

# MANUFACTURING

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## Siemens Gamesa sets sails with cutting edge offshore logistics concept



With the first load of nacelles shipped from Cuxhaven to the Belgian offshore wind-power plant Rentel on the purpose-built transport ship *Rotra Vente*, SGRE's Ro/Ro logistics concept is now fully functional. (Courtesy: Siemens Gamesa)

Siemens Gamesa Renewable Energy has now fully implemented its cutting-edge offshore logistics concept announced in late 2015: After the establishment of a blade plant in the harbor of Hull, England, in 2016 and the opening of a nacelle factory in Cuxhaven, Germany, in 2017, the company eliminated road transportation of large and heavy wind-turbine components from factories to installation harbors.

With the first load of nacelles shipped from Cuxhaven to the Belgian offshore wind-power plant Rentel on the purpose-built transport ship *Rotra Vente*, SGRE's Ro/Ro logistics concept is now fully functional. Compared to the former setup including road transportation and crane loading, SGRE significantly increases safety while saving approximately 20 percent in logistics costs. The concept is aligned to the offshore cost-out measures as part of the

business strategy presented by Siemens Gamesa at the Capital Market Day in February.

One key element of this advanced transport solution is the efficient link between Siemens Gamesa's offshore production locations in Cuxhaven, Germany, and Hull, England, provided by two purpose-built transport vessels. Another is the new process of loading and unloading these ships: Instead of lifting tower sections of up to 200 metric tons and nacelles weighing about 400 tons by crane, the large and heavy components are rolled on and off of these vessels. This "Roll-on/Roll-off" process is known as Ro/Ro. Siemens Gamesa has used this method inside its plants for many years. Based on this experience, the company's experts further refined the concept together with deugro, an international forwarder in the capital project and heavy lift field. Tailor-made transport

frames are used to store and move the nacelles. These transport structures are mounted under the bedframe of the nacelles and can be carried by self-propelled modular transporters (SPMTs). These self-lifting, motorized units feature a large array of wheels and are remotely controlled by experienced operators.

The two special transport vessels, each with a length of approximately 140 meters, are also operated by deugro Danmark A/S exclusively for Siemens Gamesa. The *Rotra Vente*, which has now been loaded in Cuxhaven, can transport eight nacelles of the current Siemens Gamesa direct drive wind turbine at a time. The second vessel, the *Rotra Mare*, accommodates three complete wind-turbine towers of three sections each or up to 12 rotor blades and transports them from the production facility in Hull, England, or from Aalborg, Denmark, to the respective installation port. Both vessels can also be unloaded by crane if required. This enhances the flexibility of the installation ports, which are selected according to project-specific requirements. Currently both ships use the Ro/Ro capabilities of the harbors on their routes between the U.K., Denmark, and Germany to the Rentel installation port in Ostend, Belgium.

Since inauguration in November 2016, the two transport vessels are well integrated into SGRE's value chain: More than 130 voyages have been made. Both ships have delivered components for more than 250 wind turbines to eight different offshore wind power plants. Thanks to

Ro/Ro loading, more than 2,000 lifts has been mitigated.

"As our manufacturing footprint and logistics concepts continue to mature, we make additional progress on lowering the levelized cost of energy for offshore wind," said Andreas Nauen, CEO Offshore at Siemens Gamesa Renewable Energy. "We're able to deliver these components more safely and more efficiently by eliminating crane lifts. The experiences we have made over the last month confirm that the expected savings of up to 20 percent in logistics costs compared to traditional transport procedures will be fully met."

Over the next weeks, Siemens Gamesa will provide all 42 SWT-7.0-154 turbines for the Rentel offshore wind power plant. They will be preassembled and installed together with the towers and nacelles from the recently opened installation facility in the Belgian harbor of Ostend. SGRE will also service the Rentel offshore power plant from Ostend, where a service office with an additional 300 square meters of storage is under construction. Full commissioning of the Rentel project is expected later this year. The Cuxhaven nacelle plant will deliver the nacelles to the 588 MW Beatrice wind power plant and the 1,218 MW Hornsea One project, both of them are in the British North Sea. ↵

*Source: Siemens Gamesa*

For more information, go to [www.siemensgamesa.com](http://www.siemensgamesa.com)

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## Ty-Rap® cable ties mark 60th year with 28 billion ties

Thomas & Betts, a member of the ABB Group, will produce its 28 billionth Ty-Rap® cable tie in 2018 — the 60th anniversary of a simple product that has quietly become an essential part of the modern world.

Tied together, 28 billion Ty-Rap cable ties could reach from the Earth to the Moon 22 times and cinch around both equators, each time. Or it could girdle the sun seven times.

That's a lot of cable ties. But here on Earth, sales numbers are not the key to Ty-Rap cable ties' longevity. In fact, others have probably sold more ties since Thomas & Betts engineer Maurus C. Logan

patented the Ty-Rap cable tie, the original cable tie, in 1958.

For us, quality, not quantity, is the key, as it was in the beginning. And so is innovation.

Logan observed in 1956 that workers in a Boeing aircraft plant had to laboriously knot thousands of feet of electric cables together with waxed nylon cord, tearing their fingers in the process. He knew there had to be a better way, so he entered the lab and emerged two years later with his invention: the Ty-Rap cable tie, the world's first self-cinching cable tie.

By 1965, Thomas & Betts extended its patent on the Ty-Rap ca-

ble tie to include the characteristic Grip of Steel® locking barb in the Original Oval™ head. Combined with the equally characteristic ribbed and stippled body, rounded strap profile and upturned no-slip tail, the basic features of Ty-Rap cable ties gave them the ability to hold cable bundles with unparalleled strength and reliability. And the innovations have continued unabated since then.

