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GCUBE TARGETS TURBINE GEARBOX FAILURES IN REPORT

O&M segment of wind energy expected to reach \$19 billion by 2020



Specialist renewable energy underwriter GCube Underwriting Limited has published an in-depth report, entitled *Grinding Gearboxes*, analyzing gearbox failure by addressing root cause, financial impact and proactive steps to mitigate the frequency and severity of downtime.

As the central component of the drive system, the gearbox has always been a critical interface and constitutes 13 percent of the overall value of the typical on-shore wind turbine. Nonetheless, the current financial climate has led several major gearbox manufacturers to reconsider the manufacturing process from first principles, from forging to final inspection.

This rethink has contributed to market pressures that have seen some companies face insolvency, which, in turn, has presented a major issue for operators seeking repairs and component replacements following the end of the warranty period.

With approximately 175,000 geared turbines in operation in 86 countries worldwide, there are around 1,200 incidents of gearbox failure reported each year — one failure per 145 turbines per year — commonly ranging between \$200,000 and \$300,000 in insurance claims, in

some unique cases exceeding \$500,000.

It is therefore crucial that asset managers take proactive, preventative steps to ensure that this financial and operational risk is managed appropriately.

Following on from *Breaking Blades*, the *Grinding Gearboxes* report forms part of a series entitled *Global Trends in Wind Turbine Downtime Events*. It seeks not only to quantify the inherent risk and financial impact of gearbox failure, but also to promote knowledge sharing among GCube insureds and supporting insurance brokers with a view to minimising that impact.

The report utilizes GCube's extensive claims database to categorise all known root causes of gearbox failure, ranging from manufacturing defect and cracking of bearing coatings to abnormal blade loads and ineffective lubrication.

It then draws on the expert insight of leading gearbox manufacturer ZF,

specialist consultancy Romax, and wind energy claims specialists Renewable Energy Loss Adjusters (RELA) in three in-depth interviews that explore best practice for gearbox maintenance, analysis and repair.

Grinding Gearboxes demonstrates the challenges gearbox failures pose for wind farm operators around the world and promotes industry collaboration to minimise balance sheet losses across the board.

"While GCube recognizes that gearbox incidents are, in some ways, unavoidable and will continue to occur, we must empower our insureds to use our data to raise greater awareness among their asset managers and project teams about the wider macro trends affecting their peer group," said Jatin Sharma, GCube's Head of Business Development and co-author of the report.

"Such trends identify risk, as well as opportunities, which complement the experiences of asset managers and their operating fleet, particularly in newer, more remote geographic markets such as Chile and South Africa or as ageing assets enter the post-warranty phase of their lifecycle in Europe, the United States and Australia."

— Source: GCube Insurance Services

WASHINGTON UTILITY EXTENDS 429 MW SERVICE CONTRACT WITH VESTAS



Vestas has signed a 10-year extension agreement to service the Whiskey Ridge, Wild Horse and Hopkins Ridge wind projects. Located in central Washington, these facilities feature 214 V80-1.8 and 22 V80-2.0 MW turbines. Since their inception, Vestas has serviced all three sites, which later were incorporated into a Master Service Agreement. The new agreement extends Vestas' commitment to the projects through 2025.

A Washington state utility, Puget Sound Energy is the second-largest utility owner of wind power in the U.S., and the Pacific Northwest's largest utility producer of renewable energy.

Embodying Vestas' more flexible approach to service solutions, the extended service agreement, which covers all three sites, includes a

time-based availability guarantee that supports optimal turbine utilisation and productivity. This comprehensive service package includes scheduled preventive maintenance, diagnostic services and unscheduled maintenance, and full component coverage for maximum performance.

"PSE is excited to continue our excellent partnership with Vestas," said John Mannetti, PSE's Director of Wind Resources and Asset Management. "They've serviced these sites from the beginning of our wind program, and we're glad they'll be continuing to work with us as our assets progress through their lifecycle."

"Extending this service contract speaks to the strong partnership between Vestas and Puget Sound Energy. Since 2005, we have provided world-class service for their fleet of Vestas wind turbines," said Chris Brown, president of Vestas' sales and service division in the United States and Canada. "We are proud that Puget Sound Energy continues to trust our dedicated service team to deliver a portfolio management strategy that ensures the greatest long-term optimisation and return on investment for their assets."

— Source: Vestas

EDF RENEWABLE SERVICES EXTENDS KANSAS O&M CONTRACT

EDF Renewable Services, a provider of renewable O&M Services, has announced that Kansas City Power & Light Company (KCP&L) has extended an operations and maintenance agreement for the Spearville Wind Project (100.5 MW) and Spearville II Wind Project (48 MW) located in Kansas totaling 148.5 megawatts (MW) of General Electric (GE) turbines.

"EDF Renewable Services signed its first O&M agreement with KCP&L back in September 2006. We appreciate that they have trusted us to provide O&M services for the past 9 years. KCP&L is a valued customer that is committed to providing affordable clean wind energy to its ratepayers," said Larry Barr, Executive Vice President of EDF Renewable Services. "The turbines at Spearville are part of the GE fleet we manage encompassing more than 3,000 turbines for 4,800 MW."

Under terms of the Agreement, remote services will be performed by the company's NERC registered Operations Control Center (OCC). The OCC provides an efficient, reliable, and secure operating platform, while benefiting



from the centralization of SCADA functions and consolidation of multiple vendor environments to provide a common operating view. With enhanced service offerings with strategic partnerships, EDF RS brings auxiliary engineering and SCADA solutions to its customers.

