


# SMART Wind Consortium Directory

## OEM and Wind Turbine Information

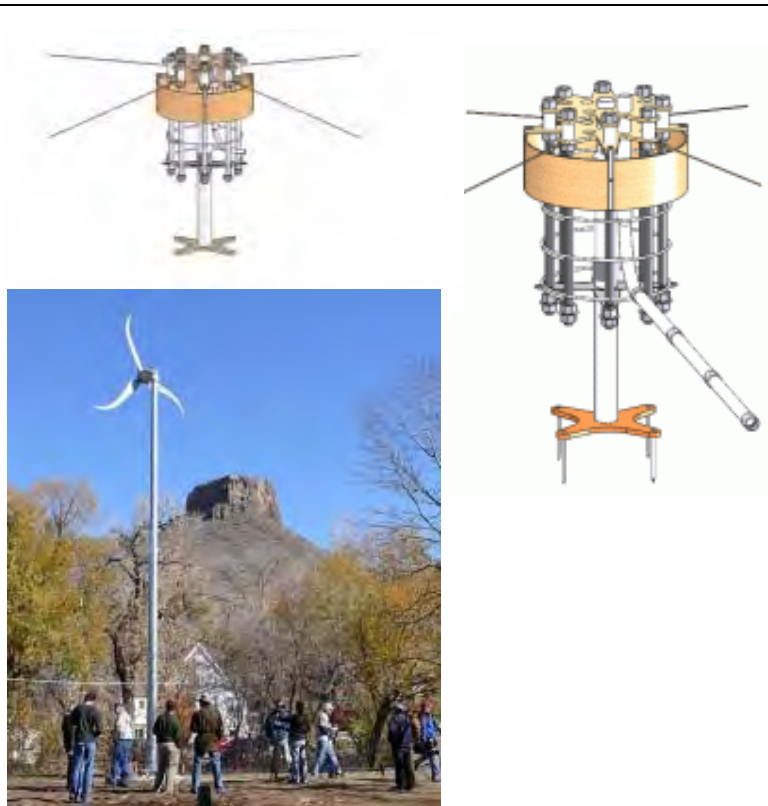
Manufacturer, Products, Company Info, Product Photo	Exploded Diagram and Manufacturing Photo(s)
<p><b>Aeronautica Windpower</b>  Turbine: AW750 (47-m and 54-m rotors), Danish (Norwin) design  In business 7 years, started with refurbishing, first 750 kW in 2011</p>  <p><a href="http://www.aeronauticawind.com">www.aeronauticawind.com</a></p> 	 
<p><b>AllEarth Renewables</b>  Product: AllEarth dual-axis tracker  In business since 2005, originally developed 2.5-kW direct-drive residential wind turbine before switching gears to design and manufacture grid-tied solar PV tracking systems</p>  <p><a href="http://www.allearthrenewables.com">www.allearthrenewables.com</a></p>	

### AnemErgonics

Products: SMarT Foundations™ and SMarT Towers™ from 8 m to 20 m for wind turbines up to 5 kW  
Commercial sales began in 2013 after considerable laboratory and field testing



[www.anemergonics.com](http://www.anemergonics.com)

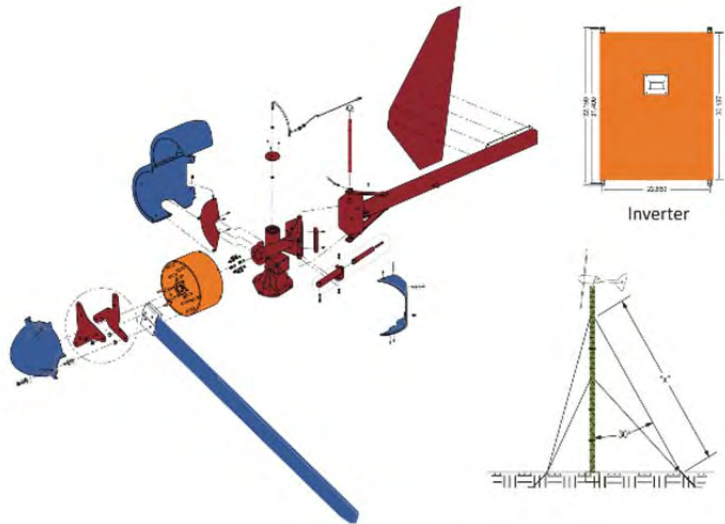


### Bergey Windpower Company

Turbines: Excel 6 and 10, both AWEA certified by SWCC  
In business 37 years, first turbine in 1980



[www.bergey.com](http://www.bergey.com)



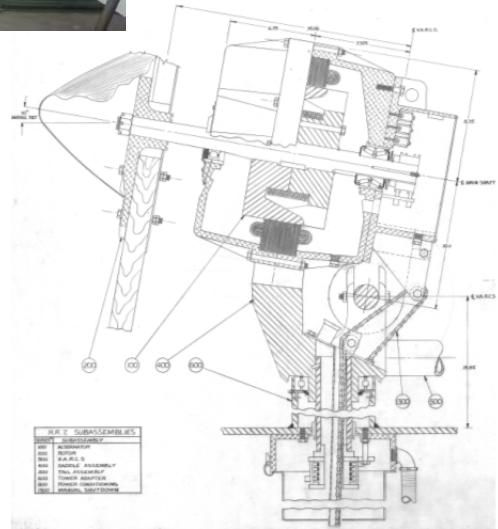


### Black Island Wind Turbines

Turbine: HR3, tested at AEI facility in Canyon, TX. Originated from 1978 U.S. DOE contract to develop a high-reliability small wind turbine  
Founded 2011, first turbine in 2013



[www.blackislandwindturbines.com](http://www.blackislandwindturbines.com)



### Dakota Turbines

Turbine: 30-kW DT30, under test at High Plains Small Wind Test Center for AWEA certification by SWCC  
In business 8 years, first turbine in 2011



[www.dakotaturbines.net](http://www.dakotaturbines.net)

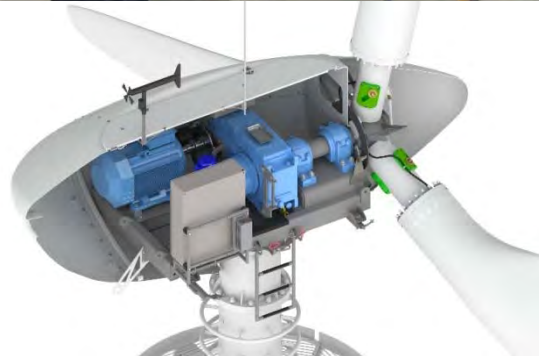
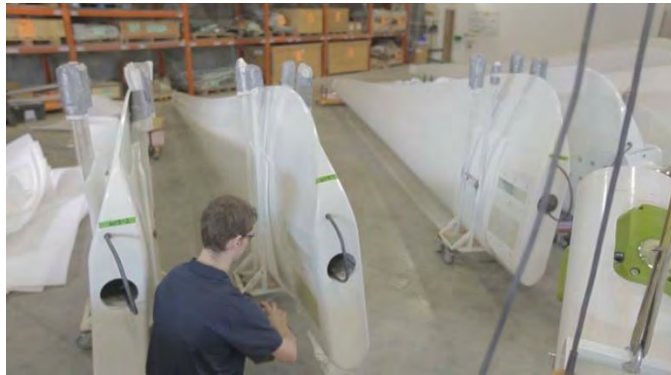


**Endurance Wind Power**

Turbine: E-3120, granted SWCC  
Performance Certification  
In business 7 years, first E-series in  
2009



[www.endurancewindpower.com](http://www.endurancewindpower.com)

