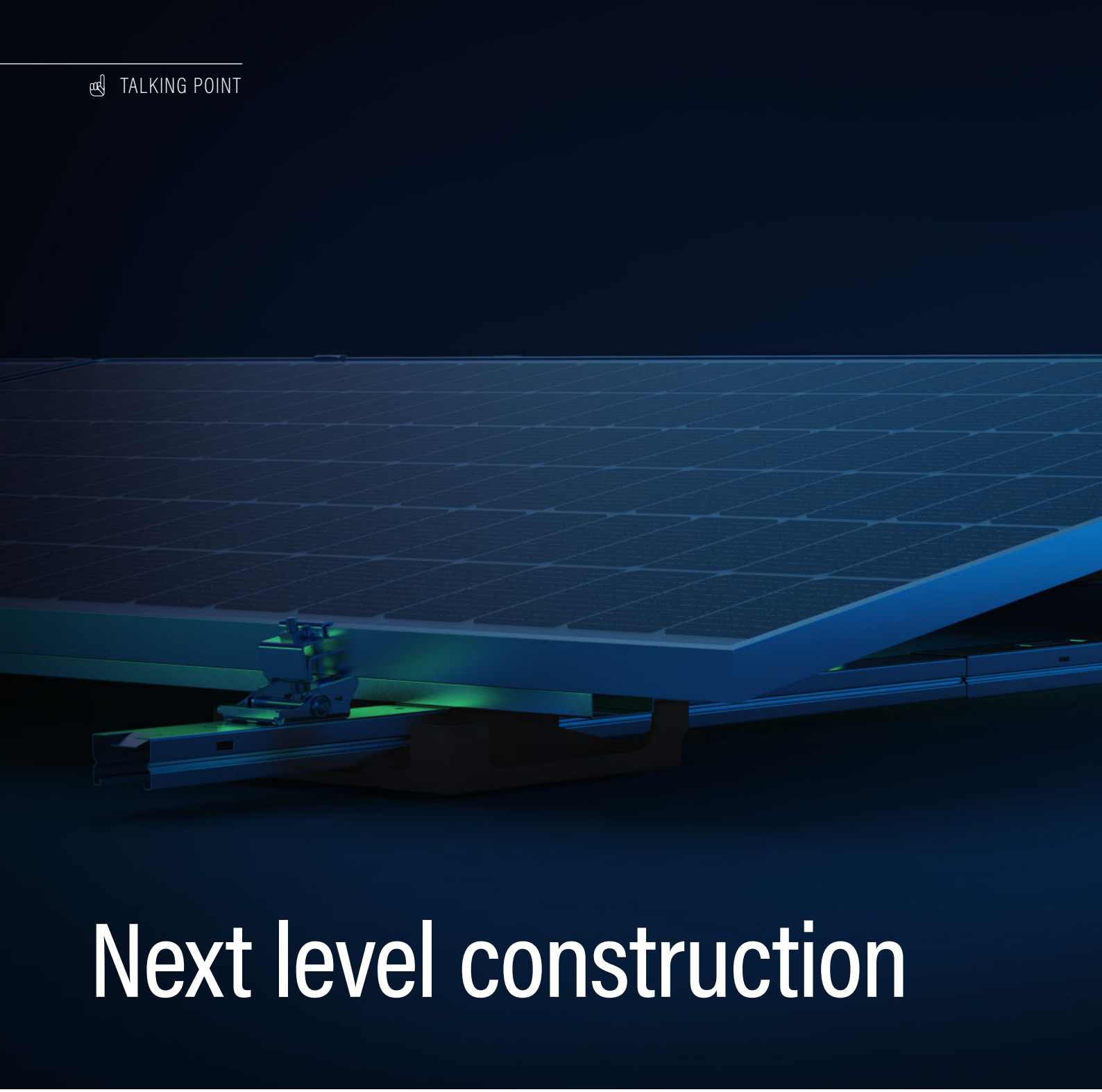


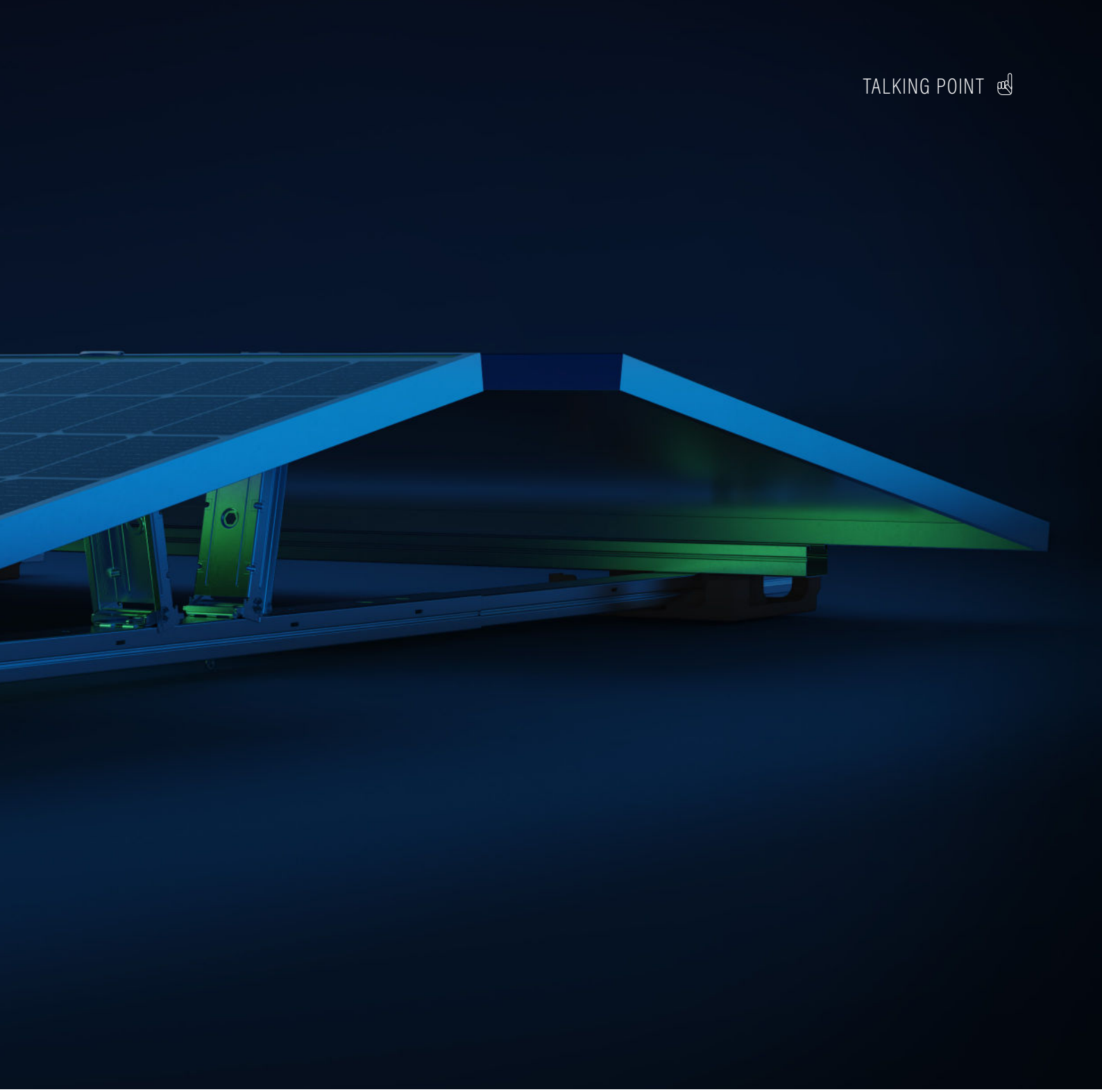
Next level construction

More power, larger modules, more efficient solar power production; with the enormous leaps in development in the solar industry, the foundations must also be right. The innovative mounting system PMT EASY from Premium Mounting Technologies (PMT) introduces the next level of safe and reliable solar module mounting.

The energy turnaround has picked up speed. Although in Germany alone 90% of the company roof surfaces suitable for solar installations are still unused, as the German Solar Industry Association pointed out in July, more and more companies and investors are recognising the advantages of an energy supply from renewable sources. As the number of buildings supplied by solar power grows, so do the demands on technical implementation.

The electricity grid is constantly being optimised so that individually generated electricity from companies and buildings can be fed into it. Storage solutions are being developed to help provide energy when it is needed. And solar modules are becoming more powerful and growing. For the mounting systems and their installation on the roof, this results in new challenges that previous components often cannot cover.

The German manufacturer of photovoltaic substructures Premium Mounting Technologies from Stadtsteinach, PMT for short, has developed another solution. The



innovative mounting system PMT EASY is ideal for the efficient and safe installation of PV modules on flat roofs. Thanks to the unique pivoting mounting and push-&-click technology, it enables easier handling and more reliable fastening of the modules. Particularly suitable for large modules, it is the perfect solution for the fast implementation of large-scale projects.

