Climate-neutral buildings and facilities

Important levers for a credible sustainability strategy

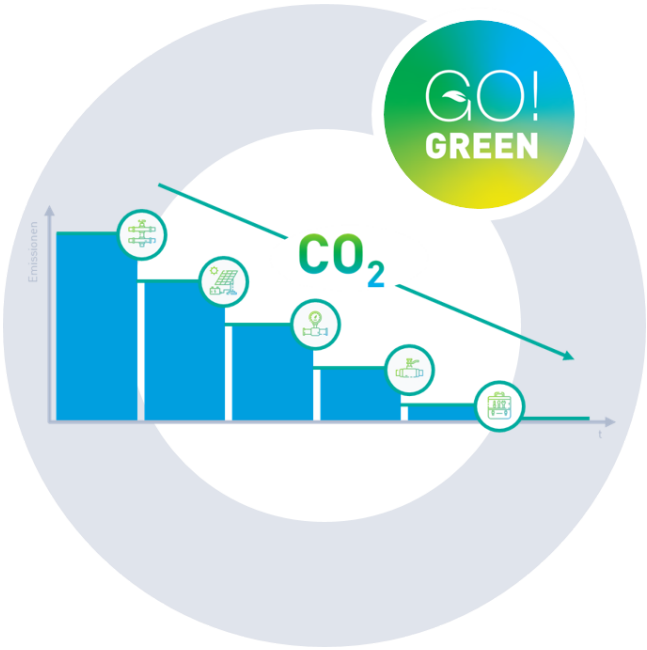
A credible sustainability strategy is a crucial competitive advantage for businesses and public institutions. Buildings and facilities are an important lever as they are among the principal emitters of CO_2. With respect to their 1990 values, greenhouse gas emissions in Germany have to be reduced by at least 65% by 2030 and by at least 88% by 2040. Buildings account for 35% of overall emissions. As an ESG solutions partner, the multi-technical service provider SPIE is pushing its Go! Green initiative, which cleverly bundles a range of solutions for improved energy efficiency and renewable energy to make buildings, facilities and infrastructure more sustainable.

Energy efficiency and renewable energy

To make buildings, facilities and infrastructure sustainable, SPIE considers their use of energy from a holistic perspective and develops tailored energy efficiency solutions based on detailed analyses to lower energy consumption and reduce climate-damaging emissions: the best kilowatt-hour is the one that is never consumed in the first place. Energy efficiency is achieved through optimally regulated facilities and efficient technical systems. Considerable reductions in energy consumption can be achieved with transparent consumption data and by optimising major energy consumers (e.g. heating and refrigeration equipment) and converting to LED lighting.
And renewable energy sources are used to generate electricity and heat. Key components include carbon-neutral heat generation with heat pumps, self-generated electricity from photovoltaic systems on roofs or facades, and modern storage technologies.

Data as the foundation of Go! Green

The first step towards carbon-neutral buildings and facilities is to systematically collect relevant data and set up a professional energy management scheme to enable a complete analysis of all energy consumption and CO_2 emissions. In spite of all the progress in digitalisation in recent years, many companies still have insufficient data on the energy consumed by buildings and facilities. And now the sharp increase in electricity and gas prices is making our lack of knowledge about this matter abundantly clear.



To perform detailed analyses, SPIE uses digital tools it has developed for the energy optimisation of buildings, facilities and infrastructure. The **SPIE Energy Manager,** > a cloud-based management tool, is used to collect and analyse data and to optimise energy consumption and processes. The energy and quantity data it records are processed with analysis tools.

SPIE's innovative **FM Analytics** > is a smart data analysis platform for correlating and evaluating facility management data to reliably identify relationships and deviations in operational processes. The analyses it produces can be used to compare consumption and energy performance indicators from different periods to identify weaknesses and uncover potential long-term optimisations. It can also be used to create and track energy performance indicators for displaying and monitoring continuous improvements in energy efficiency. Comparing these performance indicators with the energy baseline enables the identification of potential optimisations and the measures for implementing them. User-friendly dashboards summarise the most important analyses at a glance. The clear presentation of ESG-relevant data shows consumption-related CO_2 emissions as a function of energy source or cumulative reductions in CO_2 emissions. The processed data and analyses can be used for ESG reporting, and provide the required transparent success check.

With such a sound and comprehensive analysis, a tailored roadmap can be drawn up for the implementation of precisely defined and timed measures for the plannable, continuous reduction of CO_2 emissions.

Roadmap to carbon neutrality

The collected and analysed data can be used to draw up a roadmap that is aligned with the ESG goals and can be dynamically adjusted as needed. Even small operational optimisations can have a major impact: rapid efficiency increases exceeding 10% and amortisation periods under a year become possible through adjustments to installed loads and heat output in heat supply systems. Monitoring the configured system operating times and comparing them against the usage times of buildings or parts of buildings can also result in significant reductions in energy use for heating and cooling and in electricity and water consumption.

Further starting points for the reduction of CO_2 emissions include generating electricity and heat with renewable energy and heat sources such as photovoltaic systems with suitable storage capabilities, heating systems that use renewable sources such as pellets, and reducing electricity and heat consumption. Installing electric charging infrastructure in buildings also helps achieve ESG compliance.

Transparency, continuous monitoring, and verifying the effectiveness of implemented measures are always the indispensable guarantors of success in decarbonising on schedule and verifiably achieving ESG compliance.

Climate-neutral buildings and facilities as levers of a sustainability strategy

The path to climate-neutral buildings, facilities and infrastructure involves a smart combination of renewable energy, increased energy efficiency, and operational optimisations. It is important that the measures taken be tailored to the properties or portfolios involved and, above all, be based on extensive data collection and sound analysis. Moreover, their effectiveness needs constant monitoring.

Not only does the resulting transparency improve building management performance, it clearly demonstrates improvements in the carbon footprint and benefits the reputation of the buildings' owners – and ultimately the capital market's valuation of their businesses and portfolios.

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