How SCADA systems have developed from wind park regulation to complex Power to X environments

SCADA International is working at the forefront of the renewable energy sector. Together with Jan Lindholt, Thomas Bagger founded SCADA International in 2006. His expertise from working at Vestas, first as a SCADA technician and later as a system engineer in R&D, gave him key insights into the industry and OEMs' needs. Now, 15 years later, the developments within SCADA have skyrocketed into automation and more intuitive solutions than ever before.

Operating a wind turbine or a fleet of wind turbines requires more data than ever. Innovations within the industry have dropped the price of green renewable energy considerably. This drop in price for the consumer necessitates optimization and error prevention, according to Thomas Bagger; "Before, you could settle for just getting a text whenever something went wrong in the wind park. The system could tell you if there was a fault, but not more than that."

"An increased number of renewable production units has raced the whole area of power regulation. The instability of the power units increases the focus on balancing and stabilizing the grid in peak periods. To stabilize the grid and regulate power, a speedy reaction time is essential. Wind turbines, today, take seconds and not minutes to regulate, and you have to make decisions on more significant amounts of data," Thomas Bagger explains.

Data is crucial when trying to optimize a fleet of wind turbines. Several innovations have made it possible to optimize and regulate a park based on more – and perhaps more importantly – accurate data.

"There is so much energy in the market now, especially at certain periods that asset managers need to optimize production and prevent errors. To do that, you need data. You can no longer accept missing or wrong data. Now, valid data is essential. Asset management is a bigger part than before, and you need accurate data to secure the right return on investment for your fleet," Thomas Bagger continues.

The considerable developments in SCADA systems have also created more opportunities to use wind turbines when they are not producing to the primary power grid. PtX utilizes the energy from the renewable assets when the parks are not supplying power to the grid to power other operations, by converting the energy to hydrogen or ammonia. If you ask the experts, they will tell you that one of the most promising use is converting energy to hydrogen.

“Now wind turbines are sometimes taken out of operation. PtX could solve some of these challenges because you can utilize the production better by making hydrogen as an example. Right now, we are wasting green energy, and many consumers are concerned about this,” Thomas Bagger concludes.

Thomas Bagger
CEO, SCADA International

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