



zenon

by COPA-DATA



Utility and Industrial Scale Energy Automation

A Software Perspective



COPA-DATA

Your Trusted Solutions Partner for the entire Energy Journey

zenon by COPA-DATA delivers a comprehensive suite for energy system management, engineered for utility and industry energy projects globally. This ensures seamless progression from generation to consumption. zenon equips you with cutting-edge tools and knowledge to enhance efficiency and sustainability in your operations. COPA-DATA stands as your ally in future proof energy system automation, in full compliance with evolving standards. Trust in our proficiency to power your energy initiatives towards a greener tomorrow.

- ▶ COPA-DATA has been active in the energy industry for more than a quarter of a century.
- ▶ With over 30,000 worldwide installations in power generation, transmission, and distribution.
- ▶ Leveraging our expertise, we offer a strategic focus and robust partnerships. Our global reach and personalized local attention guarantee the delivery of sophisticated solutions to every client.



zenon Energy Edition

zenon Energy Edition is the industry-specific HMI/SCADA solution from COPA-DATA for power plant automation and substation automation, control center applications, Solar PV, and wind park management. The drivers developed by COPA-DATA guarantee adherence to international standards such as IEC 61850/IEC 61400-25, IEC 60870-101, -104, and DNP3. This is the perfect solution to deliver full monitoring, control and connectivity.

Various energy companies around the globe utilize zenon's advanced features and capabilities helping them to realize future proof energy solutions and streamline their management processes.



GE VERNOVA



Substation Automation with zenon



Substation management faces key challenges: scaling infrastructure to meet growing energy demands, aligning with updated industry standards, bolstering cybersecurity against rising threats, and ensuring connectivity across various devices and assets. Addressing these challenges with scalability, compliance, security, and interoperability is crucial to the resilience of energy systems.



OUR SOLUTIONS

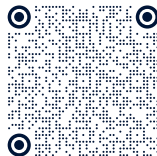
zenon provides cutting-edge solutions for substation operation at any level and in any area of the grid:

- ▶ **Substation HMI** – Reliable operation of substation assets, including detailed control modes and safety features.
- ▶ **IEC 61850 Digital Substation** – Full support of IEC 61850 features during design, engineering and operation.
- ▶ **Substation Gateway** – Robust connection of your substations to regional and national control centres.
- ▶ **Utility Control Room Applications** – Remote management of substation fleets.

YOUR BENEFITS

- ▶ **High solution scalability**, ranging from small and cost-effective packages to large substations and supervisory control room SCADA.
- ▶ **Advanced situational awareness** with detailed command and event processing, operated through an intuitive user interface.
- ▶ **Device and vendor independence** due to extensive protocol support (300+ drivers).
- ▶ **Comprehensive support** for Digital Substation projects with **IEC 61850**.
- ▶ **Integrated protocol gateway** – DNP3, IEC 60870, IEC 61850, SYSLOG, MODBUS and many more.
- ▶ **Strong cyber security**, such as IEC 62351 encryption and authentication support, and compliance with IEC 62443-4-1 compliant Secure Development Lifecycle Process (SDL).

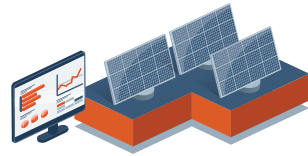
Know more
about zenon:



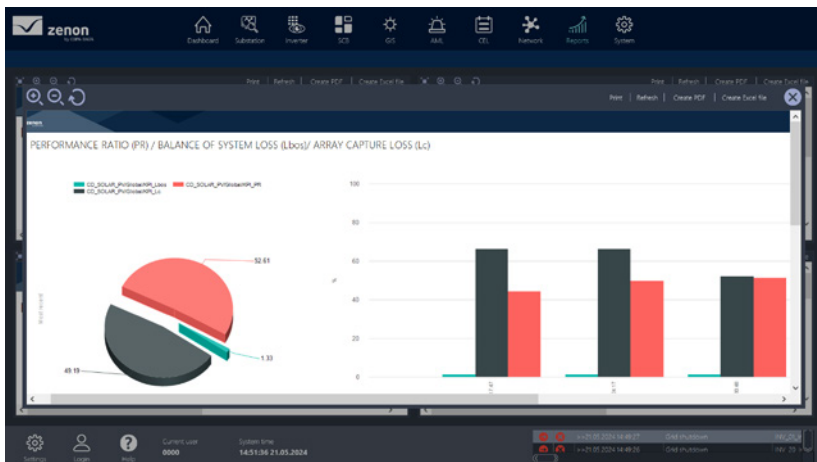
IEC-61850
& zenon:



Solar PV Automation with zenon



The economic operation of utility-scale solar PV plants requires reliable solutions for the management of all related assets and resources.



