

# AVOIDING AN ILL WIND

*Anticipating and meeting the site challenges that arise on wind projects*

By Andrew Zlotnick, LEP, LEED AP  
and M. Michael Callahan, PE

After a lackluster 2013 for wind power development, the wind market is once again growing. According to a Bloomberg New Energy Finance report, installations this year could reach 6.5 GW and grow to 8.5 GW in 2015. As wind development continues on its upturn, the focus is moving from “whether” to invest in wind power to “how” to make sure projects succeed.

This is no small issue. The development of wind projects — whether a single turbine or larger wind farms — are huge undertakings. They require substantial equipment and complex infrastructure to support and operate that equipment.

One of the most important infrastructure elements, yet one that is virtually invisible, is site preparation. Large-scale energy projects aren’t typically developed on pristine, undeveloped land. Rather, they are often located on brownfields or other sites that have previously been used for industrial or other functions, and which have been abandoned or deemed unsafe for traditional usage. But even though wind projects are often located on discarded land, that land is essential

to the success of any project. It needs to undergo strict mitigation to assure that the energy-producing equipment can operate safely, and the structural integrity of the soil needs to be established so it can support the heavy equipment that’s necessary to provide wind power.

What’s located below ground is just as important as what’s located above. Therefore, it is essential for a project’s environmental team to be actively involved from a wind project’s earliest days.

Most sites retain historic relics from the past. For the typical brownfield site, which may have seen any number of previous industrial uses, that could mean presenting a smorgasbord of different types of processed waste, metals, petroleum byproducts, and chemical contaminants. So, the essential first step in developing a site for wind development is to conduct a comprehensive environmental investigation to determine what contaminants are present and provide the necessary information for creating a successful mitigation plan. Some of the contaminants can require significant interaction with regulatory authorities

in order to properly handle and dispose of the impacted material. For instance, if the subsurface material includes polychlorinated biphenyls (PCBs), there could be requirements to obtain both State and Federal (EPA) approvals while characterizing the site, and before the material is disposed. Depending on the concentration of PCBs, environmental samples





containing PCBs detected at concentrations >50 mg/kg (or at any concentration if not authorized for use under 40CFR §761.61) would be subject to the Toxic Substances Control Act (TSCA), and the site would be regulated for both cleanup and disposal under §761.61. Cleanup activities may require notification to the EPA and the State regulatory

authorities and depending on the site history and conditions, EPA may authorize more practical sampling, clean-up, or disposal procedures that are not prescribed in the regulations.

In addition, if there is subsurface material encountered that contains asbestos containing material (ACM), there may be requirements to prepare and

#### ALSO IN THIS SECTION:

- 20 Record project development spurred by PTC and other market factors**
- 26 Profile**  
Chokecherry and Sierra Madre Wind Energy Project
- 28 Conversation:** Rob Morgan  
RES Americas

*... even though wind projects are often located on discarded land, that land is essential to the success of any project.*

obtain approval for an Asbestos Abatement Work Plan. The plan must comply with the Environmental Protection Agency's (EPA) National Emissions Standards for Hazardous Air Pollutants (NESHAPs) regulations. Personnel that are hired to perform this work must have specific state licenses to prepare work plans, perform construction administration, conduct project monitoring and inspections.

These additional regulatory activities may also require that public notice be provided to area

stakeholders prior to construction and regulatory approval. When performing construction on impaired property, the public notice activities and regulatory approval process can take from as little as a few weeks to several months. This should be factored into the overall permitting and construction schedule to avoid any surprises.

While there are certainly contaminants, such as radioactive waste, that will pose immediate and continuous health risks if left in place, more often than

not, contaminants can be safely capped and left onsite. Capping involves containing contaminated soil within retaining walls and placing it upon an impervious liner cap. The contaminated soil is then covered with an additional two to four feet of clean soil. Using the capping approach rather than removing and disposing of contaminated soil can cut remediation costs by as much as 75%, so it's easy to see why private and public developers would prefer to go this route.