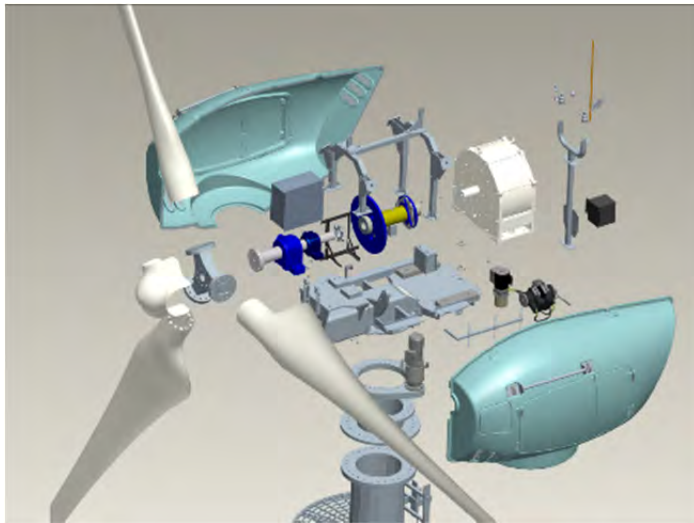
**Eocycle Technologies**

Turbine: EO CYCLE 25, pursuing AWEA  
and BWEA certifications with Intertek  
In business 13 years, first turbine in  
2010



**EOCYCLE**  
TECHNOLOGIES

[www.eocycle.com](http://www.eocycle.com)

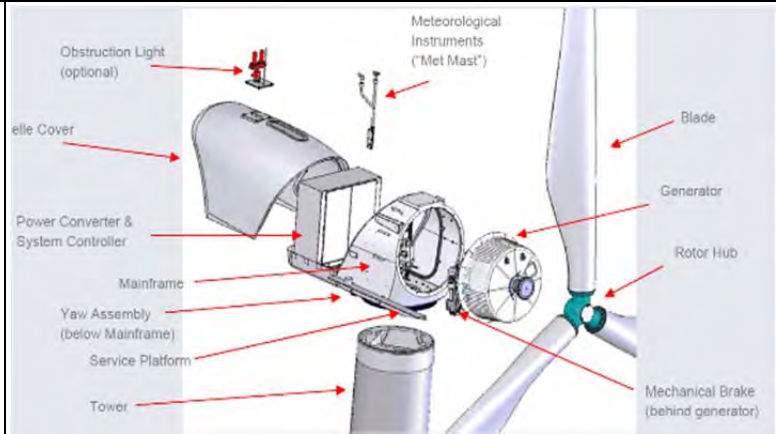
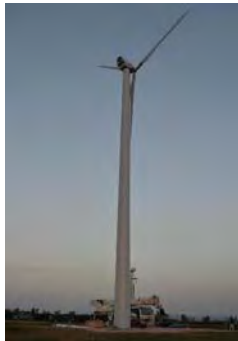




## Northern Power Systems

Turbine: NPS 100C

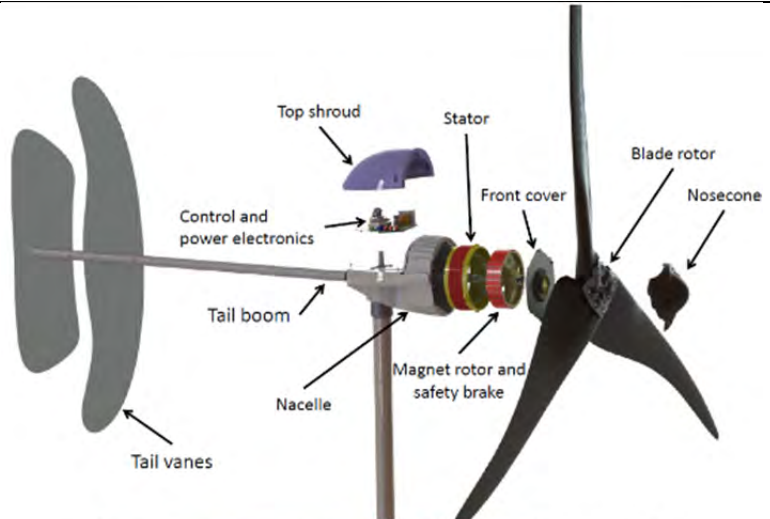
In business 40 years, first turbine in 1978



## Pika Energy

Turbine: Pika T701, under test at High Plains Small Wind Test Center for AWEA certification by SWCC

In business 4 years, first turbine in 2013



### Primus Windpower

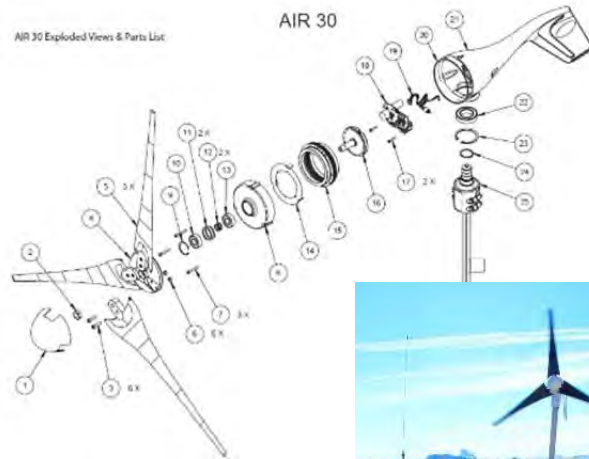
Turbines: Air 30, 40, Breeze, X  
Typically paired with PV, hybrid  
In business 2 years, first turbine in  
1995; part of larger Primus Aerospace

**primuswindpower**

[www.primuswindpower.com](http://www.primuswindpower.com)



AIR 30 Exploded Views & Parts List



### Ventura Wind

Turbine: VT10  
In business 3 years, first turbine in  
2007

**VENTURA WIND**

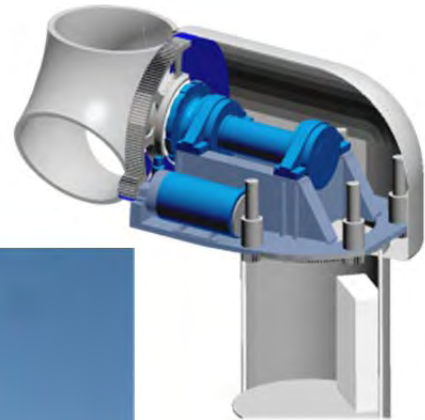
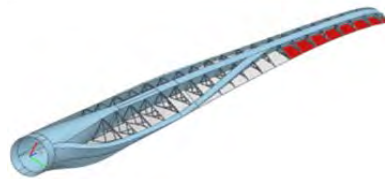
[www.venterawind.com](http://www.venterawind.com)



### Wetzel Engineering

Products: Model W-35 blade, Model W-83 blade

Has offered state-of-the-art engineering services since 2001



### Xzeres Wind

Turbines: 442SR (under test in Texas for AWEA certification with SWCC), Skystream (SWCC certified)

In business 5 years, first turbine in 2010



[www.xzeres.com](http://www.xzeres.com)





## SMART Wind Consortium OEM Steering Group

**Aeronautica Windpower, LLC | Plymouth, MA | [www.aeronauticawind.com](http://www.aeronauticawind.com)**



**Aeronautica Windpower** is a sales, marketing, manufacturing, and O&M service company that builds and markets mid-scale commercial and industrial (225- to 750-kW) wind turbines primarily for behind-the-meter and net-metered applications.

**Brian Kuhn** is Aeronautica's founder and a principal member of a number of renewable energy companies. Mr. Kuhn offers the perspective of more than 30 years of project, product, and service development in the fields of wind, solar, heat recovery, real estate development and permitting, and general marketing.



**AllEarth Renewables | Williston, VT | [www.allearthrenewables.com](http://www.allearthrenewables.com)**



**AllEarth Renewables** believes that having experience does not mean you should not look for new answers. It has built two 25-acre, 382-tracker, 2.1-MW solar farms in its own backyard in order to fine-tune every aspect of its product, services, and delivery for its customers.

