zenon
by COPA-DATA

zenon.
Industrial software for the Net Zero transition

Why Net Zero

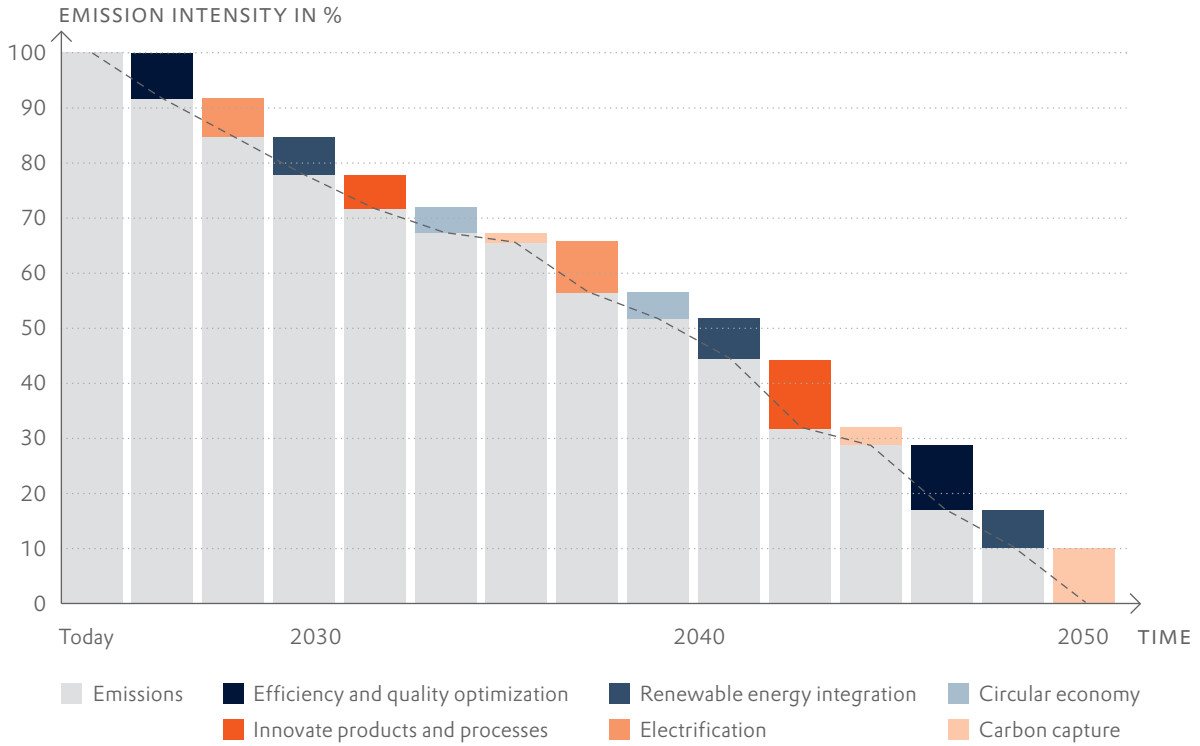
The world is facing multiple crises. The effects of climate change and rising geopolitical tensions have powerful real-world impacts on industrial businesses, including supply chain disruptions, workforce shortages, and high energy costs.

The United Nations Sustainable Development Goals (SDGs) provide a framework for addressing these challenges. Evidence tells us that the primary cause of the alarming global climate trends, such as ocean warming, extreme weather events, and the rising risks of flooding and wildfire, is the increase of greenhouse gas emissions (GHG) in the atmosphere. These emissions can be clearly traced back to the use of fossil fuels, including in manufacturing industries. Achieving the global Net Zero target is essential for sustainable development and creates an urgent need to transition to clean energy.

In response, industries must transform continuously, innovating products and processes to ensure resilience and sustainability. The circular economy mindset is gaining prominence, driven by initiatives like the EU's Green Deal, which requires climate-friendly practices. Consumers increasingly prefer environmentally responsible products, creating a powerful driver to accelerate change.

COPA-DATA is committed to sustainability by investing in decarbonization and demonstrating how its zenon software platform is an enabler for Net Zero activities. It empowers industries through automation and digitalization. COPA-DATA invites you to develop "sustainability solutions" using transformative software technology, aiming to boost competitiveness while achieving our global Net Zero goal.