When creating a turbine foundation and assuring the integrity of the cap, it's not enough to merely consider the weight of the piles that will support the turbine and the depth to which they will be driven. The piles and turbines are enormous and they require very large equipment to transport and install them. The cap and site foundation need to be designed to withstand the rigors of installation, as well as the day-to-day operations once the turbines are up and running. This is particularly important when building on historic urban fill. Urban fill almost always is a mixture of heterogeneous materials, making it very difficult to design the foundation. This has generally required making a unique site-specific manufactured fill by mechanically screening out unwanted material and mixing with imported material to create a satisfactory fill material suitable for development. This often means implementing construction controls to prevent

**MAEDC AREA**

Moberly-edc.com   moberly area::edc   660.263.8811

**Amazing Transportation Access**

- Air: Local Airports
- Truck: Interstate 70
- Port: Via Missouri River
- Rail: Multi Rail Access

**7<sup>th</sup> economic BEST**

Our region is located near the center of the population of the US called the population mean. Making distribution centralized.

Missouri is ranked 7th by the American Legislative Exchange Council

**10<sup>th</sup> Regulatory Environment**

**US v MAEDC Average Wage**

US: \$22
MAEDC: \$14

**Broadband + 4G**

**Thousands of Skilled Laborers**

**State and Local Incentives**

Our region is a beautiful historic area.



excessive equipment loads from trucks, cranes, and other installation equipment. A cribbing system can also be implemented to distribute the weight of construction equipment.

The threat of erosion is also a key consideration, both during construction and when the turbines are operational. If the land on which the wind technology is installed suffers erosion, brown-field contaminants can escape the site and infiltrate adjacent land. At the same time, erosion can undermine the structural integrity of the wind equipment itself. The potential threat of erosion to the structure can't be overstated. Wind turbines are large structures that require considerable sub-surface supports. It is essential to create an environment beneath the turbines that is safe and stable. Therefore, erosion and

sedimentation control plans are key elements of any development. This typically includes the installation of silt fencing, haybale protection around groundwater extraction wells, and catch basin inlet filters to catch and contain storm runoff when it rains.

Additional protection can be offered through the installation of a subsurface stormwater detention system, which can temporarily store stormwater from the site and manage its infiltration into the site. Stormwater mitigation is particularly important in this era of climate change because major storms are becoming severe and frequent.

With the turbine revolution once more gaining steam, developers of wind power projects need to be aware of all of the infrastructure challenges they are likely to face. Some of the

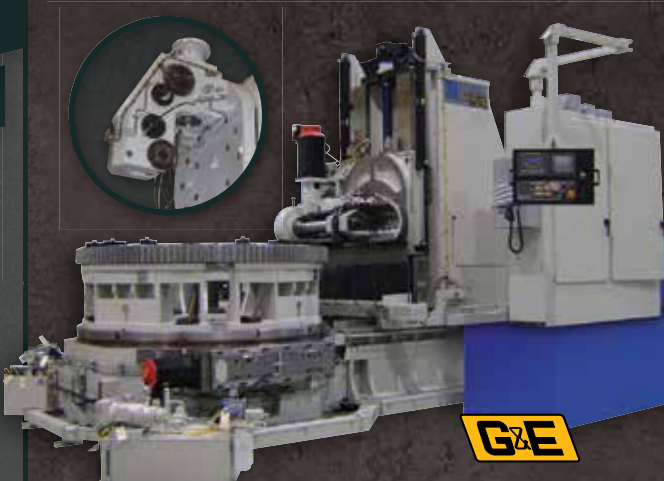


most serious issues will be found below ground, and at first glance, will be undetectable. That's why a project's environmental team should be involved from the very beginning of the planning stage and to the project's completion. By including environmental pros who can identify contaminants and other risks, and create plans to address them, wind power developers can save themselves numerous headaches — as well as a lot of money. ✎

## Your #1 Source for Gear Machinery

Gould & Eberhardt is a pioneer in high-speed gear gashing with large diameter carbide-inserted cutters. Our new line of machines has a rigid design and heads engineered with state of the art gear gashing cutter technology. Gear gashing technology has opened many gear cutting applications in wind energy, mining, off-highway construction and other coarse pitch gearing.

