EAPC Wind Energy Services

EAPC has provided wind engineering and consulting services on more than 21,000 MWs of wind farm development throughout North America, South America and Europe. We provide a range of services to wind developers both large and small, financial institutions, electric utilities, communities, economic development groups, universities and Native American tribes. Our services include site prospecting, feasibility studies, met tower siting and erection, wind resource assessment, data collection and analysis as well as wind farm layout and wind turbine array analysis. We also provide due diligence services to investors, financial analysis, development consulting, and strategy consulting services as well as expert witness testimony in permitting hearings.

Wind Resource Assessment and Feasibility Studies

Wind Resource Assessment

From wind prospecting and preliminary assessments to complete and detailed "bankable" reports—we provide it all.

Met Tower Sales and Erection

Our highly professional full-time crews, operating from offices on the east coast and the Midwest, have installed and commissioned more than 100 met masts in the last few years. Our "bankable" tower configuration and commissioning documentation is among the most comprehensive in the industry.

Wind Data Collection and Monitoring

We provide data collection and reporting services to many of our clients. We help them to achieve a high rate of data recovery, alerting them when a met mast is in need of inspection or repair. We deploy our crews when necessary to correct the situation in a timely manner.

Constructability Analysis

Our initial review of terrain, soil type, erosion concerns, and site accessibility saves time and money during permitting and construction.

Environmental and Constraint Studies

We screen projects for possible fatal flaws that developers benefit from discovering early on in the process.

Noise, Shadow Flicker and Visual Simulations

Our detailed studies help developers, communities and regulators understand a project's potential impact on the surrounding community.

Wind Farm Siting and Optimization

Relying on wind data and the results of geographic, environmental and infrastructure studies, we identify the optimal location for a wind farm, and then use powerful modeling software to optimally site the individual wind turbines.

Energy Production Estimates

We provide wind farm energy production estimates which incorporate specific wind turbine power curves with the site-specific terrain features, wind data, array losses and other energy losses to provide the best possible central estimate (P50) of energy production for project and financial planning purposes.

Uncertainty Analysis

By identifying and quantifying the various sources of uncertainty that are inherent in the energy production estimate, we provide our clients with valuable information regarding the upper and lower confidence limits (ie. P90, P95, etc.) associated with the central estimate (P50) of annual energy production.

Development Consulting

For landowners and project developers, our reliable and creative leadership moves projects through the maze of wind resource assessment, land control, permitting, interconnection, construction, and dozens of other considerations.

Contract Negotiation and Review

For years, we've negotiated and reviewed turbine supply agreements, EPC contracts, landowner leases, and O&M agreements, drawing upon knowledge that only comes with real world experience.

Technical Due Diligence

Some of the largest project lenders and equity participants in the nation rely upon us as independent engineers and technical experts to maximize profit and minimize risk.

Financial and Economic Analysis

Our team helps clients understand project capital and operating costs, financing structures and power pricing through detailed economic models. We match projects in need of funding with investors eager to put their money to work.

Project Design and Engineering

Our civil, electrical and mechanical engineering staff carry out turbine foundation and electrical collection system design. Involving our engineering staff early in the development process means we avoid the pitfalls that add to construction costs later.

Strategy Consulting

As technology evolves, policy and tax incentives change and new markets develop, we shape strategies for clients confronting a changing landscape. That work includes comprehensive market research, supply chain analysis and assessment of new technology.

WindPRO

EAPC Wind consultants are the sole North American distributors of WindPRO, the world's most comprehensive software package for design and planning of wind farm projects. Our expert consultants regularly conduct WindPRO training workshops throughout North America.

Founding Partners

Bob Sherwin

In 1973, Bob started one of the first commercially viable wind turbine manufacturing companies in the United States. Over the next 10 years, Enertech became one of the largest wind turbine companies in the world. Its turbines were installed from China to California to Alaska. Bob later founded and led Atlantic Orient Corporation. He has been involved with the American, Canadian and European Wind Energy Associations and has helped set the vision for the wind industry from its earliest days. Over the last 35 years, Bob helped shape industry standards around the world, consulted for some of the largest project developers, built numerous wind farms, and worked with several of the largest financial institutions in the industry. A long-time member of the IEC standards committee, he brings a rich background spanning all aspects of the industry, with particular expertise in technical analysis, contract review, strategic consulting, and business growth.

