

world's best flexible hybrid solar panels

The technology used was inspired by aviation. This made it possible to produce the lightest photovoltaic modules on the market, which at the same time guarantee a service life of more than 40 years.

Our pioneering work in photovoltaic technology started in 2010. Christian Dries, founder and CEO of DAS Energy Ltd, and his team developed the world's first photovoltaic modules embedded in glass fibre-reinforced composite material.

Since 2016, the high-quality DAS Energy photovoltaic modules have been manufactured at the site in Wiener Neustadt, Lower Austria and are distributed worldwide.





background

DAS Energy founder and CEO Christian Dries has a background in the aviation industry, having founded Diamond Aircraft and running the enterprise successfully for many years.

In addition to manufacturing aircraft, Dries began developing innovative and lightweight photovoltaic modules using the same fibreglass materials as are used in the construction of aircraft.



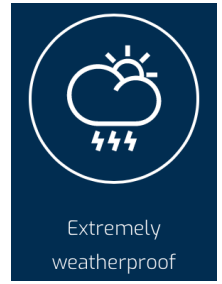


DAS Energy Ltd
was founded in 2010
based on this research

unique hybrid flex panels







Extremely simple Installation

The modules are bonded directly to the sheet metal, bitumen, glass or membrane roof.

Glare-free, ideal for applications near Airports

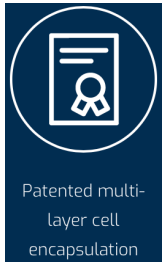
Trapeze and Standing Seam Roofing

Many application possibilities

Lightweight and flexible

Patented technology







Flexibility and lightness make them ideal for roofs with low load-bearing capacities.

40 Years of Performance Guaranteed

Flat roofs and facades

Bitumen and membrane surfaces

Protected Historic Buildings and Areas

Universal PV modules for an aesthetic cityscape

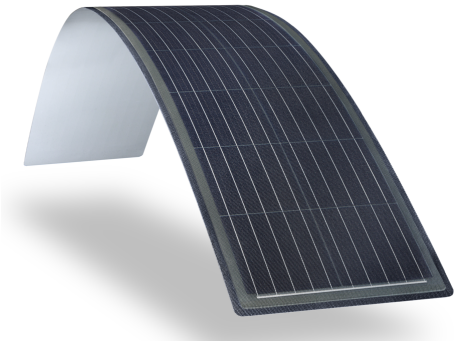
Any size and shape





The photovoltaic modules enable almost limitless applications - directly integrated into architecture (facades, roof foils), applicable in statically difficult situations (e.g. flat roofs), including on listed buildings, or for mobile use such as campers and yachts.