Our gasher/hobbers are equipped with the new G&E interchangeable cutter head design. This design provides the option for both internal and external heads on a single column machine with capacities up to 5.5 meters.



**704.872.8888**

**RP MACHINE**  
ENTERPRISES, INC.

860 Connor St • Statesville, NC 28677  
F: 704.872.5777 • [www.rpmachine.com](http://www.rpmachine.com)  
[sales@rpmachine.com](mailto:sales@rpmachine.com)

### INDUSTRY AT LARGE

# RECORD PROJECT DEVELOPMENT SPURRED BY PRODUCTION TAX CREDIT AND OTHER MARKET FACTORS

The wind energy project pace set late last year continues — and then some.

That's the story told by AWEA's latest quarterly industry market report, which reveals continued strong under-construction numbers headed into the second half of the year. Second quarter numbers reveal a record number of projects currently under construction, as the wind industry ramps up to capitalize on the 2013 Production Tax Credit (PTC) extension.

Currently over 14,000 megawatts of wind energy are under construction in the U.S. across more than 100 projects and 21 states. The bulk of the activity is happening in the wind-rich regions — from North Dakota and Minnesota, down through Kansas, Oklahoma and Texas.

### TECHNOLOGY TAPS WIND-RICH REGIONS

In those regions, technological innovations including larger rotor diameters and improved control systems and gearboxes have allowed developers to offer historically low power purchase agreement (PPA) prices. One notable difference on the technology front: Whereas several years ago turbine designers pushed to develop turbines with higher capacity ratings, today's turbine technology focuses more on higher capacity factors. The outcome: Preliminary data from the Department of Energy reveals an average 2013 wind PPA price of \$25/MWh focused around the nation's interior region, cheaper than at any time before.

As result, utilities, eager to take advantage of these historically low prices brought on by technological



*By Emily Williams*  
*American Wind Energy Association*

advancements and coupled with the extension of the PTC, have signed more than 9,000 MW of long-term contracts in 2013-14. These contracts have been touted for their economic benefits: consumer savings delivered over the life of the project, all while offering long-term hedges against fuel price volatility and future carbon regulations.

Stuart Solomon, president and COO of Public Service Company of Oklahoma (PSO) recently described his company's purchase of nearly 600 MW of wind power as "extraordinary pricing opportunities that will provide substantial savings for our customers." Solomon knows what he's talking about: PSO's contracts will reduce customer costs by \$53 million in the first year alone, with annual savings growing over the 20-year contract life.

These projects are also being built in some of the regions

hardest hit by recent and ongoing drought. As wind power uses no water for electricity generation, its water-saving attributes are hugely attractive to utilities and jurisdictions.

### OTHER FACTORS CONVERGE

Other factors are also allowing companies to focus on what they do best — build wind farms. The IRS's recent guidance on the physical work test, project ownership transfers and safe harbor provisions adds additional clarity for wind projects going forward.

Meanwhile, still another factor driving the current construction boom is at play. Corporate purchasers are investing in new wind generation. 2014 has seen new PPAs announced by Microsoft, for electricity coming from an Illinois wind farm, and Walmart, for power provided by a Texas facility. This year also has brought agreements between Google and Facebook for wind power from MidAmerican Energy's Wind VIII project in Iowa, IKEA's purchase of an Illinois wind project and the Mars Corporations' investment in a Texas project.

This activity is driven by corporations' internal sustainability goals, but also by the opportunity to save on energy bills — highlighting how wind power is both good for the environment and good for these businesses bottom lines. Even behind the meter, on-site generation is on the rise, with utility-scale turbines under development at a military base, a brewery, and a produce processing plant.