THIS IS WHAT YOUR PATH TO NET ZERO COULD LOOK LIKE:



Transforming towards Net Zero: the decarbonization journey

Embarking on a decarbonization journey is a transformative process that requires strategic planning, collaboration, and technological innovation. As industries strive to achieve Net Zero, they must navigate a complex landscape of challenges and opportunities. Here's how you can start and progress your journey towards a carbon-neutral future.

Your decarbonization path starts by assessing your current carbon footprint, identifying areas for improvement, and setting clear targets for reducing emissions. The Greenhouse Gas Protocol offers a useful blueprint here, defining the now widely used categorization of Scopes 1, 2, and 3. This includes evaluating energy consumption, material usage, and supply chain impacts. Developing a comprehensive action plan that works across all three scopes in alignment with your business strategy is crucial for success. Achieving Net Zero requires collaboration across your manufacturing organization, from sustainability managers to energy specialists and operational excellence teams. Together, they'll need to consider several key decarbonization concepts while taking action:

- **Efficiency and quality optimization**
  For manufacturers, this means enhancing energy and material efficiency while maintaining production quality. They must reduce losses and downtime and optimize processes to minimize waste and maximize output.

- **Circular economy**
  The main goals are reduce, reuse, recycle. Implement circular economy principles by reducing waste, preserving resources, and using regenerative materials. This includes prolonging equipment lifecycles through modularity and repairability.

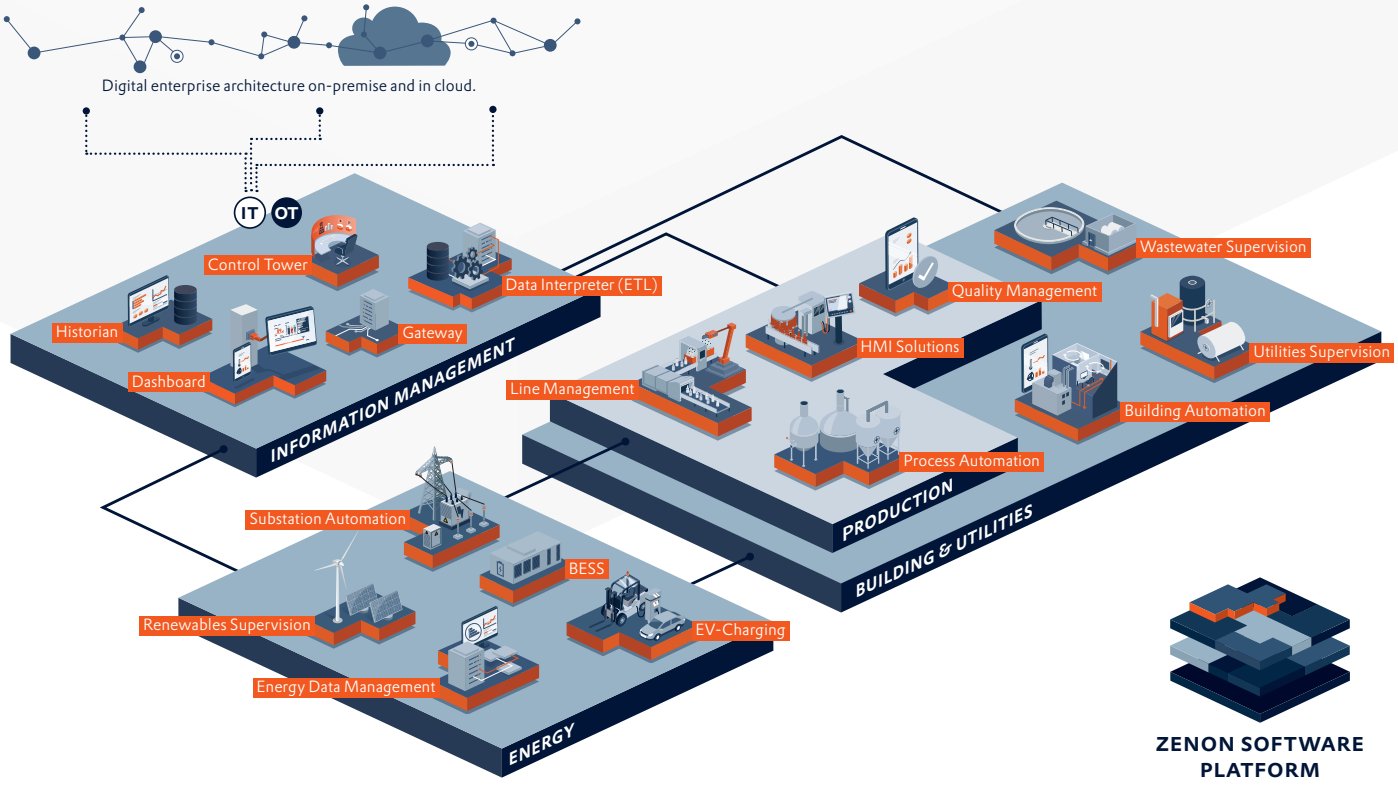
- **Innovate products and processes**
  Develop new products and processes that are more sustainable. Transition to using materials and equipment with lower carbon footprints, engineer greater flexibility that facilitates innovation, and source more “locally”.