**David Blittersdorf** founded NRG Systems in 1982, and over the next 22 years he developed the company into a global leader in wind measurement technology. He stepped down as CEO of NRG Systems in 2004 to launch his second company, AllEarth Renewables, which originally developed a 2.5-kW direct-drive residential wind turbine before switching gears to design and manufacture grid-tied solar PV tracking systems.



**AnemErgonics | Arvada, CO | [www.anemergonics.com](http://www.anemergonics.com)**



**AnemErgonics** strives to keep its products simple and believes modular components—specialized, mass-produced, and interchangeable—improve flexibility and lower costs. AnemErgonics uses the term SMarT (Simple Modular Technology) to describe its products, including SMarT Foundations™ and SMarT Towers™.

**Dr. Paul Migliore** has 35 years of experience in virtually all aspects of wind energy, including research and teaching in academia, wind farm development, engineering design, manufacturing, consulting, and project management. Since retiring from NREL in 2005, he has consulted for numerous wind turbine manufacturers, primarily in the areas of aerodynamics, aeroacoustics, foundations, and tower design. As a consultant to NREL, he assisted with the implementation of computational aeroacoustics projects, wind tunnel aerodynamic and aeroacoustic tests, and wind tunnel tests of low-noise blade tips for small wind turbines.



**Bergey Windpower Co. | Norman, OK | [www.bergey.com](http://www.bergey.com)**



**Bergey Windpower is the oldest manufacturer of residential-size wind turbines in the world.** Thirty years ago, Bergey pioneered the radically simple "Bergey design" that has proven to provide the best reliability, performance, service life, and value of all of the hundreds of competitive products that have come and gone in that time. With only three moving parts and no scheduled maintenance necessary, the Bergey 10-kW has compiled a service record that no other wind turbine can match. Bergey backs it up with the longest warranty in the industry.



**Mike Bergey** is a mechanical engineer and an internationally recognized expert in the field of small wind turbines, distributed generation, and rural electrification. A co-founder of Bergey Windpower and president since 1987, he holds one patent in the wind energy field. He served two terms as president of DWEA, twice served as president of AWEA, and served on the AWEA Board of Directors from 1981 to 2007. He is a past chairman of the U.S. Export Council for Renewable Energy, member of the U.S. Department of Commerce Environmental Technology Trade Advisory Committee, and a past president of the Oklahoma Renewable Energy Council.



## Black Island Wind Turbines | Hadley, MA | [www.blackislandwindturbines.com](http://www.blackislandwindturbines.com)

Black Island, Antarctica is one of the harshest wind turbine installations in the world with routine Category 5 hurricane winds, top speeds reaching 200 mph, temperatures falling to minus 70 degrees F, marine environments, and super-critical loads. One wind turbine prevails: the **HR3**, a high-reliability, 3-kW wind turbine that **Black Island Wind Turbines** will soon offer for commercial sales to satisfy the most difficult site and customer demands around the world.



**Pat Quinlan** is the CEO of Black Island Wind Turbines, the former associate director of the U-Massachusetts Wind Energy Center and a former Senior Analyst at NREL. Mr. Quinlan worked for Paul MacCready, world-class inventor and designer, and served as a Science Fellow in Congress for the Chair of the House Science Committee and Technology Fellow in the White House for the President's Science Advisor. He holds an M.Sc., Mechanical Engineering; is a U-Wisconsin Solar Energy Lab Professional Engineer; and is licensed in California.



**Bill Stein** is Black Island's founder and CTO, building wind turbines that can survive winds up to 197 mph and -57° F. Black Island has evolved from principally refurbishment of legacy equipment to complete new systems in 2013, resulting in growing sales to U.S. agencies, military, and private commercial customers. Mr. Stein continues his work in developing cutting-edge solutions to technical problems as well as managing and mentoring enthusiastic younger developing engineers.

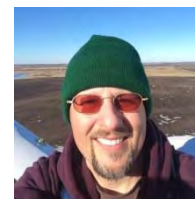
## Dakota Turbines | Cooperstown, ND | [dakotaturbines.net](http://dakotaturbines.net)



Dakota Turbines Inc., based in Cooperstown, North Dakota, builds compact, efficient, rugged wind turbines made almost entirely from parts manufactured in the Upper Midwest. With capital from parent company Posilock Puller Inc. and the ND Industrial Commission, Dakota

Turbines began developing design concepts for its turbines in 2006 and completed its first commercial installation in 2011. The company has worked to develop innovative technologies to enhance production from wind turbines. Its unique configuration of ironless coils and magnets affixed to the turbine's rotor eliminates cogging and enables generation at very low wind speeds. Dakota Turbines has developed a highly efficient blade design and a tailored inverter. Its design also includes fail-safe coil springs on each blade shaft that can quickly bring the turbine to a gentle stop in the event of any electrical or mechanical disruptions. The company has acquired and is working to acquire several patents for its technologies.

**Cris Somerville** has 25 years of experience working with and developing hydraulic, pneumatic, and mechanical systems. He is credited with 6 patents, two of which are for Dakota Turbines, and an additional 2 patents pending also for Dakota Turbines. He has extensive knowledge and experience with 3-D modeling and design software. Taking on difficult projects and providing innovative solutions is something that Mr. Somerville takes great pride in.



## Endurance Wind Power | Surrey, BC, Canada | [endurancewindpower.com](http://endurancewindpower.com)



**Endurance Wind Power** manufactures advanced wind turbines designed for distributed wind power applications. Endurance's line of modern, induction-based wind turbines brings efficient, reliable, safe, and quiet renewable energy to homeowners, businesses, and institutions across Europe, North America, and an expanding global market.



**Dr. David Laino** was a co-founder of Windward Engineering in 1999 and a lead designer on the original Endurance S-Series turbine. He previously worked at NREL, where he developed wind turbine computer modeling capabilities to analyze innovative designs and evaluate proposed safety standards. He also analyzed and compared test and simulation data in validation studies. He is an active member of DWEA and Co-Administrator of the U.S. Technical Advisory Group to IEC Technical Committee for Wind Turbine Standards.

**Charles Newcomb** serves as the Director of Technical Strategy for Endurance to align the company's technical solutions with business strategies. He brings more than 15 years of experience in nearly all aspects of the wind industry, from sales and project development to procurement and implementation strategies. He works with Endurance's technical team on the company's future product roadmap and business models. Prior to joining Endurance, Mr. Newcomb held several senior engineering roles at NREL.



## Eocycle Technologies | Gaspé, Québec, Canada | [eocycle.com](http://eocycle.com)



**Eocycle Technologies** Inc. develops, manufactures, and commercializes worldwide the Eocycle 25, a state-of-the-art, 25-kW direct-drive wind turbine for distributed wind energy applications. Capitalizing on more than 12 years of internal R&D and prototyping, Eocycle Technologies stands out from its peers by being an integrated technology and manufacturing company.

**Bouaziz Ait-Driss** is the Chief Innovation Officer at Eocycle Technologies Inc. He holds a Masters in Renewable Energies and has more than 25 years of experience in the development of energy systems in Africa, Europe, and North America. His experience in the energy sector stems from designing, implementing, and operating a multitude of wind and solar power projects and mandates. Before he joined Eocycle, he led teams of engineers at GL Garrad Hassan and research and development organizations, including academia. He has managed projects totaling more than 20 GW of planned capacity. At Eocycle, he leads the development and implementation of cutting-edge energy conversion solutions.



## Northern Power Systems | Barre, VT | [www.northernpower.com](http://www.northernpower.com)



**Northern Power Systems** has been delivering innovative energy solutions in a changing landscape for more than 40 years. Around the globe, Northern's installed base of permanent magnet direct drive wind turbines and grid-friendly power technology components have logged millions of kilowatt-hours of operation, demonstrating the company's commitment to performance and reliability.

**Diego Tebaldi** is Northern's Global Head of Business Development & Product Management. He is a focused and driven leader with 20+ years of international experience in corporate divisions as well as start-ups, leading and growing in complex markets worldwide and running field operations with a diverse global footprint.



