

Energy and utilities

ACCIONA Windpower

Technological innovation powers a sustainable future

Products

NX, Teamcenter

Business challenges

Promote sustainability while producing energy at a competitive price

Consolidate and expand global market presence

Increase productivity in R&D and improve product development process

Better manage project documentation and audit trails

Improve workflow control of engineering change management process

Keys to success

Integrated environment of CAD and PDM

Usability and effectiveness of software solutions, especially flexibility of synchronous technology

Ability to manage complex structures

Fast deployment time and staff training

Global manufacturer relies on NX and Teamcenter to design wind turbines for leading energy and utilities companies around the world

ACCIONA Windpower, a division of the corporate group ACCIONA, specializes in the design, manufacturing, commissioning and after-sales service of wind turbines. With headquarters in Navarra, Spain, the company currently has four factories, three located in Spain and one in the United States, and employs about 600 people. Its customers include important energy and utilities companies from twelve countries around the world, including Canada, Mexico, Chile, United Kingdom, China, South Korea, Australia and Spain.

According to Miguel Núñez, engineering manager at ACCIONA Windpower, one of the distinguishing assets of the company is the vast experience of its ACCIONA Energía business unit, which serves as headquarters for the development and implementation of wind parks all over the world. Proof of the organization's industry gravitas is the installation of 8,365 megawatts so far, of which 6,893 megawatts are self-owned and operated. In addition,



ACCIONA Energía is a world leader in the production of renewable energy, with 2,200 employees and a turnover of 1,487 million euros in 2010.

A key element of ACCIONA Windpower's success is its commitment to technological innovation, with a clear objective of promoting sustainability. "We have to develop wind turbines to produce energy at a competitive cost, in comparison to other forms of energy, in order to promote technology that avoids emissions, reduces energy dependence and creates wealth and employment," says Núñez. To achieve this, the company has been using product lifecycle management (PLM) solutions from Siemens PLM Software for more than ten years.



Results

Improved competitive viability
Exceptional services provided to the world's largest energy and utilities companies

Efficient development of projects in twelve countries

Significantly improved R&D/innovation environment

Optimized work processes across design and engineering, including new best practices for workflow

Design changes reduced from days to minutes

Strict control of engineering change orders and project documentation

Digital signatures and signoffs provide key audit trail

Ease of use and capacity of integration

It was in 2000 when ACCIONA Windpower adopted NX™ software, an advanced computer-aided design (CAD) technology from Siemens PLM Software. "We worked previously with AutoCAD software, but as our volume of information increased, we came to the conclusion that this design system did not match our expectations," explains Núñez. The selection process took only a few months. "We learned that using NX was simple, efficient and very user-friendly," recalls Núñez. "The process of adaptation to the new system by our engineers was very straightforward."

Three years after implementing NX, the company decided to adopt a product data management system to further improve efficiencies and control processes. After a thorough evaluation, ACCIONA chose Teamcenter® software, another Siemens PLM Software product. He notes, "The key

factor was an out-of-the-box solution that integrated with CAD, and such integration was clear with Teamcenter, with no need for an interface."

NX for design

ACCIONA Windpower uses NX primarily to design and assemble both its own components and those shared with its suppliers. Josu Sanz, a key user of NX at ACCIONA Windpower, points out, "We use NX modeling and sheet metal to design the wind turbine components in 3D, and NX advanced freedom modeling to draw the housings of the wind turbine components and render the blades' surfaces." The designers also use NX to make screenshots for purposes of illustrating mechanical guidelines, producing video presentations, and maintaining discipline and structure throughout engineering changes and certification of the wind turbine's components. Managing the CAD files in Teamcenter allows the data to be easily re-used.

Teamcenter for engineering

Teamcenter is used to control documents such as instructions, supply data, functional specifications and processes like engineering change orders (ECOs). These are generated and managed with Teamcenter, and the status can be viewed by the rest of the ACCIONA Windpower organization. According to company management, the use of Teamcenter provides

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Josu Sanz
NX Key User
ACCIONA Windpower

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Josu Sanz
NX Key User
ACCIONA Windpower

security and control of all of its engineering processes. Among other actions, it allows them to organize the information, generate permissions for data access, and make regular reports on ECOs or other modifications. Management notes the high value of Teamcenter being fully integrated with NX. “It’s very convenient,” says Ieltxu Garde, manager of the PDM and NX projects in the Project Department. “When you save a component in NX, the corresponding information is generated in Teamcenter.”

Another important use of Teamcenter is in the audit and approval process for regulatory compliance. Through the use of Teamcenter workflows, an efficient approval process, complete with digital signatures, is now in place. This functionality directly assists in meeting ACCIONA Windpower’s environmental goals. “Before we began using Teamcenter, we had to print the documents, obtain the necessary signatures, scan them and share them,” says Garde. “Now the documents go through workflow and the digital signatures of the creator, the reviewer and the editor are stamped; and that’s all, the process is finished.”