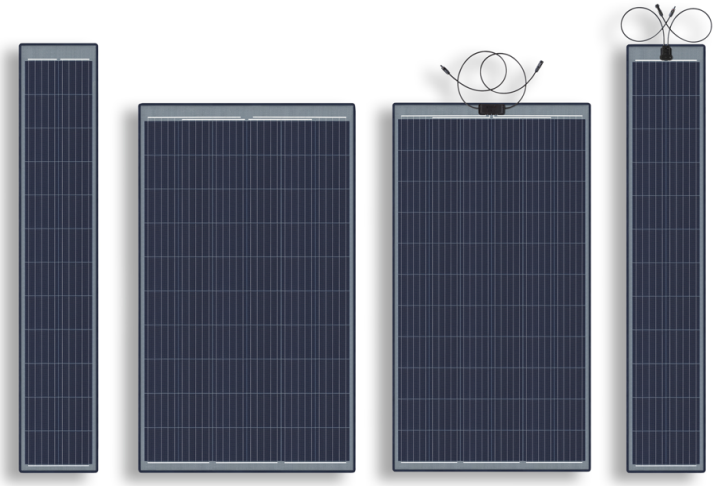


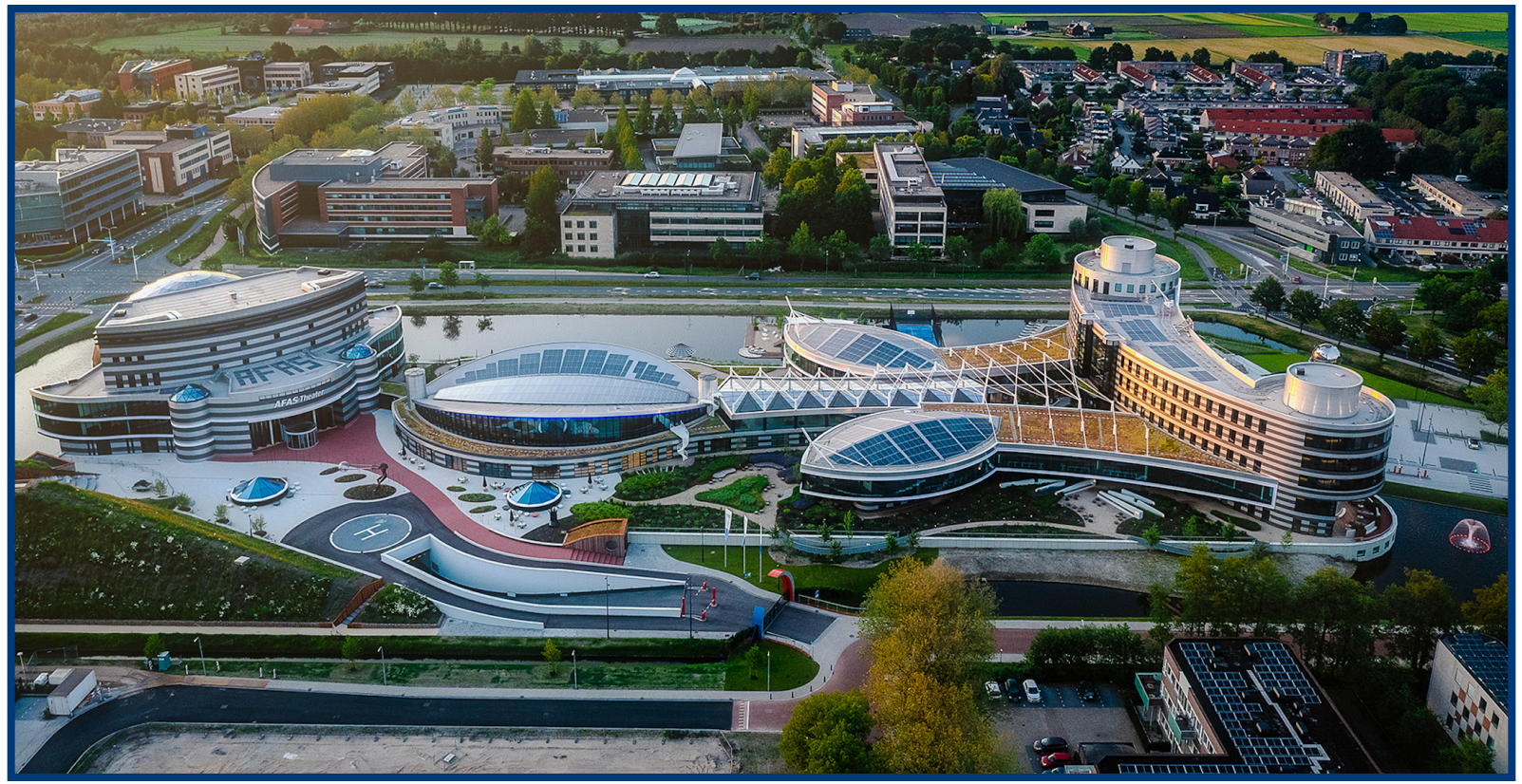


3,3 kg/m2

market standard approx. 20-25 kg/m2 with substructure



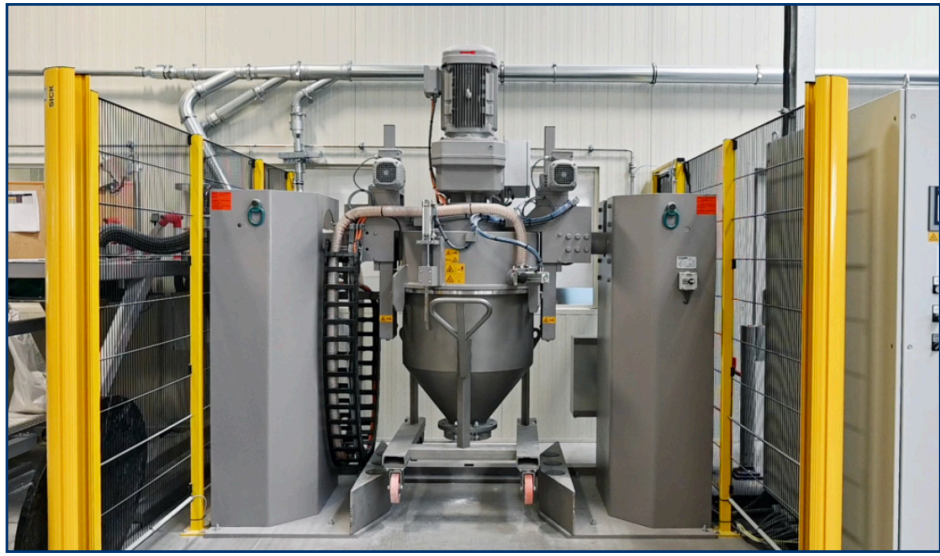



AFAS Theater

patented prepreg method

DAS Energy's PV modules are made from fibreglass-reinforced plastic and the patented pre-grep material (chemically treated fibreglass weave).

The development of this technology took six years and is a result of over 25 years of experience with fibreglass materials at Diamond Aircraft.



our vision

"Our vision is to take energy to wherever it is needed. We address the needs energy supply needs of tomorrow, and are opening up new opportunities for integrated architectural photovoltaic solutions.

Our mission is to power the global transition to green energy by developing and manufacturing the most cutting edge products in the photovoltaics sector."