**Chris McKay** has more than 20 years of experience in the energy industry with specialties in product development, product management, and program management. He currently leads Northern's Product Life-Cycle Management team, driving the development and commercialization of new products from wind turbine and power electronics product platforms using stage-gate methodology.



## Pika Energy | Westbrook, ME | [www.pika-energy.com](http://www.pika-energy.com)



**Pika Energy** manufactures high-efficiency, bi-directional inverters and charge controllers, small wind turbines, and substring solar optimizers. All Pika products are powered by the REbus™ DC nanogrid and provide grid-optional clean power that enables buildings to collect, store, and self-consume energy from solar and wind sources. Pika believes that renewable energy will power the future, bringing that future closer for homeowners and businesses. Pika's vision is the result of years of experience designing, building, and using renewable energy. Pika is committed to making reliable, high-performance products that customers will be proud to use and recommend.

**Ben Polito** has been building clean energy technology since his days on an island farm in Maine, beyond the reach of grid power. Mr. Polito was lead mechanical engineer for the groundbreaking Skystream wind turbine. Prior to launching Pika Energy, he built the East Coast office of GreenMountain Engineering, a design consulting firm serving clean technology startups, and served on the founding team of 1366 Technologies, where he developed texturing methods for high-efficiency silicon solar cells. He holds patents and patents-pending on technology ranging from implantable medical devices to solar cells. Mr. Polito earned a mechanical engineering degree from MIT, where he developed 3D printers, built autonomous submarines, and worked on Eink, the display technology of the Amazon Kindle.



**Bill Hetzel**, Pika's Director of Operations, started his career as a management consultant for Oliver Wyman, then moved to Merck & Co., where he engineered global chemical plant capacity for active pharmaceutical ingredients. For the next 13 years, Mr. Hetzel worked at Tom's of Maine as leader of Procurement, Supply Chain, and then as Plant Manager, responsible for all operations of the Sanford, Maine facility. Mr. Hetzel holds a BS in chemistry from Yale, as well as an MS in chemical engineering and an MS in management from MIT.

## Primus Wind Power | Lakewood, CO | [www.primuswindpower.com](http://www.primuswindpower.com)



**Primus Wind Power** is a global leader of off-grid, portable small wind turbines and maker of the Air Breeze Turbine, Air 30 Turbine, and Air 40 Turbine with more than 150,000 units installed since 1995 and installations in more than 100 countries and on seven continents. Purchased from Southwest Windpower in January 2013, the AIR product line continues to achieve nearly 100% reliability, resulting in the lowest warranty rate in the market. Primus continues its global reach with sales offices in Arizona, Colorado, and Germany. Authorized service dealers are also located in the U.S., Canada, Brazil, U.K., Netherlands, Australia, and New Zealand.

Primus Wind Power has common ownership and shared facilities, equipment, and management with Primus Aerospace. Established in 1989, the company is a privately held leading provider of high-precision, high-complexity machined components, kits, and subassemblies for the aerospace, defense, and space industries. Primus Aerospace serves aerospace customers in North America, Europe, and Asia with diversified and complex machined products, assembly services, and engineering support. Customers include industry leaders such as Lockheed Martin, Parker Hannifin, United Technology Corporation, Eaton Corporation, and the U.S. Department of Defense. The company focuses on core principles of increased automation, unique capability, and extraordinary flexibility to customers.

**Ken Kotalik**, Director of North American Sales, Primus Wind Power, works out of the Primus Flagstaff, Arizona office. Mr. Kotalik has a bachelor's degree in Science from Northern Arizona University. He has worked in and around the renewable energy field for 15 years in various roles including technical sales, sales engineering, installation, and training. Prior to his work with Primus Wind Power, he was a sales manager and training facilitator for Southwest Windpower. He built his own passive and active solar straw bale house in Flagstaff, Arizona.





## Ventera Wind | Duluth, MN | [www.venterawind.com](http://www.venterawind.com)



**Ventera Energy Corporation** was formed in January 2004 by designer and inventor Elliott Bayly, a Duluth native. After 3 years of design, prototyping, and field testing, Ventera Energy Corp. was proud to present to the world its new 10-kW VT10 Wind Turbine in 2007. Ventera Energy Corp. ceased operations in July 2011, and Ohio-based North Coast Wind & Power, LLC, purchased the technology. Ventera Wind, Inc. was formed in September 2011 with Dr. Bayly as part of the new team. The new Ventera Wind team set out to continue providing high quality for consumers, improving the turbine over the years with top-quality parts to minimize maintenance, eliminate rusting issues, and improve performance.

**Thomas A. Williams, Jr.** is the CEO of Ventera Wind, Inc. and has served as the managing director for North Coast Wind & Power, LLC for 9 years, developing small to mid-size utility-grade wind generation facilities for publicly owned power providers and commercial and institutional distributed wind installations. Mr. Williams has also acted as a renewable energy finance consultant.



## Wetzel Engineering, Inc. | Pflugerville, TX | [www.wetzelengineering.com](http://www.wetzelengineering.com)



**Wetzel Engineering, Inc.**, headquartered in Pflugerville, Texas, has been offering state-of-the-art engineering services since 2001 to manufacturers in wind energy, aviation, and heavy industry. The company maintains a network of associated consultants with internationally recognized expertise in aerospace materials and manufacturing, gas turbine engines, advanced controls systems, aircraft design, mechanical systems engineering, and electrical systems engineering.

**Dr. Kyle Wetzel** has engineered state-of-the-art energy, aerospace, and defense systems since 1993 in a variety of capacities, including as a consultant and researcher through two of his own companies, as Technical Manager of New Product Development at Enron Wind Energy (now part of GE Energy), as Executive VP of Aerotech Engineering & Research Corp., and as a university researcher. He has served as an adjunct professor in the Department of Aerospace Engineering at the University of Kansas since 2005. He has served as Principal Investigator and/or manager on 14 government-funded R&D contracts worth more than \$30 million and has consulted to more than 60 private-sector clients. Dr. Wetzel holds an M.S. in Aeronautical and Astronautical Engineering from the University of Illinois at Urbana-Champaign and a Ph.D. in Aerospace Engineering from the University of Kansas.



## XZERES Corp. | Wilsonville, OR | [www.xzeres.com](http://www.xzeres.com)



**XZERES Wind** designs, manufactures, and distributes high-quality distributed small wind turbines (2.5 kW – 10 kW). XZERES grid-connected and off-grid wind turbine systems are utilized for electrical power generation for applications and markets such as residential; micro-grid-based rural electrification; agricultural; small business; rural electric utility systems; as well as other private, corporate infrastructure, and government applications.

**Jay Yeager**, Senior Applications Engineer at XZERES Corp., is a wind industry veteran with extensive background and experience in small wind turbine technologies, manufacturing, field testing, wind turbine certification, product development and design, project management, and distributed wind systems development around the world. He has focused on village electrification in underserved and remote locations with full-cycle involvement from resource assessment to siting to modeling and system design, funding, deployment, installation, and commissioning.



## SMART Wind Consortium Subgroup Leads

### Mechanical Systems

**Gary Harcourt – Founder, manager and co-owner of Great Rock Windpower** is on a mission to promote distributed wind energy through the installation and maintenance of safe and cost-effective small wind systems. Along with his partners, he installed and maintains a small fleet of turbines in Massachusetts. Mr. Harcourt also travels for Endurance Wind Power as a commissioning engineer, training installers and technicians throughout North America and Europe. Serving on the North American Board of Certified Energy Practitioners (NABCEP) small wind exam committee, Mr. Harcourt helped craft the first installer certification exam and was certified as a NABCEP Level III small wind installer. He has served on the DWEA Planning and Zoning committee and is a board member for the Small Wind Certification Council. He received the 2014 installer of the year award at the small wind conference in Wisconsin. Mr. Harcourt is also a customer and turbine owner, operating a 5-kW turbine at his woodshop on Martha's Vineyard in Massachusetts.



