

## EC&R and GE: A Power Up Story

### EXECUTIVE SUMMARY

In 2013, GE Renewable Energy launched the PowerUp Platform, powered by Predix™, to help wind developers get more power from their existing wind fleet. E.ON Climate and Renewables (EC&R) North America partnered with GE to PowerUp their fleet and, after one year, is seeing incredible results.

### THE CHALLENGE

EC&R was experiencing an unfavorable 30% design margin due to underutilized wind turbines. They also calculated that over-estimating wind conditions was resulting in energy losses of 10% annually. Analyzing tens of thousands of data points captured on a wind farm each second required powerful analytics. A one percent increase in Annual Energy Production (AEP) translates to an approximate \$2,500 value per year. The potential AEP increase for EC&R is the equivalent of adding 10 more turbines to their fleet.

*“There’s nothing more significant to our business than the actual wind itself. Being able to harness that wind, even a little bit has massive implications for our bottom line.”*

- Patrick Woodson, CEO of EC&R North America

### THE SOLUTION

PowerUp is a part of the GE brilliant wind platform, which harnesses the power of the Industrial Internet to analyze tens of thousands of data points on a wind farm each second. This leads to higher power output, increased service productivity and the creation of new revenue streams for customers.

The PowerUp solution architecture combines operational/configuration data, historical data and real-time data to enable estimation/forecasting, monitoring and evaluation. Customer value analytics, mechanical load analytics and energy prediction and forecasting provide insights into asset availability and reliability and asset and operational efficiency.



## RESULTS

After partnering with GE in November 2013 to upgrade 469 of their 1.5-77 turbines with PowerUp, EC&R has seen tremendous growth in its output, announcing an increase of 4% AEP in the first year. EC&R now have over 1,400 turbines powered by PowerUp and have realized up to 20% more profit. “PowerUp is allowing us to produce energy levels we’ve never seen before,” Woodson

said. “I think in the end, we ended up with a great product that will be great for both sides.”

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## ABOUT THE INDUSTRIAL INTERNET CONSORTIUM

General Electric is a founding member of the Industrial Internet Consortium. The Industrial Internet Consortium is a global public-private organization of over 190 members, formed to accelerate the development, adoption and wide-spread use of interconnected machines and devices, intelligent analytics, and people at work. Founded by AT&T, Cisco, General Electric, IBM and Intel in March 2014, the Industrial Internet Consortium catalyzes and coordinates the priorities and enabling technologies of the Industrial Internet. Visit [www.iiconsortium.org](http://www.iiconsortium.org).

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