



The sun plays architect

Austrian-based company my-PV has been successfully developing smart technology for the intelligent use of solar energy for over a decade. Now the company has moved into its new headquarters in Sierning, the design of which was unmistakably inspired by the sun. The PIKO CI commercial inverter from KOSTAL forms part of this pioneering project, demonstrating its capabilities on large scale projects.

If form follows function, the my-PV GmbH building can be described as stylistically successful and yet uncompromisingly oriented towards self-sufficiency. Photovoltaics were installed as a style-defining element on all façades, including the north side. They divide the façade surface in a strict geometric fashion, alternating with vertical wooden cladding and window

surfaces. Light-coloured window frames and covers for the blinds contrast with black PV and deep brown façade timbers.

The south-facing pitch roof with an average incline is covered with four large and four smaller photovoltaic panels parallel to the roof. In total, the building envelope provides 100 kilowatt-peak PV power for self-sufficiency. The founder of the company

himself sized the wooden studs of the low-energy building in a way that would allow photovoltaics to be perfectly integrated.

What does my-PV do?

my-PV is dedicated to indoor heating generated with solar electricity and so is taking a step beyond hot water preparation. The idea is becoming increasingly important



and confirms my-PV's strap line 'cables rather than pipes'. With growth rates of 50% per year and international sales, including some outside Europe, my-PV is enjoying huge success in the market.

Faith in technology

For many years, my-PV has relied on open interfaces and collaborations based on partnerships with many component manufacturers in the PV industry. A particularly long and strong partnership

links my-PV GmbH with KOSTAL Solar Electric GmbH.

When deployed in a single-family home, my-PV is happy to use information on the surplus power provided by KOSTAL inverters. 'This presents real added value and benefit to our customers,' explains product manager Reinhard Hofstätter.

So it is not surprising that new commercial inverters handle DC conversion in the company's new premises. 'We collaborate

very successfully with many inverter and electricity storage manufacturers. For many years now, we have also established close personal ties with KOSTAL, during training courses and presentations. It was clear to us that these inverters would work in our new premises,' explains Hofstätter.

Performance and efficiency for commercial applications

In 2020, KOSTAL Solar Electric GmbH presented its new inverter series for commercial applications, available in two sizes: with 30 and 50/60 kW. In 2021, these were integrated into the energy concept of my-PV low-energy commercial building, which is trend-setting both in terms of its architecture and energy sourcing. The above-average range of functions, great intelligence, extensive communication options, reliability and ergonomics won the company over.

Thomas Garber, Product Manager at KOSTAL Industrie Elektrik and the person responsible for the new inverter, says, 'The PIKO CI is the first commercial inverter from KOSTAL in this power class. It is in great demand throughout Europe. So it is of course all the nicer that my-PV chose it when planning its new premises.'

Thanks to their protective class IP65 and a tested temperature range of -25°C to +60°C, the inverters could be installed outside the building. 'Space-saving for the interior and accessible at all times,' Thomas Garber emphasises. 'PIKO CI devices are designed



for 50% overcrowding on the DC side. If more PV power is needed in the company's new premises in the future, the setup can be easily expanded.'

Integrated circuit breakers that can be controlled externally are also integrated into every inverter, so expensive external circuit breakers no longer have to be installed. An efficiency of 98% rounds off the performance package of the inverters, an important aspect for my-PV GmbH as an expert in storing photovoltaic surplus electricity in the form of heat in order to achieve a maximum degree of self-sufficiency.

Keeping energy in the building

The my-PV technology focuses on efficiency through high self-consumption and use of surplus energy through storage in the form of heat. As little as possible of the self-generated solar power should be fed into the grid. 'Our philosophy is to keep as much self-generated electricity in the building as possible. Self-generated green electricity is valuable and, in our opinion, should be kept in the building under all circumstances.

'This is the principle of our AC•THOR and our heating rod technology. Feeding electricity into the public grid can only be the very last option for buildings, if only to avoid overloading the grids,' explains Reinhard Hofstätter.

In the company's new premises, the floor slab functions as a heat reservoir. Surplus electricity is fed via electric heating loops into the concrete, which is charged with heat, slowly releasing it again at night. 'The system is an energy storage system for surplus electricity. It is low-maintenance and highly efficient. This energy is now reliably supplied by the inverter.'



Independent, even in transitional periods

The 100 kilowatt-peak photovoltaic capacity is allocated over the floor space of more than 800 m² in the low-energy building, so the company headquarters can itself generate enough electricity for consumption and heat, even in the transitional period.

The photovoltaics integrated into the façade in all orientations deliver good performance

even when the sun is low, apart from the north side, where the photovoltaics take on more of a representative character.

The south-facing pitch roof was covered with photovoltaics parallel to the roof, which is very conducive to the overall impression of the building structure and PV maintenance. The total electricity generation is enough to also supply electric vehicles for employees.

12 AC•THOR devices for maximum self-sufficiency

The anticipated self-sufficiency in the new headquarters should be around 52% thanks to the photovoltaics and AC•THOR control. This is a good value considering that there is no electricity storage installed in the building. A total of 12 AC•THOR devices manage the efficient use of self-generated solar power.

'Electricity storage systems are regularly integrated into the building network, but only for test purposes. my-PV systems store surplus electricity from photovoltaic systems in the form of heat. This brings the benefit of much lower costs compared with electricity storage systems,' explains Reinhard Hofstätter.

The my-PV premises show how the energy transition can succeed both in terms of architecture and energy. The use of KOSTAL inverters underlines the desire for efficiency and high functionality.

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