Top quality measurement and control hardware and software

Jörg Scholz

PES has an exclusive interview with Jörg Scholz, CEO, Gantner Instruments Environment Solutions GmbH. The solar/PV industry is expanding and his company has just the solution for measurement and control of all parameters of utility scale PV power plants. They are already in Egypt and Australia. He is optimistic and confident about the future.

PES: Welcome back to PES Solar/PV magazine. Thanks for talking with us. For the benefit of our newer readers, would you like to begin by explaining a little about the background of Gantner Instruments Environment Solutions and the importance of the Solar/PV industry to you?

Jörg Scholz: Gantner is a market-leading full solution provider for utility scale PV power plants. We develop and produce hardware and software for measurement and control of all required parameters in such plants. All solutions and services are 'Made in Germany'. Our web portal software is designed to manage even the large size PV plant portfolios. All these solutions are supported by our O&M activities giving us the possibility of offering high quality products worldwide with local service. While our offerings are tailored for

the PV industry, they are also very pertinent to other energy sectors.

PES: Are you still experiencing growth in this market?

JS: Yes, we are experiencing significant growth in PV in most geographical regions. Thanks to the decreasing costs of solar energy production and an increasing global awareness of the advantages of clean energy, we are confident that this trend will continue for several years. Now application of solar energy is not only justified by its advantages to the environment, but it has also become economically competitive.

PES: We have been hearing about your success in Egypt and we would love to know more about it. How did it begin? How has it grown?

JS: We implemented our first project in Egypt in the Benban region with German EPC ib vogt. After successful, on schedule, commissioning of the first 64.1MW solar power plant in December 2017, we were repeatedly chosen as the supplier for the complete monitoring system for the next three plants in the Benban complex with a total of 166.5MW. For these plants we provided Q.reader as both data logger and power plant controller, dc combiner boxes, meteo stations and Gantner.webportal. Commissioning of the first power plant was performed onsite by our engineers. Remote support is provided via a high security connection with help of 'Gantner. RAS'. Gantner.RAS is a remote access service for global fleet management of onsite DAQ devices.

PES: Please could you tell us about the datalogger Q.reader monitoring and control solution?

JS: Q.reader is a datalogger which performs logging and control of all required PV plant information: string level current and voltage, inverter data, meteorological data from weather stations, grid measurements and other state variables e.g. switch gear and transformer status. In parallel it also acts as a power plant controller PPC for the grid operator.

Its accurate data acquisition and control concept is inverter independent and gives feedback about losses due to inverter malfunction, soiling, shading, PV module degradation etc. The Linux based platform can control up to 100MW plants with just one controller and fulfils all international requirements.

PES: Is this used for the domestic market, utility scale market or both and what are the benefits to the customers?

JS: Due to its scalability the monitoring and control based in the Q.reader datalogger can be applied to both the commercial and utility scale market. The data acquisition system grows with the plant requirements. The distributed Q.series measurement modules can be integrated at any time. It is possible to configure the monitoring solution individually, with auto-alarming via email or SMS, as well as with local arithmetic functions provided.

In Germany we are a leading supplier for ground mounted PV and especially valued for our knowledge in the grid integration for the several 100 utilities in Germany with their absolutely different requirements for control and communication.

PES: Does your solution provide support for grid connected solar systems with export limitations?

JS: Yes, we offer an advanced easy-to-configure web-based control solution for grid connected systems with export limitations. Grid feed-in management has become an important topic for properly connecting PV systems to the power grid.

A power analyser measures the total power at the grid connection point and compares it with the adjustable set point of the controller in a closed control circuit to ensure the precision and the setting times defined by the grid operator, including failsafe operation. Features such as direct marketing, reactive power supply and zero export can be provided.

PES: We would also love to know more about Gantner's latest string monitoring devices: 'string.bloxx'.

JS: Our latest 'string.bloxx' has been designed for 1500V voltage and up to 32 PV strings can be connected. Using DC shunts the string.bloxx provides current measurements typically 10 times more accurate and not susceptible to temperature variance.

PES: Why are these so popular in the industry?

JS: The achieved high accuracy measurements contribute to better understanding of the plant performance. In addition string voltage, up to 1500V and DC power on every string can be continuously monitored ensuring maximum system productivity.

PES: Could you tell us about your cloud based software and is it currently widely used?

JS: For worldwide data access and PV power plant monitoring portfolios, all information collected by the Q.reader datalogger is perfectly integrated in the gantner.webportal. It is used to collect a huge amount of data, about 5.000 channels per MWp and minute and assists the user

to generate reliable information about the recent status of the plant.

All data is stored in the cloud and accessible via secured connection also from mobile devices with HTML5 and W3C. Gantner.webportal is used by several leading marked players and the installed power of their typical portfolios is about 500-1000MW.

PES: What advantages does this bring to the end user in terms of cost and time saving?

JS: The main objective of gantner.webportal is to support the customers in their daily tasks in order to reliable reach his ROI targets. The intelligent traffic light system and sophisticated alarming features save plenty of time in the O&M day to day routines; important features preventing the system from having false alarms, the integration of logics to take into account e.g. AIO (angle of incidence) and shading angles.

The Gantner.webportal contributes to the reduction of risks for investors and provides them with reliable information about O&M, track record and plant performance, as well as the ability to control the plant. Optimised PV production leads to increased asset value. The Gantrner.webportal has numerous analysis functions and it is possible for example, to distinguish the main reasons for production losses, such as hardware failures, potential induced degradation on panels (PID), temperature influence, soiling. Visualisation of all measured values down to string level is provided as well as comprehensive and individually configurable report functions.

PES: Do you have any new developments in the pipeline that you are able to share with us?

JS: On hardware site we are coming up with new data logger / PPC to fulfil the requirements for commercial rooftop systems, concerning both expected price levels and new requires features, such as zero feed in. We are permanently working to further improve our DC and AC combiner boxes.

We have newly engineered DC combiner boxes for the Australian market, with three parallel string inputs, 50A fuses and DC main switches compliant to Australian standard AS5033. Additionally we offer new AC Combiner boxes for 800V AC and 1500V DC anti-PID compatibility.

We are about to increase the geographical areas covered by us to Eastern Europe and also extend our existing solutions to plants with zero export requests. We continuously strive to optimise the service around our products, e.g. by providing a professional documentation of our individual solutions during the product development process.

PES: Where do you currently operate, where are the key markets for Gantner and are there are any areas, geographically speaking, that you would like to break in to?

JS: Operating world-wide, we are currently a leading supplier for monitoring solutions in Australia and Egypt, both of them among the recent fastest growing markets. In the German market we are supply to new PV projects on a regular basis. In 2018 we are seeing significant growth potential for our solutions in several Eastern European markets and we have also successfully started selling systems in the Netherlands and Denmark.

PES: What is the single biggest challenge facing the market today?

JS: The market is very dynamic, with permanently changing requirements due to fast technological progress. There is high awareness for continuously needed research and development efforts. For instance the switch from system voltage from 1000V to 1500V requires new hardware and software development.

Furthermore product prices need to be adapted according to the recent price pressure in the market, but in parallel a high quality product is mandatory in our target projects.

Gantner instruments focus is to adopt this challenge without reducing the legendary Gantner quality, which it set in 1982.

PES: Looking ahead into 2018 and beyond, what trends and/or changes are you anticipating in the market and why?

JS: New markets in the Middle East and North Africa will play an important role in the utility scale PV market.

From the technical point of view we can expect the final breakthrough of plants with 1500V system voltage. Not forgetting the Importance of reliable PV plant grid integration, another important trend, which can be solved professionally with the help of our control equipment.

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