2014 AK Wind Integration Workshop Speakers

Abbas Akhil, Energy Storage Consultant

Abbas Akhil is the Principal Consultant at Renewable Energy Ventures, LLC, offering consultation services in the areas of energy storage, microgrids, and renewable energy. Prior to that he retired from Sandia National Laboratories in 2011, where he worked in the DOE/Sandia Energy Storage Program for 23 years. There he performed the early studies to quantify the benefits of energy storage for electric utilities that eventually lead to battery energy storage projects in Fairbanks and Metlakatla, AK. In 1990 he was one of the founders of the Utility Battery Group (now the Energy Storage Association) and helped draft its charter. While at Sandia Labs, he also co-developed the Energy Surety Microgrid concept for military bases that is now being prototyped in US military bases. He was the Technical Team Lead for Lanai and Kauai to convert these islands to renewable energy sources for electric generation under the umbrella of the Hawaii Clean Energy Initiative. Before retirement from Sandia Labs he was the lead author of the 2013 Energy Storage Handbook published by DOE and EPRI in collaboration with NRECA.

Trevor Atkinson, Northern Power Systems

Trevor Atkinson has in excess of 25 years of experience with multiple renewable and fossil fueled energy technologies. In the two and a half decade tenure Mr. Atkinson has logged with Northern Power Systems, he has direct experience with many different system topologies, including: Wind/Diesel, Off-grid PV, PV/Diesel, PV/Wind/Diesel, TEG, CCVT, Fuel Cell & Utility Scale Wind just to name a few. Over the NPS years, he has held multiple positions in Systems/Application Engineering, Sales & Marketing, Field Service Engineering, Production/Assembly and Production Management. Northern Power Systems is the largest US DW manufacturer, one of the oldest renewable energy providers in North America, and also one of the founding members of AWEA. Mr. Atkinson has traveled to 6 of the 7 continents while performing a multitude of technical and non-technical services in support of hundreds of successful high reliability renewable energy projects.

Matt Bergan PE, Project Engineer, Kotzebue Electric Association

Matt Bergan has 15 years experience working on wind-diesel power systems. After graduating from Norwich University (Northfield, Vermont) in 1997 with a BS-Mechanical Engineering, he sought new adventures afar, and found it in Kotzebue, Alaska. In 1998, he started work at Kotzebue Electric Association (KEA) during the first expansion of the KEA wind farm from 3 AOCs to 10 AOCs. Matt is KEA's project manager on the Wales High-Penetration Power system project in Wales, Alaska. He has helped design and build several diesel and wind projects at KEA including the EMD Separate Source Aftercooling System, City Water Heat Recovery System, Alaska Technical Center PV System, KEA Windfarm Expansion I and II (AOCs, NW100, Vestas V-15), EWT 900kW Turbine Expansion Project, Zinc-Bromide Flow Battery Project, EETF Eocycle 25kW Turbine Demonstration and most recently the GE CleanCycle Organic Rankine Cycle Project.

Josh Craft, Alaska Energy Authority

Josh Craft is a lifelong Alaskan born and raised in Fairbanks. He studied Mechanical Engineering at the University of Alaska Fairbanks and spent four years as Project Manager for Alaska Environmental Power developing the Delta Wind Farm. He is Assistant Wind Program Manager at Alaska Energy Authority.

Steve Gilbert, Alaska Village Electric Cooperative

Steve Gilbert serves as manager of energy projects development for Alaska Village Electric Cooperative. Before starting at AVEC, he served as senior manager of Alliant Energy's four wind farms in three states; Iowa, Wisconsin and Minnesota, (567 megawatts), where he organized the company's new wind O&M group. He has worked in Alaska for more than 25 years. Prior to Alliant, Steve worked in Alaska for a major wind project developer, enXco and earlier for Chugach Electric where he served as Manager, Energy Projects Development and O&M. During his years at the utility, he managed three of the company's four power plants, served as electrical lead for a 1 MW fuel cell and micro turbine projects and renewable energy projects such as wind. Steve is recognized as a leading expert on wind energy and has been active on a national level in operation and maintenance of wind power plants. He is the current chair of a national wind power O&M users group, the membership of which own and operate more than 50 GW of wind assets. After completing training in electrical power engineering technology in Wisconsin, Steve started his career in 1980 in start-up of large coal, nuclear and gas turbine power plants. He provided consulting and technical services to client companies across the U.S. Steve was Alaska's electrical engineer of the year in 2000 and for the 12 western states in 2001. Steve earned his MBA in 2011 and has been a regular lecturer at schools and universities on renewables, especially wind. He also worked with BP wind in London assessing European wind prospects and developing a reference report for use by policy makers.

