

Terrance M. Meyer P.E.

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PROFILE Active in projects involving advanced, distributed, and renewable energy technologies, specifically wind power. Participated in assessments of more than 100 renewable energy projects and technologies in the past few years. Project types have included strategic planning assessments, feasibility studies, due diligence investigations, performance testing, technical and financial analyses, product development research, market analyses, system design, and patent writing. Involved in projects representing a wide variety of generation technologies from utility scale to distributed generation. Technologies include wind, biomass, pumped hydro energy storage, ultracapacitors, batteries, renewable fuels, cogeneration, solar photovoltaic, solar thermal, hydroelectric, in addition to various conventional energy technologies. Specializes in wind energy and integrated resource planning.

EDUCATION **University of California** *Berkeley, California | 1999*
Bachelor of Science, Mechanical Engineering
Bachelor of Arts, Environmental Science

PROFESSIONAL MEMBERSHIP EIT *Washington | 2000 - present*
PE *Kansas | 2005 - present*

EXPERIENCE **BP Renewable Energy** *United States | 2006 –present*
Project engineer - wind resource due diligence
Reviewed the wind resource and other technical factors of multiple wind energy projects being considered for purchase. Using available data, wind modeling software, and proprietary analysis tools reported expected capacity factors and a detailed uncertainty analysis.

Various Developers *Western states | 2004 – Present*
Lead engineer - wind resource assessment
Modeled the wind resource using WAsP and WindFarmer software packages for several wind farm sites. Developed a wind farm layout to maximize energy capture and reported results in a format suitable for the clients to seek financing for their projects.

Confidential developer *United States | 2004 - Present*
Consulting engineer - wind project research
Catalogued and characterized all existing and proposed wind development sites in the Western United States. Project specifics such as location, transmission, ownership, permitting, etc. were catalogued and capacity factors and other data were estimated. This database was used to assess competition in various markets.

Confidential Clients *Various states | 2004 – present*
Wind energy analyst - feasibility study for on-site wind power at industrial facilities
Performed an initial study on the feasibility of installing commercial-scale wind turbines at industrial plants in the Midwest United States. Evaluations included wind resource, load profile, land use, and obvious fatal flaw reviews.

PPM Energy *United States | 2004 - present*
Testing engineer - power performance tests
Wrote power performance test plan conducted test and wrote test report for several wind farms. Tasks included analyzing wind and terrain, selecting test turbine, specifying met-tower configuration, programming data logger, analyzing test data, and writing the test report to meet IEC 61400-12-1 Ed1 specification.

Chinook Wind*Washington | 2001 – present**Patent writer*

Patent writing for numerous renewable energy patents. Consulted with inventors to establish patentable aspects of invention. Wrote full text of patents and drew or coordinated with drafts person to draw all patent drawings. Delivered product to patent agent for claims writing and submittal.

Black and Veatch*Renewable energy consultant**Kansas City | 2005*

Worked within a multi disciplinary team providing a wide spectrum of renewable energy consulting services including utility integrated resource plans, studies for government agencies, and renewable resource assessments for private clients.

CEC / Palmdale Water District*California | 2004 – 2006**Project coordinator - energy storage enabled renewable microgrid power network*

Awarded contract from CEC to demonstrate a 450 kW ultracapacitor-based microgrid that will integrate wind, hydro, engine generators, and various loads at the Palmdale Water District.

Prairie Band Pottawatomie Nation*Kansas | 2005 – 2006**Project engineer - wind energy resource assessment*

Assessed the potential for wind power for on site use and development of a wind farm for a sovereign native nation. Commissioning the installation of three 50 meter meteorological towers, and receiving the data via cellular connection data. Monthly data reports are generated and presented to tribal staff. On-reservation community outreach activities have been conducted and will continue. Once a year of data is collected feasibility of various project options including self generation for the tribal casino will be assessed and recommendations made to the tribal government.

Viejas Tribal Government*California | 2004 - 2005**Technical consultant - renewable energy tribal utility study*

Developing a unique energy master plan for the Viejas Tribe, which owns a casino and outlet mall near San Diego. The investigation includes load profiles, energy markets, investigation of alternative electrical supply and development of cogeneration, renewable energy, distributed, and natural gas-fired generation. Project received DOE funding for feasibility study of a renewable energy based tribal utility. Study includes resource assessment, energy storage technology characterization, and project planning to meet 100 percent of the tribe's energy needs from renewable energy sources.

Massachusetts Technology Collaborative*Massachusetts | 2004 - 2006**Wind Energy Analyst - Community wind development*

Performed feasibility studies into community wind energy projects at three locations in Massachusetts. Examined wind resource, land use, electrical interconnection, environmental impact, and financial performance issues at each site. Prepared recommendations for further project support.

Kauai Island Utility Cooperative*Hawaii | 2004 - 2005**Wind Analysis – Wind energy resource planning.*

Identified potential sites for wind energy development on the Island of Kawai. Assessed the capacity of these projects, transmission constraints, environmental factors, and potential aesthetic objections. Aided in the development of a supply curve for multiple energy projects to support Kauai Island Utility Cooperative's Integrated Resource Plan.

Los Angeles Department of Water and Power*California | 2005**System Analyst – Renewable technologies and transmission assessment*

Analyzed potential renewable energy generation from multiple technologies in a region northeast of the city of Los Angeles. Analyzed technology capacity factors, technology maturity, cost of energy and multiple other factors. Identified potential resources and

developed a supply curve with emphasis on staying within current transmission constraints and already planned upgrades. Developed a model to analyze the effect of combining renewable resources within a constrained transmission system. Showed the potential for managing 750 MW of nameplate capacity (wind, geothermal, solar, and hydro resources) on a 500 MW transmission line with minimal loss of energy

Liquid Sun Diesel

Washington | 2001 - 2004

Biodiesel processing plant, operations and engineering,

Oversaw operations of and performed continuing engineering for a small biodiesel manufacturing facility. Waste vegetable oil was used as a feedstock in a base catalyzed batch reaction. Fuel was locally distributed and used on site.

National Renewable Energy Lab

United States | 2003 - 2004

Market and technical analyst - advanced independent pitch control

Provided market and technology analysis supporting conceptual wind turbine control scheme using inflow sensors as input for independent blade pitching for increased energy capture and reduced loading.

Department of Energy

United States | 2004

Testing engineer

Development of innovative wind turbine blade design. Prepared a test plan for quantifying a new variable length wind turbine blade under development.

Porter Farm

Washington | 2004

Owners engineer

Small hydro project design and engineering. Analyzed on site hydroelectric resource and designed project to meet non-energy needs such as fishpond circulation, and land use preferences. Applied for and received USDA Energy Efficiency and Self Producer Grant.

Xantrex Technology

Washington | 2001

Staff engineer

Inverter testing and thermal and mechanical design. Conducted thermal testing of flagship inverter and participated in mechanical redesign for better thermal performance and product balance. Performed transformer redesign and testing for increased performance. Designed sheet metal chassis and components.

PUBLICATIONS "Low Wind Speed turbine Project Conceptual Design Study:

AND Advanced Independent Pitch Control"

PRESENTATIONS NREL | Golden, CO | 2004

"Consumer Produced Wind Power in San Francisco's Sunset District"

University of California Berkeley | Berkeley CA | 2000