



CASE STUDY

Invenergy saves 15 minutes per technician per day with Octave Attune EAM

Key facts:

Company: Invenergy.

Website: www.invenergy.com

Industry: Utilities

Headquarters:
Chicago, IL

Total developed wind projects: 99

Generating capacity:
15,608 megawatts
worldwide

Octave products used:
Attune EAM (*HxGN EAM*)

In order to manage a modern wind farm with accurate asset data, Invenergy set out to shift from a paper-based record management system to a digitized system.

With a digitalization initiative underway, the team began treating standard operating data as a source of business intelligence — driving trend analysis and sharpening maintenance planning. Shifting data to tablet devices has allowed field technicians to more conveniently access essential asset information. Further, the ability to complete maintenance records, inventory transactions and pertinent attachments at the worksite—rather than upon returning to the shop—saves 15 minutes per tech, per day.

Digitizing asset records to optimize operations

Like many other companies, in the utility sector and beyond, Invenergy started out with a paper-based asset management system that relied on physical checklists. Technicians would complete steps in a process, literally check the boxes and record handwritten notes on clipboards. The information was uploaded to Attune EAM and then stored in binders for physical record-keeping, which often led to issues with document control and legibility.

Performance audits for individual wind turbines had to be conducted based on reviews of physical work orders and even the PDF versions of those documents had no search functionality.

Invenergy replaced its paper systems with crisp, clear, mobile checklists, which include easy-to-use dropdown boxes and the capacity for technicians to sign off on their work.

Now, records are vastly easier to store and retrieve, lend themselves far better to management oversight and have allowed the company to identify specific components in individual turbines that are performing outside standard parameters.

Driving data to field operations

By putting maintenance work orders at technicians' fingertips, Attune EAM Mobile allows crews to adapt quickly to changing circumstances, saving valuable work hours.

A maintenance team might set out to work on a wind turbine; but plans may change. For example, if the lighting around a tower is out of service, it's considered unsafe to climb. Troubleshooting the unexpected problem could take hours and the location might be a 15- to 30-minute drive from the maintenance records office. Now, with the day's maintenance plan easily available on a tablet device, the team can move on to the next turbine and get to work.

The new system also reduces wait time at the end of a shift, enabling technicians to enter their work reports from the field rather than waiting in line for access to a central desktop computer.

"We've been able to trend on some of the data the technicians are generating. We can follow maintenance items on the mobile checklist, and if a component is wearing faster than it should, we can decide whether to switch to a different product."

Frank Santiago
Director, Operations Support Systems, Invenergy



Innovating step by step

Invenergy's transition to digital records began in March 2015 with the delivery of three tablet devices to its wind farm in Gratiot County, Michigan, followed by a second beta test at a facility outside Seattle. The successful trials set the stage for fleet-wide implementation, with extensive support from Octave's support team to refine checklists, dataspies and screen designs.

With the new system speeding up maintenance operations at the two test sites, the company launched a six-month rollout across its entire wind fleet, acquiring and configuring one tablet device for each of its two- to three-member work crews beginning in early 2016.

After testing a few different devices, management chose the system that delivered the smoothest operation and gave technicians the best user experience. The rollout delivered a 20% reduction in software licensing costs by enabling the company to purchase one tablet device for each maintenance team, rather than a license for each individual.

Early on, Invenergy decided to establish a local subject matter expert or "super-user" at each site where mobile was introduced. These experts served as first points of

contact for questions or technical concerns before issues were elevated to the company's internal help desk system. This direct contact with an expert, known to front-line maintenance personnel, contributed to a 50% to 70% user acceptance rate within the first year of adopting the new system.

The initial digital rollout has expanded into a broader mobile device management strategy that includes drone inspections for wind turbine blades, safety incident management, expense reporting and internal document control.

To learn more, visit octave.com

Business results and efficiencies

- Replaced hard copy files with more accurate, accessible digital records
- Saved 15 minutes per technician per day, for an annual financial saving of \$625,000
- Reduced software licensing costs 20%
- Earned 50% to 70% user acceptance in the first year of operation

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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