OUR SOLUTIONS

zenon helps you to automate and manage your solar PV plants with the highest synergy:

- ▶ **Solar PV SCADA** – Bring all your assets together in a fully integrated O&M solution.
- ▶ **PV Hybrid Solutions** – Combine your solar generation with local assets like battery storage or specific loads.
- ▶ **Switchyards and balance of plant (BoP)** – Create a unified solution by integrating auxiliary assets.
- ▶ **Reporting and Advanced Analytics** – Leverage data for strategic performance optimization.

YOUR BENEFITS

- ▶ **Ensure your resources are fully utilized** and quickly resolve inefficiencies.
- ▶ **Improve your solar PV system performance** strategically, following IEC 61724 guidelines.
- ▶ **Satisfy stakeholders** with relevant insights, suited to their needs.
- ▶ Simply **integrate with higher-level systems**, such as network operators, aggregators (VPPs) or trading platforms.

Solar PV
with zenon:



Try zenon
for free:



Energy Storage Systems (ESS) with zenon



Energy storage technologies, especially battery energy storage systems, can support the technical and economic operation of energy systems in many ways. zenon helps you utilize ESS precisely, making it a valuable supplement for modern and sustainable energy solutions.



OUR SOLUTIONS

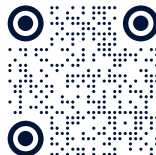
Rely on zenon for the integration of large-scale ESS:

- ▶ **Independent HMI/SCADA** – Visualize and control all storage assets in great detail, locally and from remote sites.
- ▶ **Hybrid Solutions** – Flexibly combine your distributed generation and loads with battery storage.
- ▶ **Switchyards and balance of plant (BoP)** – Create high synergy by integrating auxiliary assets.
- ▶ **Reporting and Advanced Analytics** – Leverage data for strategic performance optimization.

YOUR BENEFITS

- ▶ **High performance and scalability**, from on-site solutions to central control rooms and cloud-based solutions.
- ▶ **Hardware independence and compliance** with any battery technology, battery management systems and inverter models.
- ▶ **Effective operations management**, through intuitive HMI and comprehensive asset integration.
- ▶ **Engineering simplicity** through configurable functions, templates and automatable engineering.
- ▶ A multitude of **integrated cyber security** measures to support “defense in depth” architectures.

**BESS
Whitepaper:**



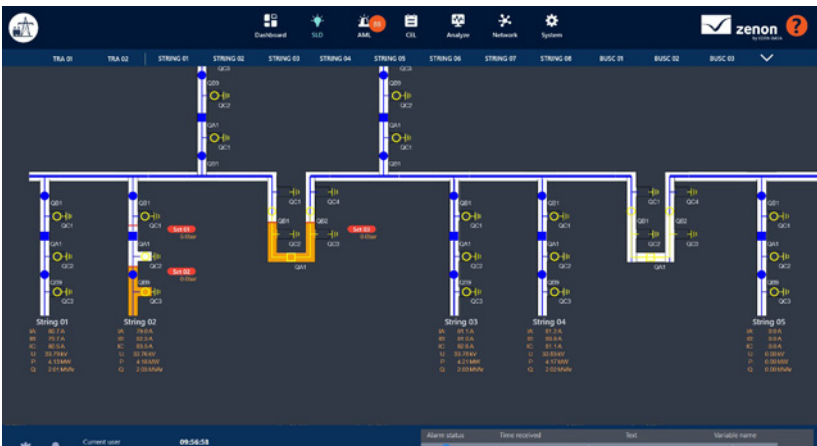
**See how it
works with
BESS Webinar:**



Wind Power with zenon



Onshore and offshore wind power represent an important contribution to the carbon neutral energy transition. zenon helps you to reduce risk and complexity with highly integrative solutions.



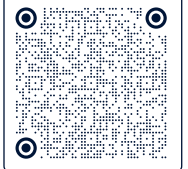
OUR SOLUTIONS

- ▶ **Wind Farm SCADA** – Realize your independent control room solution for professional fleet management.
- ▶ **Wind Park Control** – Steer your generation precisely according to given grid codes and utility requirements.
- ▶ **Onshore and Offshore Substations** – Utilities can rely on a robust and versatile solution to control and monitor substation components.
- ▶ **Offshore Platform Management** – Handle the operation and monitoring of different sub-components in one integrated solution.