**Dr. Patrick Lemieux – Associate Professor of Mechanical Engineering, California Polytechnic State University** is a Bently Professor who has been involved with wind power research for more than 20 years. Over the past 6 years, he developed Cal Poly's Wind Power Research Facility and presented progress made at national AWEA conferences as well as in a federal congressional panel on energy issues. The facility's goal is to prepare the next generation of wind power mechanical engineers by studying and developing systems according to a design philosophy relevant to utility-scale wind turbines but implemented to small machines suitable for university research and teaching. His prime area of research focuses on the aerodynamic design and control of wind turbine blades; his interests include the turbine system assembly and structure as a whole. Dr. Lemieux is also concerned with global energy sustainability and climate change issues.



**Robert W. Preus, PE – Technical Lead for Distributed Wind at NREL** is the founder of Advanced Renewable Technology, which provided training, engineering,

and certification support to small wind manufacturers. He has 27 years of wind energy experience. Mr. Preus has extensive experience in wind energy systems design and led the successful development of 2.5-kW to 300-kW wind generators. He has trained many dealers in the installation of distributed wind systems and served on the committees that developed NABCEP installer certification task list, applicant experience requirements, and the exam. He was the co-chair of the group that wrote a section for small wind in the National Electrical Code. In 2010, Mr. Preus received the Small Wind Advocate award from the U.S. DOE's Wind Powering America initiative.



### Electrical Systems

**Dr. Ruth Douglas Miller – Associate Professor of Electrical and Computer Engineering at Kansas State University** has directed K-State's Wind Application Center, which runs the state's Wind for Schools project, since 2007. In the program, K-12 schools receive small wind turbines to educate students about wind energy and interest them in careers in the field. The project has installed more than 20 turbines. The Wind Application Center also runs the High Plains Small Wind Test Center in partnership with Colby Community College; under a grant from DOE/NREL, the center is testing two small turbines for certification under the AWEA Small Wind Standard. Dr. Douglas Miller is a member of IEEE, Tau Beta Pi, and Eta Kappa Nu, and has more than 25 academic publications. Dr. Douglas Miller earned her doctorate and master's at the University of Rochester and her bachelor's at Lafayette College.

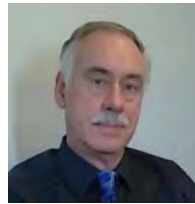


**Dr. Eduard Muljadi – NREL** received his Ph. D. in Electrical Engineering from the University of Wisconsin, Madison. From 1988 to 1992, he taught at California State University in Fresno, and he joined NREL in June 1992. His current research interests are in the fields of electric machines, power electronics, and power systems in general with emphasis on renewable energy applications. He is a member of Eta Kappa Nu and Sigma Xi and is a Fellow of the IEEE. He is involved in the activities of the IEEE Industry Application Society, Power



Electronics Society, and Power and Energy Society. He is an editor of the IEEE Transactions on Energy Conversion and holds two patents in power conversion for renewable energy.

**Dr. Robert Wills – Intergrid** has been involved in the U.S. solar industry for 32 years and wind for 15 years. He has designed inverters ranging in power from 250 W to 250 kW and was co-designer of the inverter for the Skystream wind turbine. Dr. Wills currently represents the wind community on the U.S. National Electrical Code (Article 694) and also sits on a number of related UL and IEEE standards committees. He is chair of the NEC task group that is writing a new article on microgrids. Dr. Wills is a consulting engineer whose current clients include wind turbine, energy storage, and utility companies.



## Composites

**Dr. Pier Marzocca – Clarkson University** Dr. Pier Marzocca – Clarkson University / RMIT University has been a faculty member in the Mechanical and Aeronautical Engineering Department at Clarkson University since 2003. He is currently the Deputy Head of the School for Aerospace and Aviation at RMIT University. He received his doctorate in Aerospace Engineering from Politecnico di Torino, Italy, and worked as a Postdoctoral Researcher and Visiting Assistant Professor in Engineering Science and Mechanics at Virginia Tech before joining Clarkson in 2003 and RMIT University in 2015. Dr. Marzocca has been working in aerospace engineering since 1996 and specializes in multi-physics modeling and characterization of advanced materials and structures, with interactions among advanced structures and fluids, magnetic, electric, and thermal fields. He leads/co-leads several research projects with funding from government agencies, including National Science Foundation, U.S. Air Force Office of Scientific Research, U.S. Army Armament Research, Development and Engineering Center, DOE, EPA, NYSEDA, DST Group, Australian Defence Science Institute; private foundations, such as MDA and Syracuse CoE; and industries, including GE, Pratt & Whitney, and Intertek. He is an AIAA Associate



Fellow, Chair of SAE Unmanned Aircraft System Technical Committee, International Journal of Aeronautical and Space Sciences Deputy Editor, and Associate Editor of ASCE Journal of Aerospace Engineering and the Journal of Thermal Stresses.

**C.P. “Case” van Dam – Chair of Mechanical and Aerospace Engineering, University of California at Davis** heads the

California Wind Energy Collaborative, a partnership among industry, the University of California, and the California Energy Commission. Before joining UC Davis in 1985, Dr. van Dam was employed as a National Research Council post-doctoral researcher at the NASA Langley Research Center and as a research engineer at Vigyan Research Associates in Hampton, Virginia. His current research includes wind energy engineering, aerodynamic drag prediction and reduction, high-lift aerodynamics, and active control of aerodynamic loads. He has extensive experience in computational aerodynamics, wind-tunnel experimentation, and flight testing. He teaches industry short courses on aircraft aerodynamic performance and wind energy; has consulted for aircraft, wind energy, and sailing yacht manufacturers; and has served as a reviewer for government agencies and research organizations.



## Support Structures

**Roger Dixon – Owner of Skylands Renewable Energy,** energy vendors for the New Jersey Farm Bureau. Mr. Dixon has been involved with the evolution of wind electric for 38

years. He is a charter member of the New Jersey Small Wind Working Group (NJSWWG), chairing the NJSWWG Highlands Committee, Economics Committee, and the Small Wind Model Zoning Ordinance and Siting Committee. He has participated in the New Jersey Board of Public Utilities (NJ BPU) Renewable Energy committee meetings and sat on the NJ BPU Solar Alternative Compliance Payment/Alternative Compliance Payment Advisory Committee representing small wind developers. He is a founding DWEA member, serves as Board Secretary, and is past co-chair of the Permitting & Zoning and Installer Committees.





**Dr. Rick Damiani – Senior Engineer, NREL**, has been a consultant to the wind industry for the past 15 years. He focuses on aeroelastic modeling of turbines and structural design and analysis of blades and support structures. For NREL's National Wind Technology Center, Dr. Damiani supports various technical projects, from offshore wind to distributed wind. He holds a PhD in Aeronautical Engineering and is a Licensed Professional Engineer.

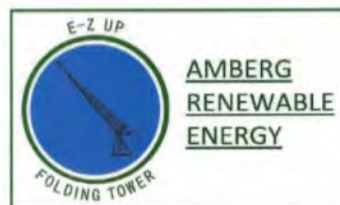
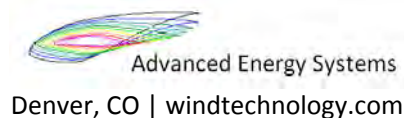


**Gunes Demirbas – G-Tower** has more than 10 years of engineering and project management experience

in the tower business, including wind towers (< 1.5 MW), electric transmission and distribution towers (< 600 kV), telecommunication towers, and lighting poles. Prior to starting G-Tower, he worked for tower manufacturers Valmont Industries, Falcon Steel, and Mitas Energy. He holds M.Sc. (Geotechnical) and B.Sc. degrees in Civil Engineering from Middle East Technical University. He received an MBA from the University of Alabama at Birmingham. He is a licensed professional engineer in Texas and Alabama.



