosen cycle.

The coarse pitch is performed then the fine pitches are chained together while the path is free. Signals for 'end of long movement' and 'cycle completed' are sent by the drive's logic outputs to the client system. All programming and training was carried out on site by Emerson's support teams.

"We have taken over the application completely so that we can make our own adaptations," Lopez said. "With its technologies, expertise, and service, Emerson has fully met our expectations and we are in the process of deploying their solutions across our entire site."

Romax

SECURES CONDITION MONITORING SERVICES AGREEMENT WITH MYTRAH ENERGY

Romax Technology Ltd. recently secured an agreement to provide condition monitoring services for India's largest independent power producer, Mytrah Energy Ltd., including end of warranty inspection services for 32 x 2MW wind turbines, from sites in Rajasthan and Gujarat, India.

Romax's condition monitoring software tools and predictive maintenance services provide wind farm owners and operators with diagnostic and prognostic intelligence to facilitate predictive maintenance regimes.

Spread across six states, with over 380 wind turbines in India, Mytrah Energy was entering the final stages of a two-year WTG warranty agreement with its existing manufacturer and approached Romax to provide a full WTG inspection service. The initial pilot project will cover eight wind turbines, before then running end of warranty inspections across the remaining 24 turbines.

In addition to end of warranty inspection services, Romax will also provide Mytrah Energy with training and support, equipping its engineers with the necessary skills needed to ensure WTG performance and efficiency improvements across its turbine fleet.

"The Indian wind market is growing at an exceptional rate and as a result we are continually looking for new opportunities to improve the performances of our wind turbine fleets," said Vikram Kailas, managing director of Mytrah Energy. "With a longstanding reputation for wind turbine maintenance expertise, Romax has the potential to help us predict reliability problems and intervene before they happen. We are very happy with the professional attitude of the Romax team and look forward to the results of this trial."

C&U Americas

RECEIVES 2014 VALUE IMPROVEMENT AWARD

The North American subsidiary of The C&U Group recently received the 2014 Value Improvement Award from Hitachi Automotive Systems Americas, LLC. The award was presented in recognition of outstanding value improvement and performance achievement. Roy Isaacs, C&U Americas' se-

nior account manager accepted the award during the fourth Annual Hitachi Automotive Systems Supplier Conference.

"The Value Improvement Award is a particular honor to receive because it recognizes and reinforces C&U's position in the market," said Tom Rouse, president of C&U Americas. "We offer our customers 'World Class Quality, and World Class Value' by being globally competitive in terms of quality, cost, delivery, service and technology. This important award from Hitachi is a testament to our ability to accomplish these goals."

Applied Mechatronics

TO SERVICE BROTHER GEARMOTORS'S CALIFORNIA CUSTOMERS

Brother Gearmotors recently entered into an agreement with Applied Mechatronics. Applied Mechatronics will commence servicing much of Brother Gearmotors's customer base in California.

As part of the agreement, Applied Mechatronics will serve as a liaison between Brother Gearmotors and many of its California-based customers while sharing its expertise in motion control automation. In addition to servicing existing Brother Gearmotors' customers in California, Applied Mechatronics will work closely with Brother Gearmotors' Business Development Manager, Rob Kaminski, to develop additional customers in the state.

"Applied Mechatronics has a solid reputation as a manufacturers' representative, not only due to its exemplary customer service but its engineers' ability to quickly gain expert knowledge of a company's products, service protocols and other applications," said Matthew Roberson, senior director of Brother Gearmotors. "We look forward to a successful relationship that utilizes our companies' combined strengths, to the benefit of our customers in California."

Bill Hewitson

NAMED PRESIDENT OF RULAND MANUFACTURING

Bill Hewitson was recently promoted to president of Ruland Manufacturing after serving as vice president of operations for the previous eight years. He is the third president in the company's history and succeeds Bob Ruland who will continue to oversee the company as Chairman.

"Bill has been instrumental to the success and growth of Ruland Manufacturing. His deep knowledge of the industry, our products, and our customers as well as his leadership skills make him well qualified to assume the role of President," says Bob Ruland.

Hewitson began his career with Ruland in 1995 as a mechanical engineer. He was responsible for developing most of Ruland's motion control coupling line and has been a key contributor behind the growth of the shaft collar and rigid coupling product lines. He has also contributed to Ruland's international expansion into the Asian and European markets. He is a graduate of Worcester Polytechnic Institute and holds a BS in Mechanical Engineering and a MBA.

MicroE and Applimotion

MERGE TO BECOME CELERA MOTION

MicroE and Applimotion recently merged to become Celera Motion. The existing MicroE and Applimotion product brand names and positioning will remain unchanged.

The MicroE brand of miniature precision optical encoders is available in several form factors and mounting options with incremental and absolute interfaces and resolutions up to 1.2 nm. A selection of rotary and linear scales delivering accuracy up to 1 µm is available.

Applimotion provides optimized solutions ranging from direct drive motor components to fully engineered, validated and tested products and value-add assemblies.

The use of the Celera Motion name is effective immediately, and will be implemented over the remainder of 2015.

ABB

TO BECOME FIRST GLOBAL INDUSTRIAL ROBOTICS COMPANY TO MANUFACTURE ROBOTS IN THE UNITED STATES

ABB recently announced that it is to start producing robots in the United States, making it the first global industrial robotics company to fully commit and invest in a North American robotics manufacturing footprint. The company made the announcement at the opening of a new robotics plant at its facility in Auburn Hills, MI. Production is to commence immediately.

The new plant is ABB's third robotics production facility, alongside Shanghai, China, and Västerås, Sweden, and will manufacture ABB robots and related equipment for the North American market.

The United States is ABB's largest market with $7.5 billion in sales. The company has invested more than $10 billion in local R&D, capital expenditure and acquisitions since 2010, taking local employment from 11,500 to 26,300. Continued investment in the North American value chain and manufacturing constitutes a significant part of ABB's global growth plans reflecting the company's Next Level strategy.

"Today, we are marking and celebrating the next stage of our commitment and growth in North America with the start of local robot manufacturing in Auburn Hills, US," said ABB CEO Ulrich Spiesshofer. "ABB is the first global automation company to open a robot manufacturing facility in the United States. Robotics is a fundamental enabler of the next level of North American industrial growth in an increasingly competitive world. With our continued commitment and investment, our local team is well positioned to support our customers with robotics solutions made in the United States. Our leading technology of web-enabled, collaborative and safe robots will contribute to job security and quality of work."

The portfolio of products manufactured at the new facility will expand in phases, with the goal that most ABB robots and robot controllers delivered in the United States, Canada and Mexico will be manufactured in Auburn Hills. Localized manufacturing streamlines the delivery process and results in significantly reduced robot lead times for customers.

Ken Clune

NAMED LAFERT NORTH AMERICA NATIONAL DIRECTOR OF SALES

Lafert North America (Mississauga, Ontario) recently announced the appointment of **Ken Clune** in the as national director of sales.

Clune brings over 19 years of experience in the electrical industries. Clune has a diverse background and knowledge in the area of sales and marketing for products, services and solutions, through a variety of sales channels. He is passionate about leadership, team work and delivering a positive customer experience.