Christian Dries

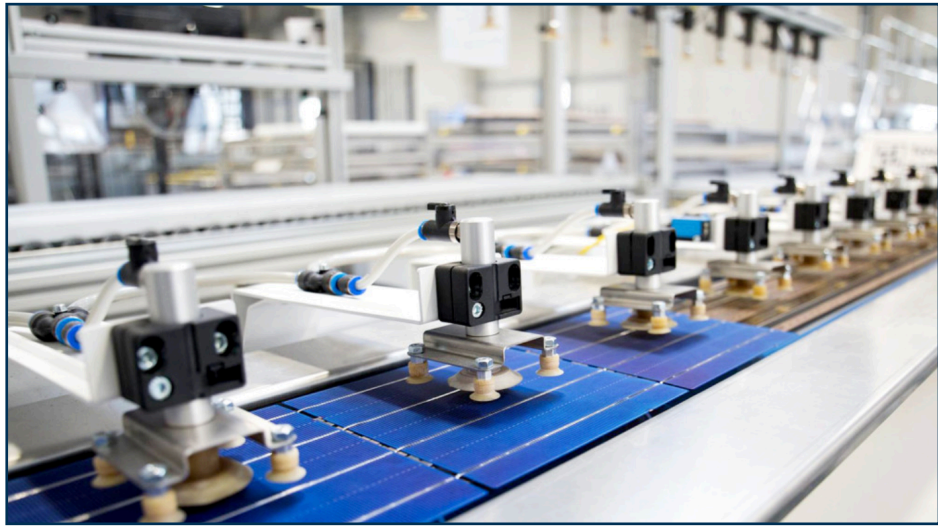
Founder and CEO of DAS Energy



made in Austria

Our headquarters is in Wiener Neustadt, Lower Austria, and home to our R&D centre, where we strive to continuously improve our technology.

We have been producing high-quality photovoltaic modules “Made in Austria” at our Wiener Neustadt Plant.



40 years of performance Guaranteed

Our first certified PV modules have been in use since 2014 without issues.

As the fibreglass materials used by us come from the aerospace industry and have withstood enormous wear in that capacity, we offer a 40-year performance guarantee for building-integrated and building-applied modules (85%).

Our modules have been tested in numerous environments (UV resistance, climatic chamber etc.).