John Handeland, Nome Joint Utility System

Dr. Brian Hirsch, National Renewable Energy Laboratory

Dr. Brian Hirsch is the National Renewable Energy Laboratory's (NREL) Senior Project Leader for Alaska. He has been working on renewables in remote diesel microgrids throughout North and Central America for almost 20 years. His original orientation was from the hands-on perspective, having installed PV-diesel systems 200 miles north of the Arctic Circle almost 15 years ago, and subsequently led wind-diesel and in-river hydrokinetic installations as well. He has a PhD in Land Resources, with a concentration on Energy Analysis and Policy from University of Wisconsin-Madison.

Dr. Peter Lilienthal, HOMER Energy

Dr. Peter Lilienthal is the President/CEO of HOMER Energy. Since 1993, he has been the developer of the National Renewable Energy Laboratory's HOMER hybrid power optimization software, which has been used by over 100,000 energy practitioners in 193 countries. NREL has licensed HOMER Energy to be their sole worldwide commercialization licensee for distributing and enhancing the HOMER model. Dr. Lilienthal was the Senior Economist with the International Programs Office at NREL from 1990 - 2007. He has a Ph.D. in Management Science and Engineering from Stanford University. He has been active in the field of renewable energy and energy efficiency since 1978. This has included designing and teaching courses at the university level, project development of independent power projects, and consulting to industry and regulators. His technical expertise is in utility modeling and the economic and financial analysis of renewable and micro-grid projects. He was the lead analyst and one of the creators of NREL's International and Village Power Programs.

Phil Maker, ACEP Affiliated Research Faculty/Senior Control Systems Engineer, Remote Operations, PowerWater Corp., Darwin, Australia

Phil Maker is working for the Remote Operations part of Powerwater in the Northern Territory of Australia, which provides essential services to 72 remote communities. His work has largely been in the areas where Computing Science, Electrical Engineering and Systems Engineering coincide. Previous project work has included a diverse range of embedded systems including:

* TKLN - 3 x PV/Diesel/Battery hybrid systems with a total PV capacity of 1MW.
* RIWE - All phases of the Ross Island Wind Energy System, which is a flywheel stabilized Wind/Diesel system.
* Esperance Wind/Gas Turbine - a mixed Enercon and Vestas windfarm intergration
* 4210 Defibrillator - a true embedded (inside people) system which was one of the first software controlled implantable defibrillators developed. This work included the development of a formal specification in Z, implementation of a C compiler, test system and RTOS development.

Dennis Meiners, Intelligent Energy Systems, LLC

For 20 years, Dennis Meiners has worked on developing and implementing methods and technologies to lower energy costs in rural Alaska. He spent the first 10 years at the Alaska Energy Authority where he focused on developing alternatives to diesel generation and addressing the barriers to the widespread implementation of wind-diesel systems. His experience ranges from resource assessments, feasibility, modeling, design, technology development, and system implementation. Dennis is the Principal Operating Officer at Intelligent Energy Systems, LLC (IES). IES is committed to providing comprehensive energy solutions for Alaskan communities by implementing sustainable village systems tailored to lowering costs for consumers, increasing income to the utility, and reducing dependency on fossil fuel. IES provides both development and integration assistance for wind and other renewables using the latest in control systems, load balancing, thermal and real energy storage, and smart metering systems. IES developed specialized Wind Heat Smart Grids in 3 Western Alaska villages. These systems use advanced technology for variable wind energy to displace fuel used for both power generation and residential heat. IES's current projects involve advanced smart metering infrastructure, incorporation of lithium ion storage batteries for autonomous wind operation, and use of residential appliances for grid self regulation.

Joseph Owen Roberts, National Renewable Energy Laboratory

Owen Roberts graduated with a Masters in Mechanical Engineering from the Worcester Polytechnic Institute and started working on wind farm construction and development as a field engineer for an EPC contractor straight out of school. In 2009, Owen started working at NREL where his work focuses on hybrid system modeling and optimization; project specific feasibility assistance for Federal clients for wind, solar, and hydropower technologies; wind resource assessment; and wind technology analysis trends and modeling. Owen often works with NREL's International Programs Office on hybrid system and renewable energy integration projects and with the analysis group in developing models and assumptions for future wind technologies.

Dan Rogers, Electric Power Systems Inc.

Dan Rogers received Bachelor of Science degrees in electrical engineering and physics from the University of Alaska Fairbanks, as well as a master's degree in electrical engineering. While attending college he was employed at a local utility where he worked

in distribution planning, substation engineering, distribution, transmission, generation protection, and system operations engineering. Following graduation, from 1987-1989, he worked for Schweitzer Engineering Labs as an application and development engineer. In 1996, Dan co-founded Electric Power Systems, Inc. (EPS). Dan has worked at EPS since its founding on systems planning, protection, and other utility and industrial projects throughout Alaska, the Pacific Northwest, across the Pacific Rim, and in other markets. Dan is a registered professional engineer and electrical administrator in the State of Alaska.