### TEXAS STILL UNRIVALED

Perhaps the greatest driver of this

*The bulk of the activity is happening in the wind-rich regions – from North Dakota and Minnesota, down through Kansas, Oklahoma and Texas.*

construction boom is the completion of the Competitive Renewable Energy Zone (CREZ) transmission lines in Texas. Recognizing that projects wouldn't get built without transmission, and that transmission providers wouldn't build lines without generators, the proactive transmission planning and broad cost allocation that took place under Texas's CREZ initiative is ensuring that the state will remain a world leader in wind power.

Texas has led the nation in installed capacity since 2006. That will continue. At the end of the second quarter, more than 8,000 MW were under construction across the state, in both the Southwest Power Pool (SPP) and the Electric Reliability Council of Texas (ERCOT). In short, more wind is now under construction in Texas than is currently installed in any other state. More than 7,300 MW have interconnection agreements with ERCOT for 2014-2015 alone.

In addition to the 14,600 MW under construction, the U.S. wind industry currently has an installed capacity of 61,946 MW, with utility-scale projects located in 39 states plus Puerto Rico. It is now up to Congress to continue the incentive for private investment in new wind farms so that the wind industry can continue providing clean, homegrown energy to American consumers. ✎

For more information on the Second Quarter Market Report, please visit [www.awea.org/2Q2014](http://www.awea.org/2Q2014).



**Central.**  
**Connected.**  
**Capable.**

**Central:** The Joplin region's strong central U.S. location is right in the heart of growing wind energy markets.

**Connected:** Efficient, cost-effective highway and rail transportation routes provide easy connection to major wind project areas. Eight OEM turbine manufacturers are within 600 miles.

**Capable:** A large, hard-working labor force has the capabilities to meet the highest level of customer demands.

 **JOPLIN REGIONAL PARTNERSHIP**  
**Central. Connected. Capable**

Existing Joplin region companies are already engaged in the wind industry and offer unique supply chain opportunities in fiberglass nacelles and hubs, turbine gearbox bearings, fabricated metal structures and components, electronics and cabling, energy storage systems and oversize, overweight transportation.

**Kevin Welch, Director, Joplin Regional Partnership**  
320 East 4th Street | Joplin, MO 64801  
[kwelch@joplinregionalpartnership.com](mailto:kwelch@joplinregionalpartnership.com)  
[www.joplinregionalpartnership.com](http://www.joplinregionalpartnership.com)  
417.624.4150 | 417.624.4303 (fax)



## EDF EN CANADA ALIGNS WITH McLEOD LAKE INDIAN BAND FOR THREE POSSIBLE WIND FARMS IN BRITISH COLUMBIA

Representatives from EDF EN Canada Inc., a subsidiary of EDF Energies Nouvelles, and McLeod Lake Indian Band (MLIB) today jointly signed a Memorandum of Understanding (MOU) during a ceremony conducted at the McLeod Lake Indian Band Annual Meeting. The MOU concerns the potential development of three wind energy projects representing over 500 megawatts (MW) of clean power in the Peace River Region of British Columbia.

"We are extremely pleased to have entered into this MOU with McLeod Lake Indian Band," commented Cory Basil, Vice President of Development at EDF EN Canada. "The MOU reinforces our relationship and commitment to meaningful engagement and consultation. We will continue to work together, respectfully and collaboratively, with MLIB on projects which will bring economic benefits and opportunities to the Band and the Peace River Region."

McLeod Lake Indian Band Chief Derek Orr said,

"The McLeod Lake Indian Band supports EDF EN Canada in the responsible development of sustainable, non-polluting and environmentally sensitive wind energy in the Peace Region. We look forward to a long and mutually beneficial relationship with EDF EN Canada and the addition of more wind power in our region."

