



Energy from asphalt: turning parking lots into powerhouses

Large parking areas are part of everyday operations for many companies, yet they often remain energetically unused. At the same time, the pressure to use these spaces more efficiently is growing: several German federal states have already introduced requirements to cover newly built parking lots, while companies are increasingly looking for cost-effective solutions for their own electricity supply. Photovoltaic carports combine both. With many years of experience in planning and implementation, PMT (Premium Mounting Technologies) demonstrates with its proven PMT CARPORT how parking areas can become powerful energy surfaces

A market in motion

While rooftop spaces are often already in use, large parking areas are now coming into focus. Especially in the commercial sector, they offer significant potential for photovoltaics. Studies show that a large share of Germany's total surface potential lies in medium-sized parking lots.

Parking areas with 35 to 99 spaces account for around 25% of the total potential. Lots with 100 to 199 spaces contribute another 23%, while parking areas with 200 to 399 spaces represent about 17%. This means that almost half of the total potential in Germany is concentrated in parking lots with 35 to 199 spaces.

Very large parking areas with significantly more spaces also offer considerable individual potential but are far less common overall. At the same time, a clear trend toward increasingly large projects can be observed. Photovoltaic carports are no longer built only on a small scale. Installations with 20 to 40

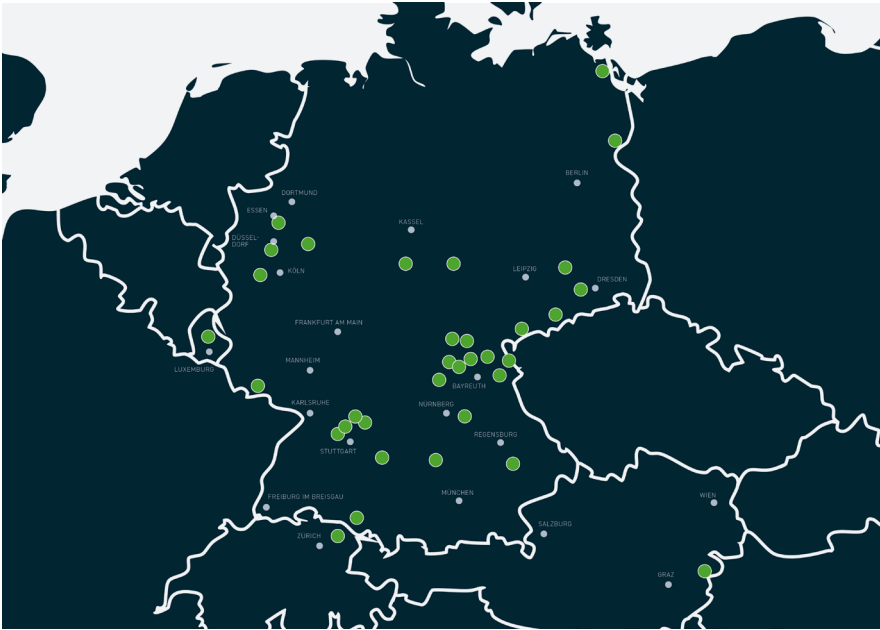
megawatts of capacity show that parking lots are increasingly being viewed as serious energy infrastructure.

While the total surface potential is distributed across many small and medium-sized sites, the largest projects are primarily being developed on very large commercial and industrial parking areas.

The market can roughly be divided into four segments: private homes, residential complexes, commercial parking areas and large sites operated by automotive logistics companies. The largest projects are now emerging primarily in the commercial and industrial sectors.

A system built on experience

PMT has been working on photovoltaic carports for around 15 years, making the company one of the experienced providers in this field. The PMT CARPORT system currently in use has been deployed for more than ten years and has been continuously developed.



Fast foundations, stable construction

Another important aspect of carport projects is the foundation method. Many systems rely on massive concrete foundations that require extensive earthworks and significant intervention in the existing infrastructure. For parking areas already in use, this can lead to additional effort, longer construction times and operational disruptions.

PMT CARPORT takes a different approach and uses a driven pile foundation, which is far less invasive.

The piles are driven directly into the ground without extensive excavation work or large concrete foundations. As a result, the existing parking surface remains largely untouched and the impact on the existing infrastructure is minimized.

On top of the driven piles, PMT CARPORT uses a concrete base that fulfills several functions. In addition to ensuring safe load distribution, it also serves as an integrated impact protection. Even if vehicles come into contact with the structure, the system remains stable and protected.

This construction method not only ensures fast and efficient installation but also simplifies the integration of the system into existing parking structures. For operators, this means shorter construction times, less disruption and more economical project implementation.