Bill Stamm, Alaska Village Electric Cooperative

Bill Stamm has a BS in Civil Engineering from the University of Connecticut and designed water, wastewater and roadway projects for Maguire Group Inc. for his first four years out of school. He moved to Alaska in 1994, taking a job with Alaska Village Electric Cooperative as a general laborer. In 1995 he was named Assistant Manager of Construction, obtained his professional engineering license in 1997, and in 2003 took the position of Line Superintendent. Currently, Bill is Manager of Engineering, overseeing the design of electrical generation and distribution facilities for 55 rural communities, including 48 diesel power plants, 11 wind farms and 460 miles of distribution

Marc Mueller-Stoffels, Alaska Center for Energy & Power

Marc Mueller-Stoffels is a Research Assistant Professor and Power Systems Integration (PSI) Program Director at the Alaska Center for Energy and Power (ACEP). Marc's research focuses on the integration of variable generation sources into isolated micro grids. The PSI Program tackles these issues both from a theoretical and practical side by providing modeling and analysis resources, as well as a cutting edge 500 kW-power level hybrid-diesel microgrid laboratory. Prior to joining ACEP, Marc has developed regional scale climate models with focus on Arctic sea ice, and has chaired a small software company specializing in optimization algorithms. Marc holds graduate degrees in physics from the University of Alaska Fairbanks and Otago University, New Zealand.

Rich Stromberg, Alaska Energy Authority

Rich Stromberg holds a BS in Mathematical Sciences from the University of Texas at Dallas and a BA in Journalism from the University of Alaska Anchorage. He has spent a large part of his career chasing electrons around silicon circuits while he worked for Intel Corporation in the capacities of an electrical engineer, chemical engineer, mechanical engineer and material scientist. He has worked with small-scale wind and solar power systems in remote Alaska and in Colorado where he designed and built a passive solar home that meets 95 percent of its energy needs with wind, solar and biomass energy. During the week, Rich works for Alaska Energy Authority – primarily on wind energy projects. On the weekends, he can be found at his remote cabin, which is powered by a solar PV system and biomass heating.

Doug Vaught, V3 Energy, LLC

Douglas Vaught, P.E., owner and principal engineer of V3 Energy, LLC since 2003, has extensive Alaska experience in wind resource assessment, wind site selection and

permitting, rural village wind-diesel hybrid modeling and power system configuration, and meteorological test tower installation (up to 60 meters tower height). His special expertise is the cold climate wind power development challenge, which includes severe cold temperatures, atmospheric icing/rime icing, permafrost, and the difficult logistics of remote area work. As adjunct faculty at the University of Alaska Anchorage Mat-Su College campus, he taught two renewable energy courses spring semester 2011. In addition, Doug has 13 years of experience in environmental engineering, hazardous waste cleanup, and risk assessment modeling, plus five years of experience as a nuclear power engineering officer in the United States Navy. Doug is a graduate of the University of Kansas School of Engineering (aerospace), the Navy nuclear power officer training program, and The Evergreen State College in Olympia, Washington (M.E.S., environmental studies). His master's thesis is titled Risk Assessment and Cleanup Policy at the Hanford Nuclear Reservation: A Case Study (1995).

Richard Wies, University of Alaska Fairbanks

Richard Wies is currently an associate professor in the Electrical and Computer Engineering Department at the University of Alaska Fairbanks. Dr. Wies received his B.S., M.S., and Ph.D. degrees in Electrical Engineering from University of Wyoming in 1992, 1995, and 1999, respectively. He currently leads research focused on the engineering challenges of renewable energy integration in standalone diesel electric microgrids in collaboration with the Alaska Center for Energy and Power. His main areas of research related to renewable energy system integration include advanced controls for grid stability and smart power dispatch strategies. His other research interests encompass projects related to the efficient, economic, safe, reliable, and sustainable operation of electric energy systems.

Mike Wright, Golden Valley Electric Association

Mike Wright has 20 years of utility experience in engineering, operations and management. Mike spent 11 years in the US Air Force as an electronic technician prior to enrolling in college. He joined Golden Valley as an Engineer in 1990 after earning his BSEE Degree from the University of Alaska. Wright accepted the position of Line Superintendent in 1995 with the responsibilities of supervising right-of-way maintenance and line activities. He took over responsibility of the Electric Shop in 1998 and assumed the position of Operations Manager. Wright was promoted to his current position of Vice President of Transmission & Distribution in 2001 and is responsible for overall leadership of the Engineering, New Construction and Operations Departments.