The three projects represented in the MOU are the Sundance Wind Project, Taylor Wind Project and Wartenbe Wind Project. Both Taylor and Sundance projects are undergoing a BC Environmental Assessment. The projects could deliver power as early as 2017 subject to clearing the environmental assessment process and securing power off-take agreements from BC Hydro. The Wartenbe project is construction ready, having previously received its BC Environmental Assessment Certificate.

— Source: EDF EN Canada



# Women of Wind Energy is thrilled to announce the 2014 Rudd Mayer Fellows.

WoWE welcomed to Las Vegas six outstanding women as the 2014 Rudd Mayer Fellows, wishing them great success in the renewable energy field.

**Tanzila Ahmed**  
Kansas State University  
Electrical Engineering

**Allie Brown**  
University of Georgia  
Anthropology

**Kalie Brunton**  
Columbia Gorge Community College  
Renewable Energy Technology

**Kaitlyn Bunker**  
Michigan Technological University  
Electrical Engineering

**Melissa Showers**  
Massachusetts Institute of Technology  
Mechanical Engineering

**Huiyi Zhang**  
Iowa State University  
Wind Energy Science, Engineering, and Policy

Is your company on the sponsor list? Email [giving@womenofwindenergy.org](mailto:giving@womenofwindenergy.org) for more information.

Thank you to our lead sponsors!



# EFFICIENT CHANGE FOR A GREENER WORLD

- Enclosed Clean System Reduces Chance of Spills
- Vacuum Fill Oil at Faster Rates
- Box Flush and Rinse Capabilities
- All Fresh Fluids Filtered
- Safer for Employees and Environment
- Lower Lifetime Cost of Ownership

**Sage**  
**OIL VAC**  
**WIND**

877-OIL-VACS • [WWW.SAGEOILVAC.COM](http://WWW.SAGEOILVAC.COM)

## STARWOOD ENERGY CLOSES FINANCING FOR 165 MW TEXAS WIND PROJECT

Starwood Energy Group Global, LLC, a leading private investment firm focused on energy infrastructure, recently announced that an affiliate has completed agreements to finance and construct its second wind farm, a 165 MW project 45 miles south of Lubbock, Texas.

The Stephens Ranch II project, which represents the second of two phases that will total 377 MW, will use GE 1.7-100 turbines and be built by Wanzek Construction, with completion scheduled for mid-2015.

Affiliates of Citi, Morgan Stanley and MUFG have committed to invest tax equity in the project, and affiliates of Starwood Energy Group have committed 100 percent of the cash equity. Affiliates of Citi, Morgan Stanley and MUFG are also providing a non-recourse construction debt facility (including a letters of credit facility) totaling approximately \$207 million. Affiliates of MUFG will act as Administrative Agent, Collateral Agent, and Depositary Bank.

"We are pleased to have assembled a team of very experienced partners for this project," said Himanshu Saxena, managing director of Starwood Energy Group. "We remain committed to this sector as we continue to look for new investment opportunities. Continued Federal support for wind projects is a key enabler for such investments as the nation transitions to a greener economy."

"This is an attractive project and consistent with the successful value-add investment strategy employed by Starwood Energy Group for the last decade," added Bradford Nordholm, CEO & managing director of Starwood Energy Group.

An investment affiliate of Starwood Energy Group acquired Stephens Ranch in August 2013 from Mesa Power, an entity owned by T. Boone Pickens.

"MUFG is delighted to finance Starwood's growth in this important sector, where we continue to dedicate significant capital and expertise," said Jon Lindenberg, managing director and head of project finance for the Americas at MUFG.

"We are pleased to collaborate with Starwood Energy Group ... and are proud to be part of a strong project that will provide clean, competitively priced power to the state of Texas for many years to come. This transaction exemplifies our strategic objective to be the leading financial solutions provider for the renewable energy industry," said Lance Markowitz, managing director of leasing & merchant banking at MUFG.



