



The evolution of excellence in rooftop mounting solutions

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Advancements in engineering technology and design are continually pushing the boundaries of what is possible in solar energy. Clenergy has been at the forefront of this evolution, providing innovative mounting solutions that meet the dynamic needs of the market. The Ascent 1.1 rooftop mounting system is one of the company's latest innovations. Building on the success of its predecessor, it offers enhanced features and improvements that address common challenges faced by solar installers and developers.

The Ascent product line is renowned for its reliability. Initially introduced to the market several years ago, the original Ascent system quickly gained traction due to its ease of installation and robust performance. Designed specifically to simplify varied flat roof installations, the system has been deployed in numerous projects across the globe, including significant installations across Europe and the United Kingdom. These projects have demonstrated the system's capability to withstand various environmental conditions while maintaining optimal performance.

The Ascent system has been a key product for Clenergy customers in numerous high profile projects across Europe and South Africa. The system has been used on rooftops in Germany, the UK, Romania, Hungary, Lithuania, and South Africa, ranging from 20 kW to 2.7 MW. It was also selected for a 1.22 MW project in the United States, showcasing the system's flexibility with various variations and accessories offered.

The flat roof system has been widely showcased across various solar systems on municipal buildings, demonstrating its capability to adapt to different building codes and environmental conditions across Europe. The United Kingdom has seen significant deployments of the system, particularly in industrial estates and business parks, where its ease of installation and maintenance has provided substantial cost savings.



Lithuania: 100 kW



Los Angeles, US: 1.22 MW



Bucharest, Romania: 2.7 MW



Scuba, Lithuania: 500 kW

These projects highlight the effectiveness of the Ascent system and underscore its role in advancing renewable energy adoption across Europe. The successful implementation of the system in these projects serves as a testament to its design and performance, providing valuable case studies for future installations.

The release of the new Ascent 1.1 marks a significant upgrade from its predecessor, incorporating a range of new features and enhancements designed to address the challenges and frustrations experienced by installers and developers. One of the most notable improvements is the reduction in ballast through aerodynamic design, which not only decreases the weight load on rooftops but also enhances the overall stability and performance of the system.

The Ascent 1.1 has been wind tunnel tested by the IFI Institute, ensuring that it can withstand high wind speeds and turbulent conditions. The optimised design reduces ballast requirements, making it lighter and easier to install without compromising on stability. The system now features preassembled universal multi clamps with the elevation supports, reducing the number of SKUs required and saving on warehouse and pick up costs. This simplifies logistics and makes the installation process more efficient.

Ultimately, no two markets are the same, and it is imperative that multiple solutions can be offered to meet specific market and customer requirements.

Some of the new standout features of the new system include its click in technology, which allows for tool free assembly of the base rail. This innovative patented design significantly reduces installation time and effort, implemented following consultations with Clenergy customers from previous projects. The system is designed to protect the roof surface and eliminate poor contact with materials by incorporating a new range of building protection pads. This ensures that the system can be installed on various roof types, including PVC, foil, bitumen and concrete roofs, without causing damage to the roof surface covering.

The system supports both north-south and east-west module orientations, providing flexibility in design and maximising the use of available roof space. Ballasts can now be placed on the system base rail or alternatively positioned on the system ballast rail beneath the module. By offering both options for ballast application, a wide range of differently sized ballast blocks can be used with the system.

The enhancements in the system are a direct response to the challenges and frustrations faced by the industry. One common issue is the complexity and time consuming nature of installations. By reducing the number of components and incorporating preassembled parts, the Ascent 1.1 addresses this challenge head on, making installations quicker and more efficient.

Another significant challenge is the need for stability in high wind conditions. The wind tunnel testing conducted by the IFI Institute provides installers and developers with the confidence that the Ascent 1.1 can withstand harsh environmental conditions. The aerodynamic optimisation not only reduces ballast but also enhances the system's ability to remain stable in high winds, even on buildings over 25 metres in height. This is also an improvement on the previous system, addressing a critical concern for rooftop installations.

The credibility and reliability of the new system are further reinforced by its rigorous wind tunnel testing. Conducted by the renowned IFI Institute, the testing focused on the gap ratio commonly known as the vent

gap, which considers the distance between the lower section of the system/module to the floor, the gap between the top of the panel and wind deflectors, minimising any cantilever of the module, and the gap between adjacent panels in east-west configurations.

It is critical that this ratio balance is correct, particularly with solar panels that now have an average width of 1134 mm. Clenergy is confident that the new position of the elevation supports gives optimum ballast results without compromising space for installation and maintenance purposes.

The internal and external R&D evaluation looked at the effectiveness of any additional side deflectors, the coupling effect, and the effectiveness of long and short side clamping. Following the new results from the IFI Institute and their detailed analysis and evaluation, Clenergy believes that the Ascent 1.1 can be used in a wide range of applications and regions that historically have high wind speeds and turbulent conditions, making it a reliable choice for rooftop installations in diverse environments.

In addition to the wind tunnel testing, Clenergy engaged in extensive external consultation and internal testing. It was important to understand the specific requirements from a multitude of different markets, to listen to customers, and to provide a product that meets their criteria.

For example, understanding that larger sized modules are preferred in some markets, which means long side clamping needs to be an alternative option, or taking a more detailed look at different roof coverings to decide what material should be specified for a roof protection mat to achieve a good friction coefficient value while protecting the roof surface as much as possible.

It became abundantly clear that one solution does not meet all requirements, and that a system with multi function options is the best way forward. This collaborative approach with external partners has resulted in a product that not only meets customers' expectations but also provides a stable, reliable product backed by a new 25 year warranty to meet and exceed industry expectations, providing installers and developers with a solution that is both innovative and dependable.

The Ascent 1.1 now offers a versatile system with 10° and 15° south/north elevation and 10° east/west configuration with the possibilities of long side and short side clamping. Clenergy will proceed with further development phases. Upcoming variations will include mechanical integrated fixings, portrait possibilities, and a potential green roof product extension.

Ultimately, no two markets are the same, and it is imperative that multiple solutions can be offered to meet specific market and customer requirements. The first set of adaptations for the Ascent 1.1 represents a strong starting point for the new product family.

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About the author

Jason McCabe has worked in the construction and built environment sector for over 30 years and has specialised in the development of solar PV mounting solutions since 2010.

With a particular interest in the structural integrity of PV systems, Jason has served as a technical consultant and expert witness across Europe, the UK, and South Africa.

He has focused on the development and innovation of solar mounting products, contributing significantly to the industry.