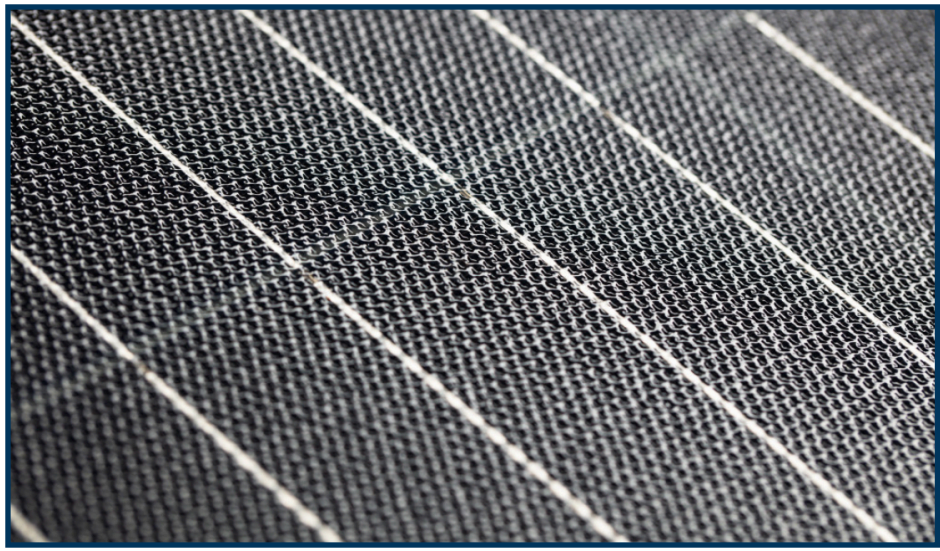


monocrystalline cells

DAS Energy uses monocrystalline cells, the most commonly used photovoltaic cells.

These cells are composed of perfect silicon monocrystals and offer particularly high efficiency, with over 22% of the light hitting the cell converted into electricity.

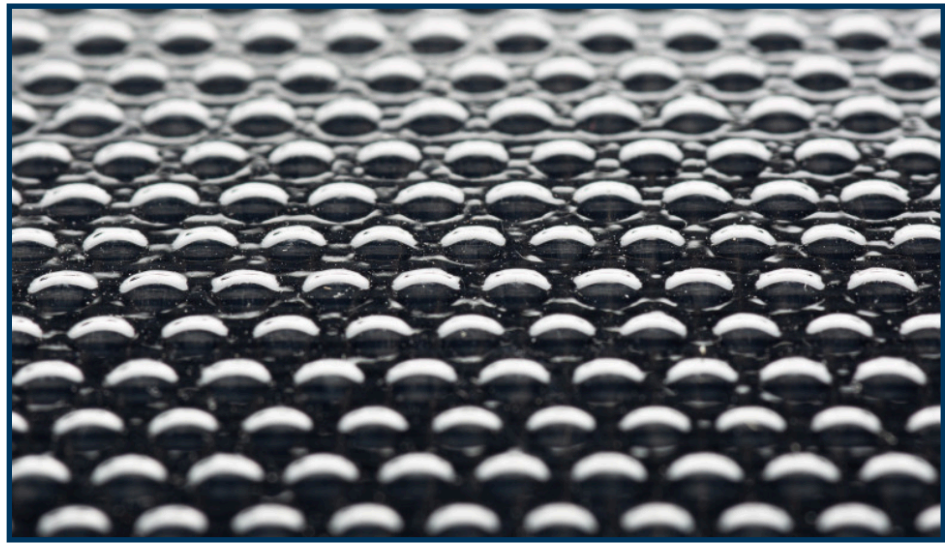
Our standard PV modules have a bend radius of 200cm. For specialised applications on rounded surfaces, we offer a specialised module structure (less and thinner fibreglass weave) that allows a bend radius of 15cm.



high energy output and weather resistant

Suited for all weather conditions – power output remains constant even in environments with high heat, UV radiation, sand storms and dust.

The structured, anti-reflective, dirt-repellent and transparent surface of the DAS Energy PV modules results in light coupling - the so-called light trapping effect.

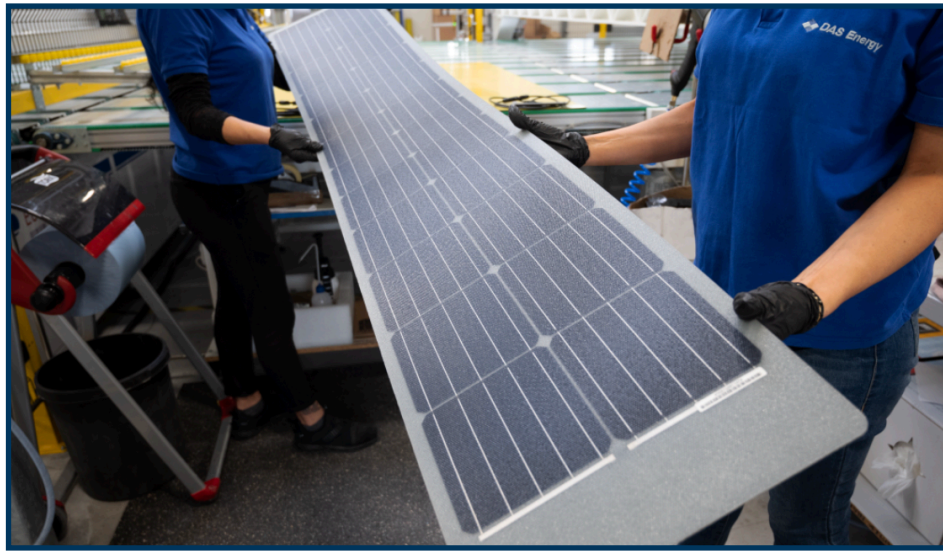


custom–tailored photovoltaics

The shape, design and colour of the ultra-lightweight, flexible and durable DAS Energy PV modules can be customised.