# CHOKECHERRY AND SIERRA MADRE WIND ENERGY PROJECT

## Carbon County, Wyoming

As the U.S. wind energy industry continues to champion the cause of carbon reduction in energy generation, the largest proposed wind farm in the country — ironically to be situated in a community named Carbon — is pushing forward through the development process.

The Chokecherry and Sierra Madre Wind Energy Project, located just south of the cities of Sinclair and Rawlins in Carbon County, Wyoming, is expected to be comprised of up to 1,000 wind turbines, amassing a total nameplate capacity of 3,000 MW.

The project, first proposed in 2006, is being developed by Power Company of Wyoming, LLC, a wholly owned affiliate of The

Anschutz Corporation.

The wind project will be constructed in two phases on 320,000 acres of land, ownership of which is split equally between the federal government and private parties.

Upon completion, the Chokecherry and Sierra Madre project will generate enough electricity to power 1,000,000 average homes, and will effectively reduce carbon emissions an estimated 7 million to 11 million tons annually.

The fact that the project is being built to a large degree on federal lands will make a significant contribution toward achieving the goal of 10,000 MW of renewable energy generation on federal land by 2015, as outlined in the 2005 Energy Policy Act.

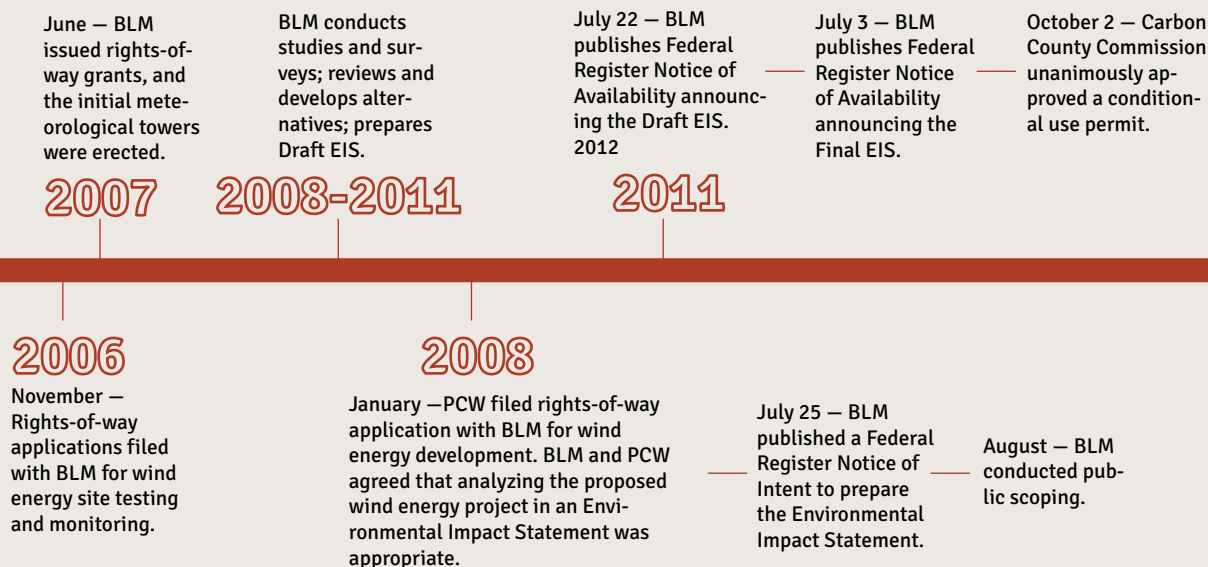
As many as 1,000 jobs are expected to be created during the project's construction phase. When complete, the project will employ 114 permanent workers in operations and maintenance functions.

The Chokecherry and Sierra Madre project is expected to result in \$300 million in property tax revenue in the first 20 years of operation, as well as \$232 million in sales tax revenue and \$150 million in Wind Electricity Tax, paid to the State of Wyoming.

Eight years into its development, the project is currently in the process of completing regulatory reviews and permitting prior to the start of construction.

