

Wind Plant Wake Management

Introduction

GE introduces wind plant wake management, the first farm-level application in GE's Brilliant wind platform. Brilliant harnesses the power of the Industrial Internet to drive higher farm output, improve services productivity, and create new revenue streams for customers.

Wind plant wake management is a controls application which reduces wake losses. Wake losses occur when a velocity deficit created behind a turbine rotor reduces the wind available at downwind turbines, lowering plant-level energy production.

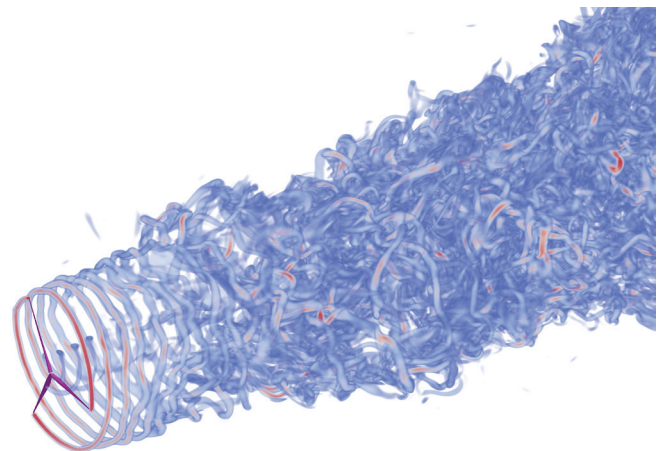
Technical Description

Utilizing advanced algorithms and control tools developed at GE's Global Research Center, wind plant wake management integrates data from turbine-level and plant-level controls with real-time wind characteristics and micrositing information, then adjusts individual turbine operational parameters such as pitch angle, tip speed ratio, and rotor speed in order to reduce wake losses and increase plant level energy output.

At Your Site

The increase in annual energy production from wind plant wake management is site dependent, but will typically range from 0.5%-2%.

Wind plant wake management is intended to operate alongside existing wind plant control platforms and will not require hardware changes for sites with existing SCADA servers.



Example of turbine wake effect



imagination at work