YOUR BENEFITS

- ▶ **Efficiency and Integration** – zenon helps you to access and harmonize data from any OEM solution. Utilize real-time and historic data from diverse data sources, such as IEC 61400-25 or OPC-UA and many more in a holistic park management solution.
- ▶ **Control and Compliance** – It provides advanced command processing, scalable solutions for various component sizes, and ensures operational compliance through enhanced control features and legally mandated archival functions.
- ▶ **Monitoring and Data Insights** – Ensures real-time monitoring through prompt maintenance reporting and offers extensive data visualization and reporting capabilities for effective analysis and decision-making.

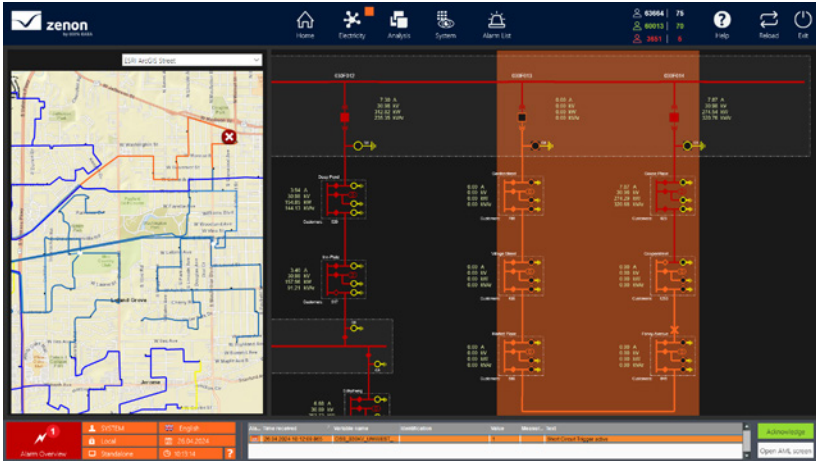
Case study:



Network Control Centers with zenon



Get your control centres ready for the challenges of the next generation energy grid.



OUR SOLUTIONS

- ▶ **Multi-Utility Network Control System** for the integrated management public supply infrastructure, such as electrical grids, water and wastewater, or gas networks.
- ▶ **DSCADA** (Distribution SCADA) to manage and control electric medium-voltage grids, based on advanced topological functions.
- ▶ **Infrastructure Asset Monitor**, for detailed visualization and reporting of equipment conditions in regional and national control centers.
- ▶ **EMS-Fallback System**, safeguarding the continuous availability of your distribution network in case of primary EMS system outages.

YOUR BENEFITS

- ▶ Harness zenon's SCADA to **streamline monitoring, control, and standardization**, boosting smart oversight in energy and infrastructure.
- ▶ **Enhance asset integration** and maintain operations seamlessly with zenon's distribution and infrastructure management.

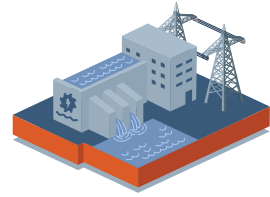
Success Story:



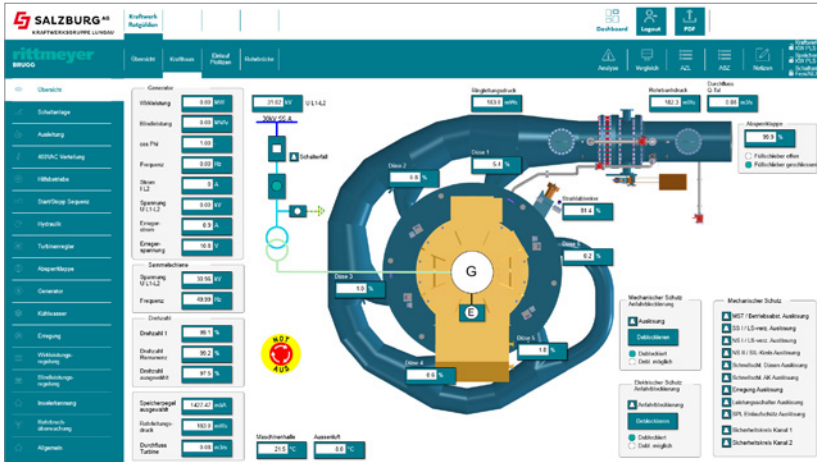
Read more:



Hydro Power with zenon



Keep your hydro-electric power plant under control.