"There are more complexities

## PROJECT TIMELINE



and costs related to permitting a project on federal land than on private land, and it typically takes more time,” said Kara Choquette, communications director for Power Company of Wyoming, regarding the development timeline of the project.

“The project has received its key Carbon County permit, its key State of Wyoming environmental and siting permit, and a Record of Decision from the BLM/Department of the Interior approving the site for wind energy development subject to a second-level review of the site-specific plans of development,” Choquette said. “That second-level review is anticipated to be completed by BLM by the end of 2014.”

Power Company of Wyoming estimates the total project cost at \$5 billion. The company has spent more than \$45 million thus far in the early development stages of siting and permitting.

Public support on all levels, from national to local, has been positive about the project, Choquette said. In fact, during a two-day permitting hearing in August, no one commented in opposition of the project.

For more information on the Chokecherry and Sierra Madre Wind Energy Project, visit the Power Company of Wyoming’s website at [www.powercompanyofwyoming.com](http://www.powercompanyofwyoming.com). ↗

## BY THE NUMBERS

**Location:** Carbon County, Wyoming

**Capacity:** 3,000 MW; up to 1,000 turbines

**Developer:** Power Company of Wyoming, LLC, a wholly owned affiliate of The Anschutz Corporation

**Land area:** Apprx. 320,000 acres

**Land ownership:** Alternating “checkerboard” of private parties and federal lands (approximately 50/50 split)

**Cost:** \$5 billion (est.)

**Jobs:** Est. 1,000 during construction phases; 114 permanent O&M

**Tax revenue:** Est. \$300 million property taxes in first 20 years; Est. \$232 million in sales taxes (more than half of which is expected to stay in-county); Est. \$150 million Wind Electricity Tax to the State of Wyoming

**Greenhouse gas reduction:** Est. 7 million to 11 million annually

— Source: Power Company of Wyoming LLC

October 9 — Interior Secretary Ken Salazar signs Record of Decision, authorizing the BLM to proceed with site-specific environmental analysis. BLM publishes Federal Register Notice of Availability the following week.

September — BLM conducts public scoping for Site-Specific Environmental Assessment 1, addressing the Phase 1 Haul Road and Facilities, West Sinclair Rail Facility and Road Rock Quarry.

December — BLM conducts public scoping for Site-Specific Environmental Assessment 2, addressing the Phase 1 Wind Turbine Development of 500 turbines.

December 4 — U.S. Fish and Wildlife Service publishes a Notice of Intent to prepare an EIS for the Phase I eagle permit application and conducted public scoping.

2011

2013

2014

July 15 — Carbon County Commission unanimously approves a conditional use permit extension.

August 6 — State of Wyoming Industrial Siting Council unanimously approves a permit to construct and operate the wind project.

August 11 — BLM publishes the final Site-Specific EA1 for infrastructure components.

BLM anticipated to publish the final Site-Specific EA2 for Phase I wind turbines.

U.S. Fish and Wildlife Service anticipated to publish their Draft EIS.

— Source: Power Company of Wyoming

## Rob Morgan

Chief Development Officer  
RES Americas



(303) 439-4200



[www.res-americas.com](http://www.res-americas.com)



[info@res-americas.com](mailto:info@res-americas.com)



RESamericas



@RES\_Americas



res-americas

### Could you tell us a little about the history of RES Americas?

RES Americas has been active in North America since 1997, with a renewable energy and storage construction portfolio of over 7,000 MW in operation. Roughly half of that portfolio has been developed by RES Americas with the other half built for third parties. RES Americas is a subsidiary of RES Ltd., founded in 1982 and headquartered in the UK.

### What services and solutions does RES Americas offer to the wind energy industry?

RES Americas has a robust suite of in-house expertise and services that we offer to the wind energy industry, including resource assessment and early project development support, permitting/interconnection and late development support, engineering, procurement and construction, and operations. RES Americas is distinguished by our dedicated staff of professionals throughout the value chain.

