

THIRD-PARTY CERTIFICATION HELPS HARVEST WIND POWER'S FULL POTENTIAL

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The global demand for energy, coupled with the desire for more sustainable energy options, has generated increased interest and investment in wind power projects. From 2002 to 2012, global annual

installed wind capacity increased from 7,270 MW to nearly 45,000 MW. The vast majority of new wind farm capacity is being built in Europe (largely offshore), Asia, and North America (largely onshore).

CERTIFYING SOUND PRINCIPLES

Onshore and offshore wind farm projects pose a number of challenges tied to their complexity and the fact that each site is different. Certification by an internationally recognized body helps ensure that a project meets specific regulatory requirements.

Accreditation bodies like Cofrac in France and the German Maritime and Hydrographic Agency have developed certification schemes for new wind farm projects. Schemes differ depending on the particular country or whether the farm is onshore or offshore, but companies who achieve certification have demonstrated that all components of a wind farm, and the wind farm as a whole, meet standardized technical criteria related to design, manufacturing, installation, and operation.

While certification is not a legal requirement for operation in many countries, it is in a wind power provider's best interests to have their projects certified. Investors and insurance providers prefer to back certified wind farm projects, and it gives the federal and local governments in the country a greater sense of assurance and confidence in the project. The operator also benefits from this certification, as it ensures that their farm is built to a higher standard to operate longer and more reliably than a non-certified project.

But regardless of a wind farm's size or location, developers more commonly look for outside assistance to ensure that the project



is designed, built and operated to comply with all certification criteria for safety, environment, fire, structural integrity, and energy efficiency. At the same time, the certification process must be carried out as safely, cost effectively and reliably as possible.

Independent third-party certification bodies are increasingly called upon to ensure that a new project is designed and built to the proper specifications and that it complies with guidelines that safeguard environmental, biological, safety, and cultural interests in the vicinity. Selecting the right certification provider requires careful consideration of several criteria that must be met to ensure project success.

COMPREHENSIVE SELECTION CRITERIA

Any qualified third-party certification authority should first come equipped with a thorough understanding of all relevant building, operational and environmental compliance codes at all regulatory levels in the country. In addition, they should be able to provide guidance on how the developer can comply with these codes in ways that are not too expensive or onerous.

A third-party certification body should also provide full-time, on-site support during the commissioning and ramp-up stages of a project. This availability is critical for inspections, for example, as having the third party on site helps the operator avoid delays associated with waiting for an offsite inspector. If any part of the facility is flagged during the inspection, it can be addressed and re-inspected by the third party in a shorter timeframe. This full-time third-party presence

may also provide the necessary qualified manpower during project building and start-up; the developer can avoid the need to staff up internally during the initial stages of the project, only

to lay off people once the project is up and running.

An effective third-party certification partner should follow a consistent certification approach that ensures robust QA/QC for the

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project, both at startup and during ongoing operation. This is aided by efficient processes to control costs, schedules and documentation. Bureau Veritas, for example, employs a Compliance Document Tracking System, an electronic document creation and archiving system that keeps all relevant inspection, permit application and regulatory compliance documents for a project in a safe, password-protected environment. All parties, from owners to regulatory agencies to compliance managers, can access and update documents, which helps ensure that important project milestones are not missed and that the inspection and permit application process occurs as seamlessly as possible.

A particular benefit of working with a larger certification provider is the greater operating reach and breadth of expertise that they can provide. A large organization provides local expertise to assist in projects in the communities in which their certification experts live and work. In addition, they should be able to offer a nationwide reach, whereby personnel can network with their associates working on other wind projects across the country to offer advice and share best practices.

A developer should also consider a third-party certifier's experience, integrity, and ethics during the selection process. Certification providers that pride themselves on conducting their inspections and certifications with the highest level of integrity and ethics will in turn yield favorable business opportunities for the project developer. Partnering with an established third party with a long successful track record provides developers with added assurance that they will be

around to offer consulting and assistance through the 25-plus year operating life of a project.

VERIFYING CONFORMANCE IN THE FIELD

Bureau Veritas has provided regulatory and certification assistance to wind power projects for several years. The certification program has evolved over time to provide the necessary technical expertise and regulatory understanding required for larger and longer-lived projects.

The County of Solano in central California, for example, needed this level of technical support and expertise to perform inspections and engineering plan reviews, electronically process and review plans, and archive all intelligent data for seven onshore wind farm projects. These included:

- High Winds Project
- Shiloh Wind Farm
- Shiloh II Wind Farm
- Shiloh III Wind Farm
- Shiloh IV Wind Farm
- Montezuma Hills Wind Farm
- Montezuma Hills II Wind Farm

All work performed in the construction of these projects was required to meet California Building Code requirements. In addition, the county needed engineers and inspectors with specific experience in structural observation (as mandated by California Building Standards), safety training and programs, CAD weld testing, high pot testing, underground feeders to transformers, distribution, and electrical transfer stations.






Bureau Veritas North America was selected to provide licensed and certified engineers and inspectors—each with unique wind project construction experience—

to verify compliance of these wind projects. Specific areas of assistance included reviewing engineering designs, approving fabricator programs and inspecting construction operations for all applicable disciplines.

In addition, the certification body assisted the document review and control process through the use of BVnet, a software platform that digitizes the entire plan review and inspection documentation. Submittals of electronic drawings and documents, review/comments, status, project photos, authenticated approvals, certificates, and other project/contract data can be securely accessed by clients, partners, and employees at relevant phases of the project.

This comprehensive inspection and engineering review gave Solano County assurances that the project was completed in full compliance with all applicable regulations and standards and that Bureau Veritas teams was committed to the successful completion of each project.

As long-term wind farm projects become more commonplace around the world, the need for well-qualified, experienced and highly technical certification and inspection providers will become more crucial. Partnering with the right provider helps ensure that wind power projects of any size and complexity are designed, built and operated safely and cost-effectively—from startup to shutdown, many years down the line. ✨

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