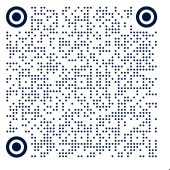
OUR SOLUTIONS

- ▶ **Local Asset HMI** – Use tailor-made visualization solutions for dedicated plant components, such as turbine governor, excitation system, or unit control.
- ▶ **Control room SCADA** – Maintain situational awareness over all aspects of your plant and control your assets safely.
- ▶ **Grid Connection Substation** – Control switching equipment and substation assets in one integrated environment.
- ▶ **Fleet Management** – Optimize operation and manage your distributed plants, infrastructure and legacy assets in a central operations and monitoring center.
- ▶ **Plant Historian and Reporting** – Leverage historic data for benchmarking and asset performance optimization.

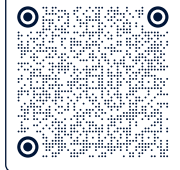
YOUR BENEFITS

- ▶ **Streamline process automation** alongside energy production for scalable control from local interfaces to central oversight, with effective alarm and maintenance responses.
- ▶ **Enable swift access to archives** for analysis and reporting, boosting control room efficiency and scalability.

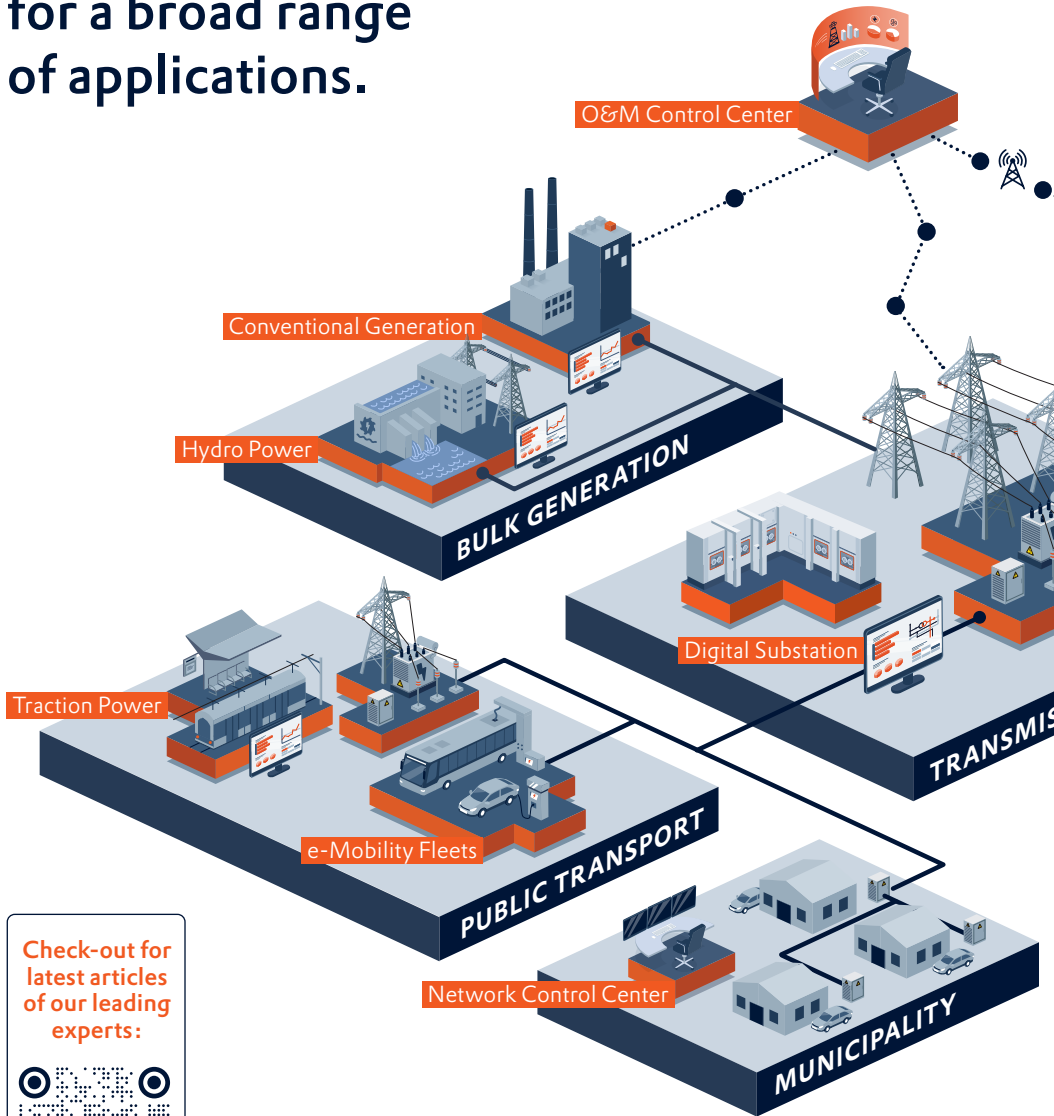
Success Story here:



Learn how they did it:

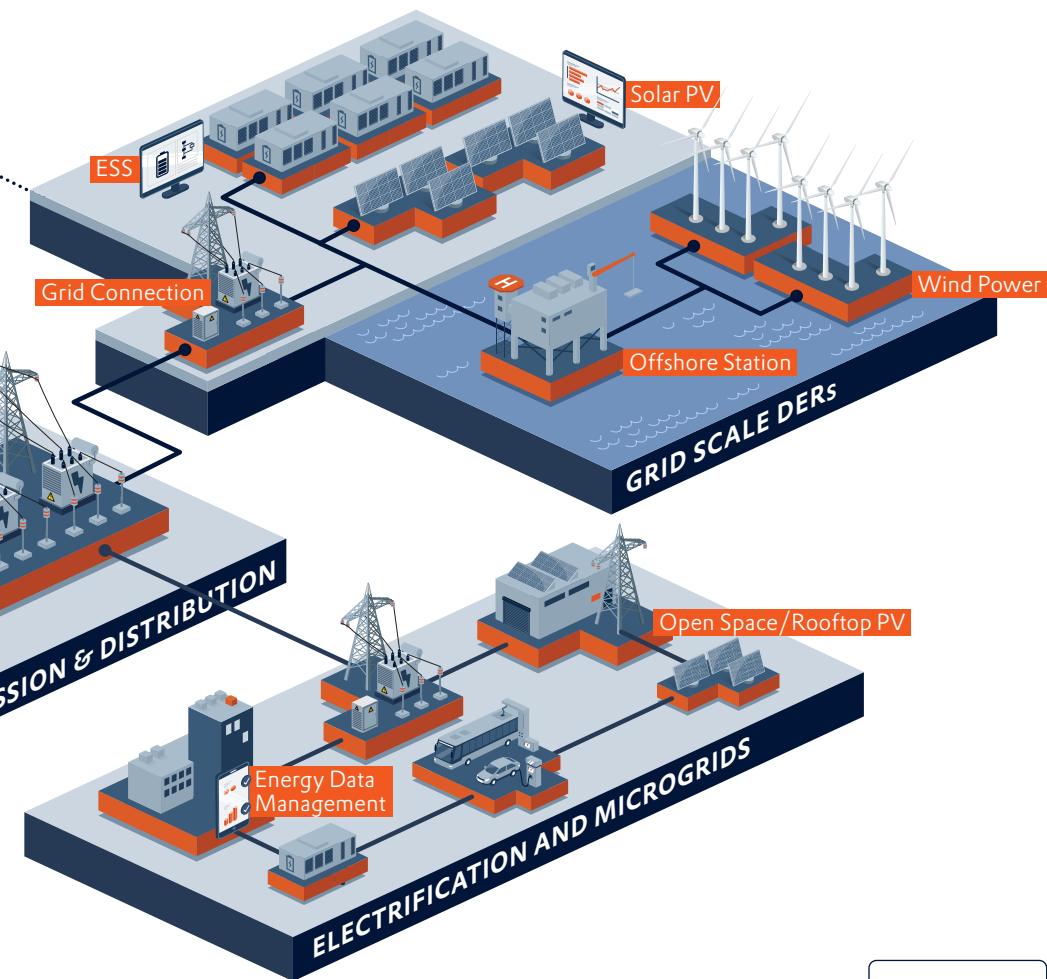


The smart solution for a broad range of applications.



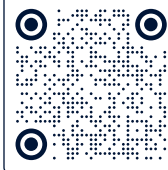
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of our leading
experts:





The zenon difference:
One software platform.
Many solutions.

Explore now:





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**One software platform.
Many solutions.**

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