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Jay Haley, P.E.

Jay has been involved in wind energy since 1983. He spent six years as the Director of Engineering for an aerospace firm and then 10 years as a Research Engineer for the Energy and Environmental Research Center at the University of North Dakota. Currently Jay is a Partner and Past President of EAPC Architects Engineers in Grand Forks, ND.

Jay has experience in all aspects of wind energy development and provides consulting services to wind developers, electric utilities, Native American tribes, communities, economic development groups and universities.

Jay conducts WindPRO training courses and has taught hundreds of wind energy professionals in the principles of wind resource assessment and wind farm design. He is also a Risø-Certified WAsP user.

Jay is a Registered Professional Engineer with registrations in North Dakota and Minnesota. He is a member of the American Wind Energy Association and the National Wind Coordinating Committee. He is the founding chairman of the Wind Energy Council, and past chairman of the North Dakota Renewable Energy Partnership.

jhaley@eapc.net

Strength of the EAPC Approach

Over 21,000 MW of wind resource assessment and development experience across North America go with EXPERIENCE

100+ member staff of developers, engineers, meteorologists, and analysts

We encourage rigorous wind resource assessment and project feasibility studies.

We consider them a vital step in project development and the smartest way to obtain a realistic understanding of a project's potential, long before significant funds are committed.

We emphasize real world experience.

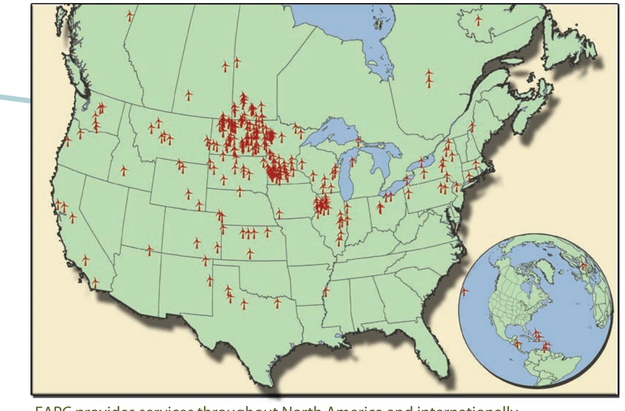
The guidance we provide to our clients is always grounded in a practical knowledge of what it takes to develop a wind project, not the theoretical. We've been in the field. We've negotiated with landowners and navigated complex permitting requirements. We know the realities and the frustrations.

We pride ourselves on our versatility.

We've conducted detailed technical due diligence on entire portfolios for leading financial institutions and we've guided first-time developers who are exploring their first projects. In every case, we patiently tailor our approach to a client's needs and level of experience.

We adhere to "bankable" practices.

The requirements imposed by project investors and lenders vary, but our consultants always have an eye toward the day when a project will seek financing. From the first met mast we erect for a new project, we have that day in mind.



EAPC provides services throughout North America and internationally.

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Grand Forks
3100 Demers Avenue
Grand Forks, ND 58201
(p) 701.775.3000, (f) 701.772.3605
wind@eapc.net

Other Locations:

Fargo
112 North Roberts Street, Ste 300
Fargo, ND 58501

Minot
300 3rd Avenue SW, Ste C1
Minot, ND 58701

Jamestown
223 1st Avenue North
Jamestown, ND 58401

Bemidji
222 3rd Street NW
Bemidji, MN 56601

Bismarck
121 East Broadway Avenue
Bismarck, ND 58501

EAPC Wind Energy

www.eapcwindenergy.com

We are the Experts!

Approachable, responsive consultants.

Expertise that spans the wind industry.

Decades of real-world experience in project development.

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