



WindESCo's Swarm™ Wake Steering Validated by DNV: Delivers a 2.2% AEP Increase, Outperforming Industry Benchmarks

BURLINGTON, MA, UNITED STATES, April 29, 2025 /EINPresswire.com/ -- WindESCo, a global innovator in wind energy optimization, has announced the successful completion of a third-party validated measurement campaign of its Swarm™ wake steering solution at an onshore wind plant for a Global IPP. Comprising 10 turbines, the site served as a testbed for evaluating Swarm's industry-leading cooperative control capabilities combining proprietary wake steering and online static yaw misalignment correction — and the results exceeded expectations.

Data collected during the measurement campaign, where toggling was used to alternately switch the Swarm on and off, were submitted to DNV, a world-renowned independent assurance provider, for rigorous analysis. DNV confirmed that Swarm's model-based wake steering approach delivered a 2.2% increase in Annual Energy Production (AEP) while maintaining system availability above 99%. Additional analysis confirmed a 0.5% gain from Swarm's online static yaw misalignment correction. Together, these features provided a total AEP increase of 2.7% — a verified result that significantly outpaces typical optimization offerings in the industry.

"The independent validation by DNV reinforces what we already knew — that Swarm is not only delivering real results, it's raising the bar for what wind optimization should look like," said Mo Dua, CEO of WindESCo. "By enabling turbines to work cooperatively, we're helping operators tap into new levels of performance and profitability."

"As an operator, we're constantly seeking innovative ways to maximize energy production without adding complexity or downtime," said an Asset Manager for the Global IPP. "The fact that Swarm delivered a 2.7% AEP increase — verified by DNV — and is now running full-time on our site is a testament to its value. We see real potential for Swarm in the industry."

Setting a New Standard in Wind Optimization

The wind industry is currently facing estimated annual losses of €25 billion due to wake effects — a figure projected to worsen as wind plants grow in density and scale. Without effective mitigation, these losses continue to erode the economics of wind energy production.

Swarm addresses this issue by transforming wind turbines from isolated machines into a dynamic and intelligent network, enabling real-time coordination to mitigate the wake effect and optimize performance across the entire plant. Swarm continuously adjusts turbine yaw positions

in real time, leveraging wind, atmospheric, and operational data to deliver industry-leading AEP gains of up to 3%.

With over 2.7 million turbine hours of autonomous operation, Swarm's proprietary optimization approach delivers independently verified performance gains that surpass what is typically seen from traditional optimization tools, firmly establishing it as the leading solution in its class. Proven safe through extensive field testing and validation, Swarm is cybersecurity compliant and engineered for seamless integration and broad OEM compatibility. Its scalable architecture supports real-time system monitoring, making it ready for secure, widespread deployment across global wind fleets.

For more information on how Swarm is helping wind operators combat wake losses and unlock greater AEP, visit www.windesco.com.

About WindESCo:

With projects in over 19 countries, WindESCo provides best-in-class solutions for asset health and performance optimization across the entire wind asset lifecycle.

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