— Source: EDF Renewable Services

PARTICIPANTS SET FOR 2016 COLLEGIATE WIND COMPETITION

Twelve colleges chosen to compete in challenge at WINDPOWER 2016



The Energy Department has announced the twelve collegiate teams that have been selected to participate in the Department's second Collegiate Wind Competition. The Collegiate Wind Competition challenges teams of undergraduate students to design and build a model wind turbine based on market research and siting considerations, develop a business plan to market their products, and test their turbines against a set of rigorous performance criteria. Bringing together the next generation of wind energy pioneers with today's industry leaders, the 2016 Collegiate Wind Competition will take place at the annual American Wind Energy Association (AWEA) WINDPOWER Conference and Exhibition in New Orleans, Louisiana, from May 23 to 26, 2016.

The Collegiate Wind Competition combines the expertise of students from a variety of engineering, business, communications, and social science programs, and challenges them to utilize their individual skills to develop state-of-the-art wind energy solutions as a team. Intertwining academic coursework with tangible, hands-on learning, the Collegiate Wind Competition provides valuable real-world experience as students prepare to enter the workforce.

Five new schools have been selected along with seven returning teams from the 2014 competition. The twelve colleges and universities that have been selected to participate in the 2016 Collegiate Wind Competition are:

1. Boise State University (Idaho)
2. The California Maritime Academy
3. California State University, Chico
4. Kansas State University
5. Northern Arizona University
6. The Pennsylvania State University
7. Universidad del Turabo (Puerto Rico)
8. University of Alaska Fairbanks
9. University of Maryland
10. University of Massachusetts Amherst
11. University of Massachusetts Lowell
12. University of Wisconsin Madison

Hailing from across the United States, from Alaska to Puerto Rico, each team brings diverse experiences and unique perspectives to the competition. The Energy Department held the inaugural Collegiate Wind Competition in 2014 at the AWEA WINDPOWER Conference and Exhibition in Las Vegas, Nevada, where over 150 students from ten institutions helped lay the groundwork for what has become the country's prominent undergraduate-level wind energy competition.

— Source: U.S. Department of Energy

DUKE ENERGY RENEWABLE SERVICES DESIGNATED A TOP QUALITY O&M PROVIDER

Duke Energy Renewable Services is a top quality operations and maintenance (O&M) provider highly capable of performing all O&M service activities for wind and solar energy clients, according to the largest independent technical advisor on renewable energy in the world.

DNV GL recently completed an independent assessment of Duke Energy Renewable Services, covering 10 key areas ranging from availability and production performance to company financial resources.

The DNV GL technical advisor visited wind sites and offices, conducted customer interviews, interviewed Duke Energy staff and technicians and evaluated operations data. In each case, the company scored in the high capability range.

“We are always excited to find ways to improve our service offerings,” said Jeff Wehner, vice president of Duke Energy Renewable Services. “This assessment helped us do just that, and it also confirmed that Duke Energy Renewable Services is a top-tier service provider in the wind industry.”

“It is our hope that asset owners, lenders and other vested parties have access to comprehensive information about O&M service providers and self-operators to support business decisions as industry best practices continue to evolve,” said Kevin Smith, head of Asset Management and Operating Services for DNV GL.

Duke Energy Renewable Services, an organization originating from Duke Energy’s 2012 acquisition of Minnesota-based Outland Energy Services, has experience operating nearly 4 GW of wind assets.

— Source: *Duke Energy
Renewable Services*

SHERMCO ANNOUNCES PROMOTIONS OF THREE STAFF MEMBERS

Shermco recently announced three executive promotions.

Former vice president of Production for the Engineering Services Division Pat Beisert was promoted to president of Shermco U.S. Beisert will be responsible for all operations in U.S. including production, sales and support staff. Beisert has 28 years in the electrical maintenance industry, and has been with Shermco since 2001.

“Shermco has more than doubled in size in the past year. With our continued growth through business development and acquisition, a reorganization was in order to accommodate expanding needs of our company and client base. Pat has been with the company many years and knows every aspect of our industry. Couple that with his business acumen, he was the natural pick to run our U.S. operations,” said Ron Widup, Shermco CEO.

Additionally, Paul Idziak has been promoted to vice president of the Machine Services Division. Formerly the group’s general manager, Idziak is responsible for overseeing the company’s Machine Services Division, which provides clients with superior electric motor and generator repair, rotating machinery field services, new equipment distribution, and engineering consultative services.

With a strong knowledge of both electrical systems and management skills, Idziak is responsible for more than 150 employees and over \$40 million in revenue. He has experience in all aspects of sales, operations, finance, accounting, quality control, and Lean/5S. He continues to grow as an influential person in renewable energy, oil and gas, defense, and electric utilities market segments in the area of electrical machinery and system maintenance. Idziak holds a BS in Industrial Distribution from Texas A&M and an MBA from the Cox School of Business at SMU.

Idziak started with Shermco as an account manager in 2009 and has been promoted five times in the past six years.

“Paul has already proven his ability to lead our Machine Services Division. We are proud to promote him to vice president in recognition of his success in this important and growing area of our business,” Widup said.

Rounding out the roster of promotions, Shermco corporate sales manager Mike Hancock will head up the national sales team for the company through his promotion to vice president of Sales for Shermco U.S.

In his new role, Hancock will lead Shermco’s professional sales force of account managers and sales engineers with emphasis on providing world-class electrical service offerings. The sales team in total consists of more than 80 sales professionals that serve the U.S. from multiple service centers located throughout the central states. Hancock has more than 22 years of experience in commercial and industrial electrical maintenance and repair. He joined Shermco in 2010.

Hancock’s professional affiliations include: Member of IEEE, NFPA99 Voting member on the Correlating Committee, Registered Professional Engineer for the State of Texas since June 2003, NETA IV Certified Technician.

“Mike Hancock has done a fine job in developing new opportunities and markets for Shermco, and I’m happy to promote him to Vice President of Sales,” Widup said.

— Source: *Shermco*