As a pioneer in the industry, the company builds aerodynamic and lightly ballasted mounting systems for flat and pitched roofs. In 2022 alone, the company has realised a total of 630 MWp and its customers include companies throughout Europe. The engineering team finds innovative, preassembled solutions that offer high ease of installation and maximum reliability.

'New solar modules take up a larger surface area than those commonly used in the past,' says PMT CEO Michael Jakal. 'This is good because they work more efficiently, produce more solar power and fewer modules are needed. On the other hand, the larger modules require new solutions to install PV systems safely on the roof.' Due to the large module widths, installers can no longer reach the opposite module clamp, as is the case with conventional mounting. This means that it is no longer possible to securely fasten the module without putting body weight on it and, in the worst case, damaging it.

The new way to mount modules

With PMT EASY, the Stadtsteinach-based company is rethinking the entire installation process. The system is designed so that the solar modules are inserted vertically into the clamps. In this way, installers have free access to the module during the entire process, without putting any strain on it or risking damage. In the first assembly step, the module can be mounted from the back. Then it is tilted to the final position and the pivoting module clamp is swivelled towards the module. Now the solar panel can be securely placed and fastened in the final position. Simple, efficient and well thought-out.

The positions at which module clamps are attached also change with the new sizes. While it was previously sufficient to attach solar modules on the short side with clamps, the trend is moving towards mandatory clamping on the long side as the modules become larger. The reason for this is that

longer solar modules bend too much under wind and snow loads. If they are only clamped on the short sides, the risk of damage would be too high.

Thought crosswise

With PMT EASY, modules are easily and reliably mounted at ideal clamping points. The swivelling opposite module clamps facilitate installation and easily fit modules of different widths. PMT counters the higher wind loads caused by the considerably larger module surfaces with a clever trick. Increased wind loads previously required greater ballasting for each individual module. The innovators from Germany developed a cross-laminate made of particularly rigid and high-strength steel profiles. Module fields of up to 30x30 metres are no problem.

Thanks to this connection, a load-bearing system compound is created. The load is distributed over a larger area and the entire system rests stably on the roof. This ensures that fewer ballast stones have to be used to secure the system so the total area load is significantly lower. This protects the roof and reduces the amount of material used. Especially with existing roofs, the lower total surface load is a huge advantage. This is because existing roofs often offer little scope for higher roof loads.

The cross-connection of the PMT EASY-Plate ensures that Swift Rails and Row Connectors are force-fitted. The system bond is created and point loads are minimised. In addition, the system can take ballast stones at this point. This is why it is perfectly suited for existing buildings. These in particular represent a great potential for the energy transition and are essential for achieving the climate targets that have been set.

Uniquely innovative

'With PMT EASY, we have achieved a new level of manufacturing possibilities that is unique in the industry,' says Arnd Pietrzak, Chief Innovation Officer at PMT. The system is also ideally suited to optimally cut out and convert interfering areas on the roof, which additionally increases the energy yield in relation to the existing roof area.

The new development thus fits perfectly into the PMT world. The planning of the entire installation is done conveniently via the planning software, and is easily understandable and comprehensible. Only one screwdriving tool is required for the entire installation. Sources of error are minimised with the mix-up-proof design. The components can be assigned without any doubt. The company's own push and click principle ensures that each element is installed correctly. The audible click of the components lets the installer know immediately that everything is correctly in place. This provides security during the installation work.

Efficient and safe assembly is a promise that the company makes to its customers and underlines with a 15-year product guarantee. A basis of trust that is also proven by the building authority approval of the PMT EVO 2.0 and 2.1 aerodynamic mounting solutions.

Installed with a click

The decision to use steel in the production of EASY provides a more cost-effective solution than aluminium, can be produced more quickly and offers the necessary reliability that the new product is supposed to guarantee.

Sustainability also played a significant role, as it does in all corporate decisions: 'We continue to rely on local supply chains and, with this solution, we offer our customers a product with the smallest possible carbon footprint,' explains PMT COO Jörg Weber-Schorsch. Steel has a recycling rate of well over 90%. A large proportion of steel production already runs in closed or nearly closed cycles and is therefore particularly environmentally friendly, as PV systems also have a limited life cycle.

The reliability of the new assembly system was thoroughly tested. What bears the name PMT has to prove itself in wind tunnel tests, digital simulations and on testing equipment such as tensile testing machines and friction test benches. The know-how gained from ten years of project experience and feedback from its customers is incorporated into the developments resulting in solutions that offer an answer to the demands of the market and drive the industry forward step by step.

PMT EASY will be available from Q4 2023.

www.pmt.solutions