Outstanding performance improvements

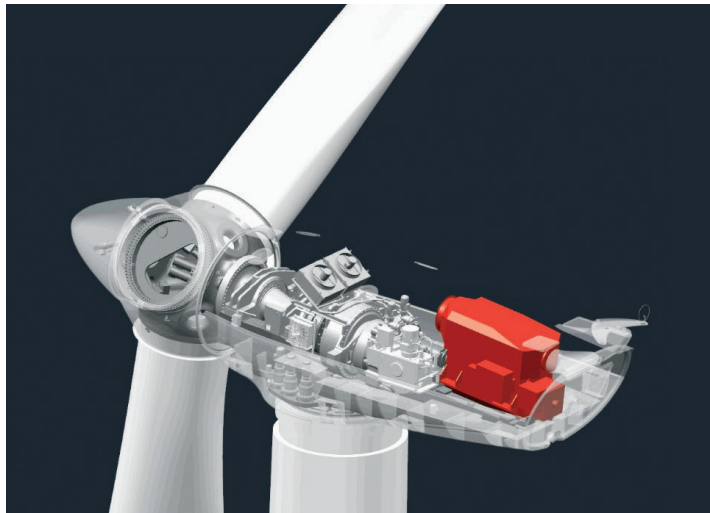
Recently, ACCIONA Windpower upgraded its PLM software – both NX and Teamcenter. The technology upgrade,

which was conducted over a weekend, was described by management as a significant success. Upon completion of the upgrade, several training sessions were conducted for staff members. ACCIONA Windpower’s technicians cited important advances in software functionality and they noted the increased performance levels of the solutions.

Sanz says that, thanks to the Teamcenter upgrade, the speed with which assemblies are loaded has improved by 68 percent. At the same time, the use of NX with synchronous technology allows easy modifications of the components, even those designed by suppliers using other CAD systems. “With synchronous

“The strength of Siemens PLM Software is its clear orientation towards an industry that requires large developments in technology and innovation.”

Miguel Núñez
Engineering Director
ACCIONA Windpower



Solutions/Services

NX

www.siemens.com/nx

Teamcenter

www.siemens.com/teamcenter

Customer's primary business

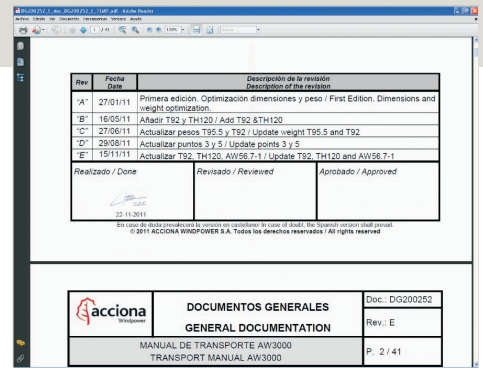
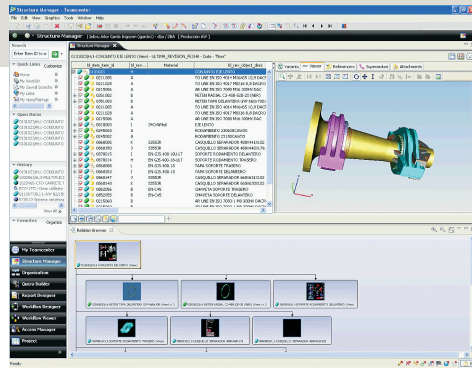
ACCIONA Windpower designs, manufactures, commissions and maintains wind turbines.
www.acciona-energia.com

Customer location

Barásoain (Navarra)
Spain

"It's very convenient. When you save a component in NX, the corresponding information is generated in Teamcenter."

Ieltxu Garde
Manager of PDM and
NX Projects
Projects Department
ACCIONA Windpower



technology, we can introduce modifications to the model quickly and without looking at the assembly tree," says Sanz. "It is a very powerful function, even when there are parts with complex feature trees."

PLM – integral to the company's vision

Management notes that the technologies of Siemens PLM Software have been instrumental in helping to achieve the company's enhanced competitive viability and strong, global market position in wind turbines. "The strength of Siemens PLM Software is its clear orientation towards an industry that requires large developments in technology and innovation," says Núñez. "That's why we plan to enhance our partnership with Siemens PLM Software." One

of the more advanced projects underway at ACCIONA Windpower is the implementation of a new methodology for designing the blades' interior. The company is considering adopting new NX modules to support the methodology. The company also has important plans for the use of Teamcenter. It intends to integrate Teamcenter with EPLAN® software, a solution for designing electrical elements. In addition, in order to further automate processes and improve production traceability and control, ACCIONA Windpower plans to integrate Teamcenter with its enterprise resource planning (ERP) system.

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