Today, Ty-Rap cable ties come in heat-resistant varieties, along with product lines that are resistant to UV rays, harsh chemicals and extreme heat and cold. A version has been designed to withstand the



Ty-Rap cable ties come in heat-resistant varieties, along with product lines that are resistant to UV rays, harsh chemicals and extreme heat and cold. (Courtesy: Thomas & Betts Corporation)

sizzling radiation and vacuum of space. Another has been infused with special materials to make it easily detectable if it falls into food processing lines. And a variety of related Ty-Fast cable ties have been designed to kill microbes on their surface.

Ty-Rap cable ties come in lengths that range from 4 inches to 42 inches. They come in 12 varieties and have spawned several sister product lines, including all-nylon Ty-Fast cable ties, all-metal Ty-Met™ cable ties, and super-convenient Twist Tail® cable ties.

Ty-Rap cable ties are produced in plants in the U.S., Japan, and Hungary. From there, they have gone just about everywhere.

Heat-resistant Ty-Rap cable ties traveled with the Colonel Brothers as they pounded their race buggies through the brutal 5,600-mile Dakar Rally in South America in 2017. They hold engine cables on high-performance Formula 1 race cars in Europe. Ty-Rap cable ties bind cables in searing solar power farms and on weather-lashed wind generators all over the world. They help keep deep-ocean drilling rigs operating smoothly. And the toughest variety, the ETFE, sits on the surface of Mars holding cables on NASA’s Martian land rovers.

This year, the 60th anniversary, will see the introduction of an improved detectable Ty-Rap cable tie

that is up to 300 percent more detectable than similar cable ties on the market, and the introduction of a line that changes color in the presence of scalding heat.

“If the record of the past 60 years is any indication, the innovations are likely to continue from here,” said Andrew Battermann, ABB global product manager for fastening systems. “Because one simple fact has held true since the beginning — when performance really matters, Ty-Rap cable ties are there to do the job.”

Source: Thomas & Betts Corporation

For more information, go to [www.tnb.com](http://www.tnb.com)

## Siemens Gamesa to supply 166 MW at four new wind farms

Siemens Gamesa Renewable Energy has entered into new agreements with Gas Natural Fenosa Renovables for the supply of 166 MW at four wind farm developments in Spain. These projects fall under the scope of the renewable capacity allocated to the Spanish utility as part of the auction held last May.

Specifically, Siemens Gamesa will commission a total of 48 of one of its most popular turbines, the SG 3.4-132, thus installing 166 MW of capacity. The company will also operate and maintain these four wind farms, which are due to be commissioned in mid-2019, for three years.

The blades for these turbines will be made at the Aoiz factory (Navarre, Spain) and the Tangier factory (Morocco), while the nacelles will be produced at the Ágreda facility (Soria, Spain).

Siemens Gamesa’s relationship with Gas Natural Fenosa dates back to 1997, since which time the company has supplied the Spanish utility with more than 670 MW, most of which is in Spain and Mexico.

Source: Siemens Gamesa

For more information, go to [www.siemensgamesa.com](http://www.siemensgamesa.com)



Siemens Gamesa will install 48 of one of its best-selling models, the SG 3.4-132. (Courtesy: Siemens Gamesa)

## Vestas sells first V120-2.0 MW turbines in North America

Xcel Energy Inc., a leading utility wind provider in the U.S., has placed the first V120-2.0 MW order in North America for the 138 MW Foxtail wind project in North Dakota. The V120-2.0 MW offers the 2 MW platform's longest blades, and the order marks another step forward in rotor length for the platform that has been key in Vestas becoming the leading wind-energy OEM in the U.S. for the last two years.

Including previously purchased 2 MW PTC components, the Foxtail wind project will be 150 MW upon completion and is part of Xcel Energy's proposed multi-state wind expansion to add 3,680 MW of new wind generation to its system across 12 projects in seven states across its territory. This expansion will increase Xcel Energy's wind capacity to more than 10,000 MW by the end of 2021.

"We're pleased to work with Vestas on the Foxtail Wind project," said Chris Clark, president, Xcel Ener-

gy Minnesota, North Dakota, South Dakota. "Investing in low-cost wind energy provides the benefits of clean, affordable energy directly to our customers. These projects deliver on our vision to keep energy costs low while also achieving 85 percent carbon free energy by 2030 for the Upper Midwest."

"We are pleased to expand our portfolio with Xcel Energy and supply the V120-2.0 MW, our most advanced turbine in the 2 MW platform, for the Foxtail project, which will help Xcel Energy realize their vision to deliver low-cost wind energy to their customers," said Chris Brown, president of Vestas' sales and service division in the United States and Canada. "Wind energy is an incredible contributor to the U.S. economy, and the production, construction, and operation of these turbines will generate hundreds of millions in economic benefit including considerable amounts of long-term, secure jobs."

Xcel Energy and Vestas previously partnered on the 600 MW Rush Creek wind project in Colorado, the largest wind project of its kind in the state. Rush Creek, currently under construction, is "Colorado made," with turbines produced at Vestas' Colorado factories, and is expected to save Colorado customers \$1.1 billion over the life of the project.

The order includes supply and commissioning of the turbines as well as a 10-year Active Output Management 5000 (AOM 5000) service agreement, designed to maximize uptime and energy production and ensure optimized performance for the lifetime of the project. Turbine delivery will begin in the second quarter of 2019. ↘

Source: Vestas

For more information, go to [www.vestas.com](http://www.vestas.com)

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