## SMART Wind Consortium Collaborating Companies and Organizations



**BlueSkyWind**  
White Plains, NY  
blueskywind.com

**B**  
**BOISE STATE  
UNIVERSITY**  
Boise, ID | boisestate.edu

**CAL POLY**  
**WIND POWER**  
San Luis Obispo, CA  
www.calpoly.edu

**CASCADE COMMUNITY  
WIND COMPANY**  
Bellingham, WA  
cascadecommunitywind.com

**CAST, INC.**  
Cast Alloy Sales & Technologies, Inc.  
Randolph, OH | www.cast-inc.net

**cec energy**  
A Division of  
Cazenovia Equipment Company  
Cazenovia, NY | cec-energy.com

**cecet**  
Center for Evaluation of Clean Energy Technology  
Cortland, NY | www.cecet.com

*M Childress*  
Mary Childress, CPA  
Washington, DC

**Chinook Wind**  
Everson, WA | chinookwind.net

**Clarkson  
UNIVERSITY**  
Potsdam, NY | www.clarkson.edu

**COHN REZNICK**  
New York, NY | cohnreznick.com

**CO** **COLORADO**  
Energy Office  
Denver, CO  
www.colorado.gov/energyoffice

**Colorado State  
University**  
Wind Application Center  
Department of Mechanical Engineering  
Fort Collins, CO | colostate.edu

**DAKOTA  
TURBINES**  
Cooperstown, ND  
www.dakotaturbines.com

**DWEA**  
DISTRIBUTED WIND ENERGY ASSOCIATION  
Durango, CO | distributedwind.org

**eFormative  
options** LLC  
Vashon, WA  
eformativeoptions.com

**Energy  
Options**  
Palmdale, CA  
www.energyoptions-wind.com

**Energy Trust  
of Oregon**  
Portland, OR | energytrust.org

**Endurance  
wind power**  
we power the future  
Surrey, BC  
www.endurancewindpower.com

**EOCYCLE**  
TECHNOLOGIES  
Anjou, Quebec | eocycle.com

**EWT**  
Amersfoort, Netherlands  
www.ewtdirectwind.com

**EXTOL  
WIND**  
Cambridge, MA  
www.extolwind.com

**forENGics™**  
Engineering Forensics  
Temple, NH | forengics.com

**FRANK PHILLIPS COLLEGE**  
Borger, TX | www.fpctx.edu

**G-Tower**  
Houston, TX | www.g-tower.com

**GREAT ROCK WINDPOWER**  
SOMEBODYSGOTTA DO IT!  
Vineyard Haven, MA  
www.greatrockwindpower.com

**HARBEC**  
Technically Translating With Environmental Repercussions  
Ontario, NY | www.harbec.com





Greenville, PA  
www.elyriafoundry.com



Boulder, CO | homerenergy.com



Macomb, IL | www.iira.org



CENTER FOR  
RENEWABLE ENERGY  
*Illinois State University*

Normal, IL  
renewableenergy.illinoisstate.edu



Temple, NH | intergrid.org



Glen Burnie, MD | intertek.com



Harrisonburg, VA | jmu.edu



Sedro-Woolley, WA | janicki.com



Pipestone, MN | juhlenenergy.com



Manhattan, KS | www.k-state.edu



Manhattan, KS | wac.ece.ksu.edu



Random Lake, WI  
www.kettleviewre.com



Oakland, CA | kfwlaw.com



Denver, CO  
keystonetowersystems.com



Cavan, Ireland | kingspan.com



Portland, ME  
www.mainewindindustry.com



San Ramon, CA  
www.manexconsulting.com



Arlington, WA | midnitesolar.com



St. Paul, MN  
mn.gov/commerce/energy



Helena, MT | deq.mt.gov



Richmond, VA |  
www.nano.vcu.edu



Boulder, CO | www.nrel.gov



Raleigh, NC  
nccleantech.ncsu.edu



Niagara Falls, NY  
www.niagarawind.com



Albany, NY  
nixonpeabody.com



Northern Arizona University  
Flagstaff, AZ | nau.edu/cefns



Barre, VT | northernpower.com



Seattle, WA | www.nwseed.org



**nyserda**  
Energy. Innovation. Solutions.  
Albany, NY | [nyserda.ny.gov](http://nyserda.ny.gov)

**Oklahoma  
oupi Wind  
Power  
Initiative**

Norman, OK | [www.ou.edu](http://www.ou.edu)



Mt Juliet, TN  
[www.orchidinternational.com](http://www.orchidinternational.com)



*Proudly Operated by Battelle Since 1965*

Richland, WA | [www.pnnl.gov](http://www.pnnl.gov)



State College, PA | [www.psu.edu](http://www.psu.edu)



Westbrooke, ME  
[www.pika-energy.com](http://www.pika-energy.com)



Durham, NC  
[www.ncsu.edu/power](http://www.ncsu.edu/power)



Hubertus, WI  
[www.linkedin.com/in/david-feider-1b313610](http://www.linkedin.com/in/david-feider-1b313610)



Grand Ledge, MI | [peic-us.org](http://peic-us.org)

**primuswindpower**  
Lakewood, CO  
[www.primuswindpower.com](http://www.primuswindpower.com)



Tucson, AZ  
[www.qedwindpower.com](http://www.qedwindpower.com)



Elbow Lake, MN  
[renewtechllc.com](http://renewtechllc.com)



Ellensburg, WA  
[www.righthandeng.com](http://www.righthandeng.com)



Melbourne, Australia  
[www.rmit.edu.au](http://www.rmit.edu.au)



Peoria, IL | [www.rohnnet.com](http://www.rohnnet.com)



Portland, OR  
[www.rutefoundations.com](http://www.rutefoundations.com)

**Sagrillo Power & Light**

Forestville, WI



Covina, CA | [www.sampe.org](http://www.sampe.org)

**Sandia National Laboratories**  
Albuquerque, NM |  
[www.sandia.gov](http://www.sandia.gov)

**SecondDesk**  
Weston, FL | [www.2nddesk.com](http://www.2nddesk.com)



Cataumet, MA  
[www.selfreliancefuelcoop.org](http://www.selfreliancefuelcoop.org)

**Seminole Financial Services, LLC**  
*The operating company for The Seminole Companies*

Belleaire Bluffs, FL  
[seminolefinancialservices.com](http://seminolefinancialservices.com)



Hampton, NJ  
[skylandsrenewableenergy.com](http://skylandsrenewableenergy.com)

**I South Bay Risk Management & Insurance Services**  
Torrance, CA | [sbrmins.com](http://sbrmins.com)



Clifton Park, NY  
[smallwindcertification.org](http://smallwindcertification.org)



Brainerd, MN  
[www.smallwindturbines.us](http://www.smallwindturbines.us)



Washington, DC | [strategicmi.com](http://strategicmi.com)

Arlington, VA  
[www.thestellagroupltd.com](http://www.thestellagroupltd.com)

 **SUSTAINABLE  
ENERGY  
DEVELOPMENTS™**  
Ontario, NY | [sed-net.com](http://sed-net.com)

 **SUMMERVILLE  
WIND & SUN**  
Boone, NC  
[summervillewindandsun.com](http://summervillewindandsun.com)

 **COMPOSITES**  
Scottsdale, AZ  
[tpicomposites.com](http://tpicomposites.com)

  
Northbrook, IL | [ul.com](http://ul.com)

 **UNITEDWIND**  
Brooklyn, NY | [unitedwind.com](http://unitedwind.com)

  
University of Colorado  
Denver  
Denver, CO | [ucdenver.edu](http://ucdenver.edu)

 **MAINE**  
Orono, ME | [umaine.edu](http://umaine.edu)

 **University of  
Massachusetts  
Lowell**  
Lowell, MA | [www.uml.edu](http://www.uml.edu)

  
University of Minnesota  
Minneapolis, MN  
[twin-cities.umn.edu](http://twin-cities.umn.edu)

  
Cedar Falls, IA | [www.uni.edu](http://www.uni.edu)

  
**UNIVERSITY  
of ST. THOMAS**  
MINNESOTA  
St. Paul, MN | [www.stthomas.edu](http://www.stthomas.edu)

  
VERMONT MANUFACTURING EXTENSION CENTER  
Randolph, VT | [www.vmec.org](http://www.vmec.org)

  
Duluth, MN | [venterawind.com](http://venterawind.com)

  
Harrisonburg, VA | [wind.jmu.edu](http://wind.jmu.edu)

  
The principle of revolution.