### What types of clients does the company serve? Could you briefly describe what you do for those types of clients?

RES Americas has a diverse client base. We have historically developed and constructed projects with an eye toward third-party ownership where the power production is contracted under a PPA with a utility counterparty. We have also constructed projects developed by third parties and

owned long term by those third parties. More recently, we are constructing projects for ownership directly by a utility, and we are supplying power under PPA to non-traditional buyers — companies with a nationwide footprint that are managing their carbon footprint.

### RES Americas places a strong emphasis on sustainability. Can you go into a little detail about how that factors in to the company's operations?

RES Americas is a value-based organization and sustainability is a core value of the company. We are working on diverting an increasing percentage of our waste stream to recycling, composting, and re-use. Also, we encourage a reduced environmental impact by all our people through sustainable work/life choices such as participating in Bike to Work Day and the Green Car Incentive Program. Going beyond our company, we are working with our supply chain to create demand for sustainable products and practices.

### Walk our readers through the process RES Americas takes in wind project development.

Project development is a process that requires patience and problem solving. From years of experience, RES Americas has broken that process down into the following steps:

- Identify areas with promising wind or solar resources, compatible land uses, and access to transmission lines



- Identify and map prospective sites
- Establish and maintain strong relationships with landowners and negotiate wind or solar measurement agreements and/or land leases
- Establish and maintain strong relationships with local stakeholders, including local government, environmental groups, and community groups among others
- Commence project planning, design and engineering using RES Americas' engineering team
- Conduct environmental assessments and studies
- Begin the permitting process
- Discuss and negotiate offtake agreements with local utilities
- Secure interconnection and transmission agreements
- Secure financing for project construction
- Construct the project using RES Americas' construction team
- Commence operations



**How is that process unique?  
What sets it apart from competitors?**

Our knowledge of development, engineering, and construction is different from our competitors, who typically are active on only one part of the value chain. Our presence across the value chain allows us to deeply understand project risks and mitigate those risks for the project owner.

**RES is built on a long legacy of construction services. How does that translate to wind farm projects and benefit wind customers?**

Having an extensive knowledge of the construction industry and risks involved in construction allows us to manage and mitigate those risks for the benefit of project owners and to the ultimate benefit of the entire

industry. RES Americas has a very high regard for safety on its job sites and in our everyday work. In fact [at time of print], we have over a million man-hours without a recordable safety incident throughout the company. Construction can be a demanding and risky business, but with the proper training and attention to site-specific risks, we can make it a safe and fulfilling business.

**How does the company view the future of wind energy, both near and long-term?**

We are extremely busy in 2014 & 2015, with over 1 GW of wind, solar and storage projects in construction or planned. We are bullish long term as the cost of renewable resources hits grid parity without any price volatility that is inherent in the fossil fuel markets. Across the spectrum of

wind, solar and storage, manufacturers are making efficiency and cost improvements - all of which show up in an improved, lower price of electricity paid by consumers.

**What other industries does RES Americas serve? With regard to energy projects, are there any efforts toward cogeneration plants, etc.?**

RES Americas is pursuing energy projects that have a renewable fuel supply (or are non-polluting such as storage and transmission) so to the extent we go beyond wind, solar, storage and transmission, it will involve some other renewable fuel stream such as biogas. Cogeneration is a very efficient process that captures waste heat for beneficial use, so renewable cogeneration would be an interesting combination. ✎

# SEEKING OPPORTUNITY?

Scan *Wind Systems* website to enjoy a host of features, including:

- Our new jobs listing, for employers and jobs seekers alike
- Events calendar to keep you informed
- A searchable articles archive, downloadable individually
- View the digital magazine, or download entire issues
- Vendor listings, along with our annual Buyer's Guide
- Company profiles and Q&As
- Connect to the wind industry through social media
- Wind industry news from about the world

Visit [windsystemsmag.com](http://windsystemsmag.com) today and get connected!