This experience is particularly evident in the structural design of the system. A key factor for economic efficiency is the large spacing between supports. In many carport solutions, the space between two columns allows room for only two vehicles. With PMT's design, however, up to five parking spaces can sometimes be realized between two supports.

This effectively halves the number of required columns, an advantage that directly reduces material requirements, installation effort, and construction time. Fewer supports not only result in a slimmer structure but also enable more efficient installation and therefore lower overall project costs.

A similar principle is applied to the load-bearing elements of the structure. The robustly dimensioned purlins are designed so that significantly fewer individual components are required without compromising stability or safety. The combination of high-performance components and reduced system complexity ensures that the structure can be assembled more quickly while remaining material-efficient. In this way, the carport system combines technical stability with economic feasibility.

Thinking big: maximum use of space

One of the key characteristics of modern photovoltaic carports is the optimal use of available space. This is exactly where PMT CARPORT comes in. Thanks to its design, the system enables particularly large roof spans and therefore highly efficient coverage of parking areas.

With a standard roof depth of around 13 meters, and in some projects even up to 16.8 meters, an exceptionally large area can be equipped with photovoltaic modules.

These dimensions open up additional possibilities in project planning. In many cases, not only the parking spaces themselves but

also parts of the driving lanes can be covered. This creates significantly more module area than many conventional carport solutions offer.

For operators, this means higher installed capacity and, therefore, better utilization of the available space. With PMT CARPORT, existing parking areas can be used to their full potential: the infrastructure remains intact while a powerful photovoltaic system is installed, a key factor for the economic efficiency and performance of the entire installation.





Functionality meets design

In addition to technical design, aesthetic appearance is becoming increasingly important. Companies want their infrastructure to be not only functional but also representative.

The structure, therefore, combines clear, timeless architecture with high-quality materials. The visible wooden beams are often deliberately used as a design element. They provide structural advantages and allow flexible scaling when higher load requirements are involved.

Depending on the project, the beam dimensions can easily be adjusted to withstand extreme snow or wind loads without changing the basic structure. This allows PMT CARPORT to be efficiently and safely planned for both standard projects and particularly demanding locations.

In addition, the system offers numerous possibilities for individual design. This becomes particularly visible in the concrete base: it can be customized with company logos, branding, or other design elements, turning it into an integral part of the company's identity. In this way, the system combines technical functionality with a distinctive, representative appearance that turns the carport into a recognizable architectural feature.

More than just a structure

A carport project is far more complex than it may appear at first glance. Although the installation is built on an existing parking area, it is legally considered a full construction project, comparable to building a parking garage.

Especially in the early project phases, many challenges are often underestimated. Existing

drainage systems must be taken into account, the ground may need to be checked for unexploded ordnance, and tree removal permits may be required. In addition, there are structural requirements such as earthquake loads as well as local building regulations that can significantly influence the planning process.

With 15 years of experience in carport construction, PMT therefore supports projects not only technically but also through an extensive network of specialized partners and experts. Thanks to this long-standing expertise, solutions can be implemented efficiently even for complex challenges.

A globally proven system

PMT CARPORT is no longer used only in Europe. Projects have already been implemented in various international markets, including Chile and Senegal.

Growing demand shows that parking areas worldwide are increasingly being viewed as sources of energy. At the same time, the requirements for planning, structural engineering, and construction processes are increasing, particularly for large-scale industrial installations.

A growing market with great potential

The combination of regulatory pressure, rising energy prices, and increasing sustainability awareness is bringing photovoltaic carports more and more into focus.

Parking areas are evolving from purely infrastructural spaces into productive energy systems. Companies can generate their own electricity, improve their CO₂ balance and at the same time create additional value for employees, customers and logistics processes.

With many years of experience, a proven system and a clear focus on economic efficiency, PMT demonstrates how this potential can be successfully realized in practice.

pmt.solutions/en/

About the company

Premium Mounting Technologies GmbH & Co. KG develops and produces aerodynamic photovoltaic substructures for all types of roofs on commercial buildings and builds industrial carport systems.

Headquartered in Stadtsteinach, Upper Franconia, PMT was founded in 2012 as a supplier of flat-roof constructions for conventional solar systems.

Today, with over 90 employees, the company develops individual and tailor-made solutions for flat and pitched roofs in accordance with the highest safety and quality requirements for the global market.

PMT's customer base includes a wide range of EPCs, distributors, installers and sales partners.

With CLIP Logistics in Poland, PMT realized the largest PV system to date with EVO 2.0 in a southern orientation at the project site in Jasın in 2019.

An impressive 22,947 modules provide a total output of 7 MWP on five roofs of the logistics group, an area of over 3,000 square metres.