Freeville, NY  
[weaverwindenergy.com](http://weaverwindenergy.com)

  
**WES  
Engineering**  
Madison, WI  
[www.wesengineering.com](http://www.wesengineering.com)

  
West Texas A&M  
UNIVERSITY  
Canyon, TX | [www.wtamu.edu](http://www.wtamu.edu)

  
WESTERN  
ILLINOIS  
UNIVERSITY  
Macomb, IL | [www.wiu.edu](http://www.wiu.edu)

 **WETZEL  
ENGINEERING**  
Pflugerville, TX  
[www.wetzelengineering.com](http://www.wetzelengineering.com)

  
Wilson Sonsini Goodrich & Rosati  
PROFESSIONAL CORPORATION  
Seattle, WA | [www.wsgr.com](http://www.wsgr.com)

 **Wind Advisors Team**  
Broomfield, CO  
[windadvisorsteam.com](http://windadvisorsteam.com)

  
Spanbroek, Netherlands  
[www.windenergysolutions.nl](http://www.windenergysolutions.nl)

  
WIND UTILITY CONSULTING, PC  
Jamaica, IA

 **WindSTAR**  
Wind-Energy Science, Technology, and Research  
Industry/University Cooperative Research Center  
Lowell, MA  
[www.uml.edu/WindSTAR](http://www.uml.edu/WindSTAR)

## SMART Wind Consortium Participants

Frank Abdi, AlphaSTAR Corporation	Shawn Boudreau, Endurance Wind Power	Endurance Wind Power	Rob Hach, Anemometry Specialists
Krent Aberle, Sherwin-Williams	Claude Bourget, Eocycle Technologies	Chris Dearth, Energy Trust of Oregon	Alex Hagen, Weaver Wind Energy
Stuart Adler, United Wind	Andy Bridge, Janicki	Keith DeGraff, United Wind	Ashley Hale, PEIC
Bouaziz Ait-Driss, Eocycle Technologies Inc.	Scott Broughton, Advantage KY Alliance	Gunes Demirbas, G-Tower	Christopher Hansen, UMass Lowell
Roy Amberg, Amberg Renewable Energy	Malcolm Brown, Catskill Mountain Institute	Patrick Dempsey, LLNL	Gary Harcourt, Great Rock Windpower
Megan Amsler, Self-Reliance	Tom Bugnitz, Manufacturer's EDGE	Mia Devine, Northwest SEED	Mark Harris, PUC of Nevada
Vladimir Antikarov, Verea Group	Dave Burgess, Endurance Wind Power	Chris Diaz, Seminole Financial Services	Jenny Heinzen, MREA
Trevor Atkinson, Northern Power Systems	Doug Cairns, Montana State University	Roger Dixon, Skylands Renewable Energy	Dean Henderson, Infineon
Dominique Bain, Northern AZ University	Nick Cannell, Cast Alloy Sales & Technologies, Inc.	Ruth Douglas Miller, K-State University	Troy Hewitt, Intertek
Meredith Baker, Ogin Energy	Josh Carlson, Ambor Structures	James Duffy, Nixon Peabody	Bill Hetzel, Pika Energy
Mark Bakke, AWEA	Everett Carpenter, Nanofoundry	John Dunlop, Renewable Energy Services	Andrew Hickok, Pika Energy
Greg Balko, SAMPE	David Carr, Frank Phillips College	Asad Esmaeily, Kansas State University	Pat Higby, UNI Center for Energy & Environmental Education
Joe Banas, Hodge & Elyria Foundries	Ethan Case, NC Clean Energy Technology Center	Keith Evans, PEIC	Mark Higgins, U.S. DOE
Kurt Bankord, Xzeres Wind	Donald Cassil, Sherwin Williams	Randy Faller, Kettle View RE	D. DeWayne Howell, Peak Composites
Ruth Baranowski, Wind Advisors Team	George Chao, Manex Consulting	Shane Flansburg, MBA	John Hryn, Argonne Nat'l Lab
Ian Baring-Gould, NREL	Jackie Chelemedos, Renewtech	Larry Flowers, G4 Wind	Steve Huddle, University of Colorado-Denver
Bret Barker, U.S. DOE	Xing Chen, Argonne Nat'l Lab	Trudy Forsyth, Wind Advisors Team	Michael Hudon, Intertek
Ryan Barnhart, Wetzel Engineering	Mary Childress, CPA	Nik Foster, PNNL	Dave Hurst, NextEnergy
Bob Bechtold, Harbec	Mark Cironi, Green Energy Technologies	Scott Fouts, QED Wind Power	Murat Inolpolat, UMass Lowell
Tom Bell, Albany MEP	Charlton Clark, U.S. DOE	Michael Frazee, CEC Energy	Anant Jain, Intertek
Dan Bergey, Bergey Windpower	David Cregg, Kingspan Environmental	Josh Gange, NOAA	Kerop Janoyan, Clarkson University
Mike Bergey, Bergey Windpower	Habib-J Dagher, University of Maine Advanced Structures & Composites Center	John Gardner, Boise State University	Jennifer Jenkins, DWEA
Derek Berry, NREL	Rick Damiani, NREL / RRD Engineering	Helmuth Geiser, Scaled Energy LLC	Tony Jimenez, NREL
Aditya Bhatnagar, Extol Wind	Lisa Daniels, Windustry	Jake Gentle, U.S. DOE	Richard Johnson, Rockwind Partners
Jarod Bishop, EWT	Dean Davis,	Jeff Gilman, NIST	Mark Jones, EWT
Martin Bissonnette, Eocycle		Patrick Gilman, U.S. DOE	Jason Jonkman, NREL
Steve Black, Moog Components Group		David Gower, Clarkson University	Corey Juhl, Juhl Energy
David Blittersdorf, AllEarth Renewables		Elias Greenbaum, GTA, Inc.	Stephen Kalland, NC Clean Energy Technology Center
Nick Bock, Rohn Products		Scott Greene, University of Oklahoma	Gary Kanaby, formerly with Wetzel Engineering
John Bosche, Chinook Wind		Daniel Griffith, SNL	Haran Karmaker, TECO-Westinghouse
		Elliot Haag, ATA Engineering	