- **Electrification**
  Replace fossil-fuel-powered local systems with electric alternatives. This includes electrifying process heat systems, boilers and machinery by leveraging technologies such as induction heating and advanced heat pumps.

- **Renewable energy integration**
  Power your electrified processes sustainably by transitioning to renewable energy sources, such as solar, wind, and hydroelectric power. This can be achieved through on-site generation or using battery storage to purchase electricity at times of high renewable generation when prices are cheaper and the energy is green.

- **Carbon Capture**
  The focus is on technologies that remove CO_2 from industrial emissions or the atmosphere. Carbon capture, utilization, and storage (CCUS) involves storing or reusing emissions at the source, whereas direct air capture (DAC) pulls CO_2 from the air. Mineralization locks it into rock or concrete. These methods help lower atmospheric CO_2 levels and support Net Zero goals.

- **Regulatory compliance and ESG reporting**
  Ensure transparency and comply with regulations in the three “dimensions” of environment, social and governance with accurate and clear reporting. Provide comprehensive data and show visible commitment.



Software solutions for your decarbonization journey

Your journey towards sustainability goals goes hand in hand with digital adoption. This dual transformation is often called the "Twin Transition". Among the wide range of involved technologies, automation and digitalization play a key role in enabling industries to advance their decarbonization journey. By choosing the zenon software platform, you are empowered to create interconnected solutions, combined in an interdisciplinary manner. Gain the flexibility you need to innovate and achieve your sustainability goals.

DISCOVER HOW ZENON EMPOWERS YOU TO ACHIEVE NET ZERO.

- **Human Machine Interface (HMI)**
  An HMI provides intuitive control and monitoring of industrial processes, ensuring operators can make informed decisions to optimize energy use and reduce waste. It has a direct impact on **efficiency and optimization** since more efficient processes will have a lower carbon footprint. Using the right HMI software enhances machine capabilities and prolongs the machine lifecycle – further decarbonizing your operations.

- **Process Automation**
  Enhancing energy and material efficiency while you maintain production quality is one of the key challenges as you transition to a **circular economy** approach. By automating industrial processes, you gain new opportunities to optimize energy use, increase operational performance, and enable modular production. zenon provides the tools you need to improve processes, minimize waste, maximize output, and reduce losses.

- **Line Management**
  Effective line management enhances production efficiency by streamlining workflows and minimizing downtime. In turn, this reduces energy consumption and emissions. Modular line management offers greater flexibility in production output – facilitating **innovation in products and processes** and shortening time to market. This frees you to develop new products and processes with lower carbon footprints. Choose materials and equipment that support greater flexibility and reduce emissions.

- **Quality management**
  Quality begins with accurate process design, consistent execution, and precise real-time monitoring – enabled by robust recipe management, data acquisition, and quality-focused reporting. These elements work together to reduce waste and rework, while the zenon software platform moreover supports continuous improvement, more efficient material usage, and therefore a reduced carbon footprint.

