GE Energy required a highly tailored web application to streamline knowledge capture, retention, and communication for wind farm site suitability analysis.

"EASA enabled us to reduce the IT effort and accelerate the deployment of the Wind ITO (Inquiry to Order) system.

Consequently, we have reduced the number of hours per project, enhanced accuracy by reducing manual operations, increased our ability to try 'what if' scenarios, and empowered non-experts".

GE Wind Energy.

GE Energy is one of the world's leading wind turbine suppliers, with over 8,400 wind turbine installations.

The Wind ITO (Inquiry to Order) application, created with EASA, is now used by 130 people on 3 continents. Wind ITO is a custom web-application which integrates Oracle® with analysis tools such as MATLAB®, Excel®, and several proprietary algorithms.

Problem: How do you automate and streamline the complex processes associated with major projects?

Site feasibility studies for a wind farm project are complex and time-consuming, and must address a host of issues such as integration with the power grid, optimization of wind farm layout, load analyses, regulation, and the local environment and topography.

Historically, the process involved unstructured email, and multiple teleconferences and meetings. It was a highly manual process.

Various stages of the suitability analysis were performed by experts in their localized environments, often spread across multiple geographic locations. Though the multiple analysis results were always manually integrated to produce the final evaluation, it was difficult to avoid inconsistent methods, human errors and the loss of technical and process knowledge.

Solution: Use EASA to create a custom web-application, tailored to your specific requirements.

To reduce turn-around time of analysis and to build consistent global processes, a web-based system called *Wind ITO (Inquiry to Order)* was conceived. In order to dramatically reduce the time taken to create and deliver the Wind ITO application, GE selected EASA.

EASA is a patented software product which enables ultra-rapid creation of custom web-based applications which leverage existing assets such as spreadsheets, databases, web-services, and legacy applications.

The Wind ITO system has resulted in an error-proof process that provides consistent and reproducible results, a knowledge base that allows validation and verification of past analyses, enhanced productivity and a quicker turn-around on complex analyses.

For further information or to download EASA, please visit: www.easasoftware.com

Specific features of the application include:

- Ability to define wind farm layouts and wind turbine configurations;

- Storage of project information, customer files, analysis information, versions used for each analysis, as well as analysis results;

- Ability to perform a daily load of latest projects from the Sales Opportunity system;

- Capture the results of all analyses to a knowledge bank, so that results from any past analysis can be recreated at any time;

- Communication of generated knowledge in the form of technical report generation, performance scorecards and process management reports.

The Wind ITO application leverages internally created algorithms and models (Excel and MATLAB) in combination with commercial off-the-shelf (COTS) tools such as Oracle. EASA allowed for rapid user interface development, automated queuing and seamless connectivity to compute servers.

Custom algorithms were developed to enhance the interpretation of output, and to facilitate workflow management.

Finally, the system has automated the generation of analysis reports for customers, and the calculation and distribution of metrics for project management and work load balancing.

Future work aims at enriching the knowledge base with wind farm layout knowledge and the possibility of employing Artificial Intelligence techniques for automated knowledge generation.

User Roles

Status

Schedule

System-generated E-mails

Project Metrics

Customer Reports

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