Cardiff, May 21, 2018

An overview of the zenon Energy Day:

Energy Day 2018

At Microsoft’s British headquarters in Thames Valley Park, Reading, software provider COPA-DATA, invited leaders from the UK’s energy industry to its zenon Energy Day 2018. The event, which was held on Tuesday 24, April, welcomed industry experts and energy suppliers to address the current challenges the sector is facing — renewable generation, substation automation, IoT and cyber security.

Introduced with a welcome speech from COPA-DATA UK’s managing director, Martyn Williams, the day encompassed a series of talks from industry experts. Speakers included Ian Banham, IoT Technical Sales Lead UK for Microsoft, Chris Dormer of systems integrator, Capula and Jürgen Resch, Energy Industry Manager at COPA-DATA.

Preparing for renewables

Only 24 per cent of the UK’s electricity comes from renewable sources — a relatively low figure compared to some of our European neighbours. However, the percentage is growing. In 2000, Britain’s renewable capacity was 3,000 MW, and rose eleven-fold by the end of 2016 to 33,000 MW.

To prepare for the impending challenges for this market, Jürgen Resch’s presentation discussed how software can alleviate some of the common questions associated with renewable energy generation, including the growing demand for energy storage.

“Energy storage is often used in combination with renewables because renewable energy is volatile and fluctuating,” explained Resch. “In Korea, the government is pumping $5 billion dollars into energy storage systems. In fact, every new building that is built in Korea gets an energy storage battery fitted into the basement.”

BMW’s battery storage farm in Leipzig was also presented as an example. The facility, which uses COPA-DATA’s zenon as the main control centre system, uses 700 high-capacity used battery packs from BMW i3s and could also provide storage capacity for local wind energy generation.

Moving onto specific issued related to wind generation, Resch discussed the potential challenge of reporting in a sector reliant on unpredictable energy sources.

“Reports are particularly important in the wind power industry,” continued Resch. “Typically, owners of wind farms are investors and they want to see profits. Using software, like zenon Analyzer, operators can generate operational reports.

“These reports range from a basic table with the wind speeds, output of a turbine and its associated profit, or a more sophisticated report with an indication of the turbines performance against specific key performance indicators (KPIs).”

Best practice for substation automation

Following the morning’s keynote speeches on renewable energy, Chris Dormer of Capula, presented the audience with a real-life case study. The speech discussed how smart automation helped to address significant issues related to the critical assets of the National Grid’s substations, where Capula was contracted to refurbish the existing substation control system at New Cross.

“Like a lot of companies that have developed, grown and acquired assets over the years, energy providers tend to end up with a mass mixture of different types of technology, legacy equipment and various ways to handling data,” explained Dormer. “For projects like this, the first key evaluation factor is choosing control software with legacy communication. We need to ensure the software can talk to both old legacy equipment in substations as well as modern protocol communications, whilst also ensuring it was scalable and compliant.

“The National Grid will make large investments into IEC 61850 compatible equipment, therefore for this project, we needed an IEC 61850 solution. Any system we put in, we want to support it for the next 25 years. Everyone is talking about digital substations right now, but there are not that many of them out there. That said, we need to prepare and be ready.”

The case study, which was a collaborative project with COPA-DATA, was recognised at the UK Energy Innovation Awards 2017, where it was awarded the *Best Innovation Contributing to Quality and Reliability of Electricity Supply*.

“Our collaboration with COPA-DATA allows us to address modern energy challenges,” explained Mark Hardy, Managing Director of Capula upon winning the award last year. “It helps drive through the best value for energy customers.”

Cyber security

“Raise your hand if you consider cyber security to be a benefit?” Mark Clemens, Technical Product Manager at COPA-DATA asked the audience during his keynote speech on cyber security. “Now, raise your hand if you consider it to be a burden?”

Clemens’ question provided interesting results. Numerous attendees kept their hands raised for both questions, giving an insight into the perception of cyber security for those operating in the energy industry — a necessary evil.

“A cyber-attack on our current infrastructure could be easy to execute,” continued Clemens. “95 per cent of communication protocols in automation systems don’t provide any security features. For those that do provide security, the mechanisms are often simply bolted-on.”

Clemens continued to explain how substation design can strengthen the security of these sites. He suggested that, despite living in the era of IoT, energy companies should limit the communication between devices to only those that are necessary. The first step he suggested was to establish a list of assets, including any temporary assets like vendor connections and portable devices.

“There are lots of entry points into a substation, not only through the firewall but through vendors and suppliers too. This doesn’t have to be intentional but could be the result of a mistake. For example, if an engineer is working in the substation and believe they are testing in simulation mode, but they are not, it could cause detrimental problems.”

Collaborating with Microsoft

Microsoft’s UK IoT Technical Sales Lead, Ian Banham, began the afternoon's presentations. His speech focused on the potential of cloud usage for energy companies. When asking attendees who had already invested in cloud usage, or planned on doing so, the audience proved to be a 50:50 split of cloud enthusiasts and sceptics.

“IoT is nothing new,” stated Ian Banham, IoT Technical Sales Lead at Microsoft. “There’s plenty of kit that does IoT that is over 20 years old, it just wasn’t called IoT then. That said, there’s not a great deal of value in simply gathering data, you’ve got to do something with that data to realise the value from it.

“The change in IoT is the way the technology has developed. That’s why we are encouraging our customers to work with companies like COPA-DATA. They have done the hard work for you because they have been through the process before.”

Banham explained how Microsoft’s cloud platform, Azure, could be integrated with COPA-DATA’s automation software, zenon. In fact, COPA-DATA’s partnership with Microsoft is award-winning, COPA-DATA having won Microsoft Partner of the Year in the IoT category in 2017.

If you would like more information about COPA-DATA’s software solutions for the energy industry, details about zenon can be found online. For further information, contact COPA-DATA’s UK team on +44 (0) 29 2032 9175.

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