Padma Kasthurirangan, Niagara Wind and Solar, Inc.	Jonathan Miles, James Madison University	Black Island Wind Turbines	Val Stori, Clean Energy States Alliance
Joshua Kaufman, Pika Energy	Jeff Minnema, Jeff Minnema Consulting	Dan Radomski, NextEnergy	Ryan Storke, CEC Energy
Lawrence Kelley, Intertek	David Minster, SNL	Heather Rhoads-Weaver, eFormative Options LLC	Rich Stromberg, formerly with Alaska Energy Authority
Roland Kibler, NextEnergy	Keith Monson, formerly with Dakota Turbines	Tara Rice, Rural Council	Charles Sullivan, Dartmouth
Kerry Kisslinger, ES Wind Power	Todd Monson, SNL	Randy Richmond, RightHand Engineering	Brent Summerville, Summerville Wind & Sun
Keith Klontz, Advanced MotorTech	Scott Morton, University of WY-Retired	Britton Rife, eFormative Options LLC	Diego Tebaldi, Northern Power
Swad Komanduri, NextEnergy	Peter Mostow, Wilson Sonsini Goodrich & Rosati	Mark Roest, SeaWave Battery	Suzanne Tegen, NREL
Michael Kostrzewa, CSU	Greg Mowry, University of St. Thomas	Chris Rose, REAP	Russell Tencer, United Wind
Ken Kotalik, Primus Wind Power	Eduard Muljadi, NREL	Cliff Ryden, Blue Pacific Energy, LLC	Lise Trudeau, MN Department of Commerce
Doug Krause, Rute Foundations	John Muth, PowerAmerica Manufacturing Innovation Institute	Mick Sagrillo, Sagrillo Light & Power	Steve Turek, Wind Turbine Industries Corp.
Brian Kuhn, Aeronautica Windpower, LLC	Brian Naughton, SNL	Kurt Sahl, eFormative Options	Daniel Valyou, Clarkson University
Valeria La Saponara, UC Davis	Matt Newberry, NV Energy RenewableGenerations	Dennis Scanlin, Appalachian State University	Case van Dam, UC Davis
David Laino, Endurance Wind Power	Charles Newcomb, Endurance Wind Power	Dana Scholbrock, NREL	Ben Vickery, NIST
Greg Lane, Low Volume Lean Center	Christopher Niezrecki, UMass Lowell	Kevin Schulte, Sustainable Energy Developments	Kelly Visconti, U.S. DOE
Ken Lee, Wetzel Engineering	Stephen Nolet, TPI Composites	Adam Schultz, University of California-Davis	Arturo Villegas, XPEED Turbine Technology
Johan de Leeuw, Wind Energy Solutions	Tim Olsen, Advanced Energy Systems	Jacob Segil, University of Colorado Boulder	Karin Wadsack, Northern AZ University
Richard Legault, Eocycle Technologies	Lucille Olszewski, Ensemble Wind	Sevdalin Semov, WPS	Qi Wang, NREL
Patrick Lemieux, Cal Poly	Amanda Ormond, Four Corners Regional Resource Center	Nihar Shah, United Wind	William Werner, BLM
Greg Lepetsos, AnemErgonics	Alice Orrell, PNNL	Larry Sherwood, Small Wind Certification Council	Kyle Wetzel, Wetzel Engineering
Tom Lettieri, NIST	Remy Pangle, James Madison University	David Simkins, Renewable NRG	Thomas Williams, Ventera Wind
Rick Lewandowski, CECET	Joshua Paquette, SNL	Jim Sims, Molycorp, Inc.	Paul Williamson, formerly of Maine Ocean & Wind Industry Initiative
Barbara Linke, UC Davis	Kim Pearce, GBA Architects+Engineers	Scott Sklar, The Stella Group, LTD	Jolene Willis, Illinois Institute for Rural Affairs at Western IL University
Kenneth Loh, UC Davis	Brett Pingree, Endurance Wind Power	Wesley Slaymaker, WES Engineering	Robert Wills, forENGics & Intergrid
Dave Loomis, Illinois State University, Center for Renewable Energy	Ben Polito, Pika Energy	Brian Smith, NREL	David Willy, Northern AZ University
Blaine Loos, James Madison University	Ken Portolese, Primus Wind Power	Eric Smith, Keystone Tower Systems	Thomas Wind, Wind Utility Consulting
Jonathan Lynch, Northern Power	Nathan Post, NREL	Cris Somerville, Dakota Wind Turbines	David Winkelman, Small Wind Turbines
Ted Lynch, SMI	Robert Preus, NREL	Joseph Spossey, Intertek	David Wokosin, Northwestern University
Shannon Mahar, Duke Energy	Wei Qiao, University of Nebraska-Lincoln	Nick Stahl, Northern Power	David Wooley, Keyes, Fox & Wiedman
Pier Marzocca, Clarkson University / RMIT	Liyan Qu, University of Nebraska-Lincoln	Ken Starcher, West Texas A&M	Jay Yeager, Xzeres Wind Corp
Mark Mayhew, NYSERDA	Robert Quarterman, Midnite Solar	Bill Stein, Black Island Turbines	Wenbin Yu, Purdue University
John McCoury, Xzeres Wind	Patrick Quinlan,	Kim Stelson, University of Minnesota	Chris Zhao, Enwind
Dan McGuire, American Corn Growers Foundation		Susan Stewart, Penn State University	Bob Zider, Vermont Manufacturing Extension Center
Chris McKay, Northern Power		Kean Stimm, Kean Wind	
Stephen Meier, Orchid International		Christian Storbeck, UL	
Paul Migliore, AnemErgonics			

## SMART Wind Consortium Core Team

### Jennifer Jenkins – Executive

**Director, DWEA**, has more than 10 years of experience in the wind industry, including her tenure at Southwest Windpower's Government Affairs department. In this role, she helped secure passage of the federal 30% tax credit for small wind systems. In her current role as Executive Director of DWEA, she works with members, stakeholders, and policy makers to find opportunities to grow the distributed wind market. She earned her B.S. in Environmental Science with an emphasis on policy and public administration from Northern Arizona University and is the 2012 recipient of



the Women of Wind Energy's Rising Star award.



### Heather Rhoads-Weaver – Founder and Principal Consultant, eFormative Options LLC

, specializes in policy and market analysis, funding development, and stakeholder communications. She managed the launch of the SMART Wind Roadmap and the DOE/PNNL-funded Distributed Wind Policy Comparison Tool ([www.windpolicytool.org](http://www.windpolicytool.org)). Recent clients have included the Clean Energy States Alliance and the Small Wind Certification Council. She received Windustry's 2013 Distinguished Service in Community Wind Award and was named DWEA's 2014 Person of the Year, Women of Wind Energy's 2012 Mentor of the Year, and U.S. DOE/NREL's 2006 Small Wind Advocate of the Year. Ms. Rhoads-Weaver has served as Secretary for DWEA's Board of Directors and co-chair of DWEA's State Policy Committee. She also served as AWEA's first Small Wind Advocate, was founder of NW Sustainable Energy for Economic Development, and worked for Global Energy Concepts, the National Wind Coordinating Committee, and Iowa Citizen's Action Network.



She holds an M.S. from the University of Northern Iowa and a B.A. from Wesleyan University.

### Trudy Forsyth – Managing Director, Wind Advisors Team

, has more than 20 years of experience in wind technology. She led the DOE/NREL small and distributed wind program for 18 years where she helped design new U.S. small wind turbines, test prototypes and commercial turbines to standards, develop international and national standards, and develop distributed wind marketing and

### Wind Advisors Team

education materials. Ms. Forsyth worked closely with DOE program managers to develop multi-year strategies and implement program objectives. She is currently the president of the SWCC Board, past president for Women of Wind Energy, and a DWEA board member. She holds a BS and MS in mechanical engineering.



### Brent Summerville, PE – President,

**Summerville Wind & Sun**, is a licensed professional engineer in North Carolina with a BS in Mechanical Engineering from North Carolina State University and a Masters in Appropriate Technology from Appalachian State University (ASU). He began his career in renewable energy at ASU by designing, installing, troubleshooting, and providing training on solar water, PV, micro-hydro, and distributed wind energy projects. He gained extensive experience testing small wind turbines while serving as



manager of ASU's Small Beech Mountain Wind Research & Demonstration Site.

### Ruth Baranowski – Communications Consultant, Wind Advisors Team,

provides communications support for the SMART Wind Consortium, documenting meeting discussions and outcomes and editing materials. Her 13 years of experience in the wind industry include serving as the communications coordinator for DOE's Wind Powering America initiative, based at NREL. She holds a B.A. in mass communications from Colorado State University and an M.S. in technical communications from the University of Colorado Denver.



### Britton Rife – Policy and Communications Consultant, eFormative Options,

conducts distributed energy policy and market analysis. She has worked as a lobbyist to support strengthening and extending the Washington State Renewable Energy Cost Recovery Program and has provided communications and stakeholder engagement support for the SMART Wind Consortium project. She is passionate about environmental sustainability and holds a B.A. in Environmental Studies from the University of Oklahoma.