- **Waste water supervision**
  Water, a precious resource, must be properly treated to ensure that wastewater does not harm the environment. Using zenon for wastewater supervision enables efficient monitoring and control of treatment processes, reducing resource and energy consumption and minimizing environmental impact. By optimizing operations and detecting anomalies in real time, zenon helps you to prevent pollution and ensures compliance with environmental regulations.

- **Utilities supervision**
  Manufacturing utilities are vital to production processes and they often account for a significant share of energy consumption and, therefore, operational costs. Ensuring their reliable availability and efficient use requires precise real-time monitoring and smart analysis of historical data. With this approach, zenon enables continuous optimization, supports cost reduction, and helps maintain high process availability – driving long-term improvements across your operations.

- **Renewables supervision**
  Integrating renewable energy sources like solar, wind, or hydro into your manufacturing operations is a key step toward sustainable production. With zenon, you can seamlessly supervise and manage onsite renewable generation, even as part of your factory microgrid. It enables smart use of battery storage systems. This not only supports cost-effective energy use, it also strengthens your contribution to a greener grid and more resilient manufacturing energy strategy.

- **Energy data management**
  Implementing an energy data management system with zenon is essential for manufacturers to decarbonize their operations. By precisely monitoring and analyzing energy and media consumption in correlation with production data, companies can identify inefficiencies, reduce costs, and minimize environmental impact. This strategic approach supports sustainability goals, enhances operational efficiency, and ensures compliance with ESG standards and regulations.

- **Building automation**
  It is vital to optimize energy consumption in buildings, including by controlling heating, cooling, and lighting systems. By retrieving and analyzing key metrics from devices such as heat pumps, electric vehicles, sun shades, and other components, zenon enables real-time, data-driven decisions for efficient building management. This monitoring helps reduce energy consumption and ensures resources are effectively distributed throughout the building.

- **Plant information management**
  A holistic, normalized data approach to plant information management plays a key role in achieving Net Zero goals in manufacturing. By integrating real-time data across operations and making it accessible to various systems and users, manufacturers can optimize energy use, reduce waste, and enhance efficiency. With zenon, this comprehensive approach enables informed decision-making, environmental reporting, and supports sustainability across the entire production process and beyond.

COPA-DATA's zenon software platform is designed to be flexible and adaptable, allowing manufacturing companies to tailor solutions to their specific needs and evolve their sustainability strategies over time. By leveraging these solutions, industries can accelerate their decarbonization journey while maintaining operational excellence and competitiveness.

zenon: the software platform for sustainability solutions

As industries navigate the "Twin Transition" – digital and green – zenon emerges as the essential software platform, empowering businesses to implement sustainable solutions effectively. zenon supports organizations in achieving their decarbonization goals while optimizing industrial processes.

1. EMPOWERING PEOPLE FOR DECARBONIZATION

Achieving sustainability requires advanced tools and a seamless user experience. zenon provides real-time situational awareness for informed decision making, enhances process operation and adaptability, supports the creation of new sustainable products, manages renewable energy and material flows, and delivers data-driven insights for optimizing efficiency and resource consumption.

2. LEAN IMPLEMENTATION OF INDUSTRIAL SOLUTIONS

zenon enables the rapid and agile deployment of industrial solutions by offering flexible and scalable automation, a robust data infrastructure for seamless information flow, and reduced engineering time with simplified skill requirements. It facilitates an agile transition from proof of concept to full-scale implementation and ensures smooth integration within complex digital ecosystems.

3. A FUTURE-ORIENTED TECHNOLOGY FOUNDATION

Built to last, zenon ensures longevity and adaptability through interoperability and adherence to industry standards. Its modular architecture allows for customized and scalable solutions, while integrated OT/IT structures streamline operations. Advanced cybersecurity measures provide secure and reliable performance, and its compatibility across operating systems guarantees long solution lifecycles.

WHY ZENON?

With extensive connectivity, no-code/low-code development capabilities, and downwards compatibility, zenon stands as a future-proof solution. It ensures seamless integration, adaptability, and efficiency in industrial operations – driving sustainability while enhancing performance. Combining different capabilities across industrial environments guarantees a long and secure solution lifecycle that supports you to achieve your Net Zero goals.

MORE INFO:

See our Customer Magazine: Information Unlimited

See our Blog: Sustainability & Net Zero

See our Website: Software solutions for industrial sustainability

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