We offer modules ranging from 6 x 1 cells to 11 x 6 cells.

Our production facilities can produce laminates of up to 4.9m x 2.0m in size.



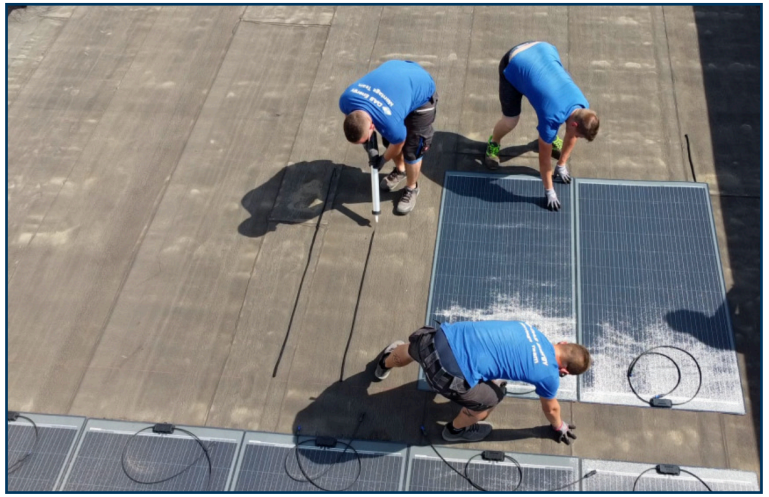
no substructure. Glued directly. reduced installation time

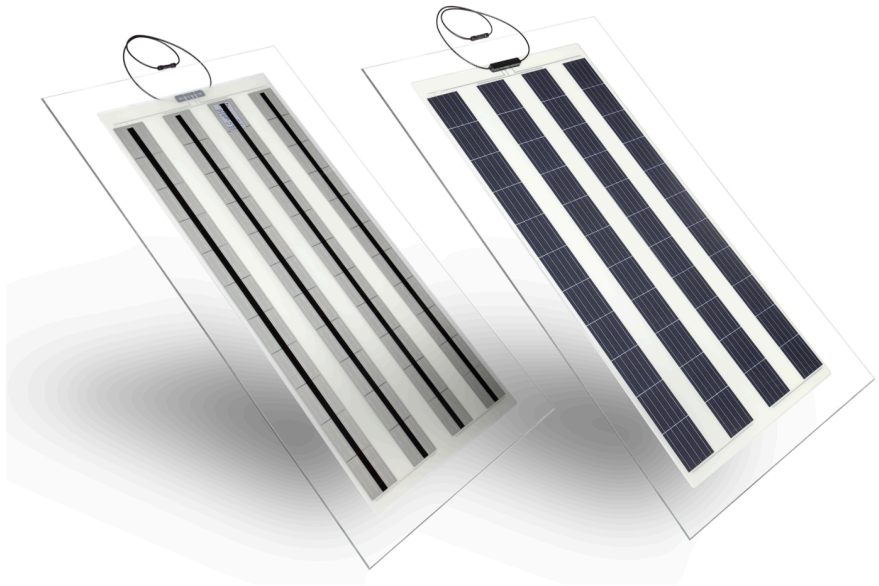
DAS Energy photovoltaic modules can be mounted without the need of a substructure or additional fixing materials. The photovoltaic modules can be glued directly to a building's exterior.

This method significantly reduces the time required to install the modules. Furthermore, no damage is created by drilling holes in the substructure, as the roof surface is left intact.

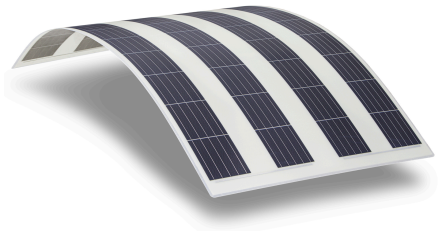
With their low weight, DAS Energy PV modules are also suitable for roofs and facades that pose significant structural or physical challenges, i.e. low load-bearing capacity.



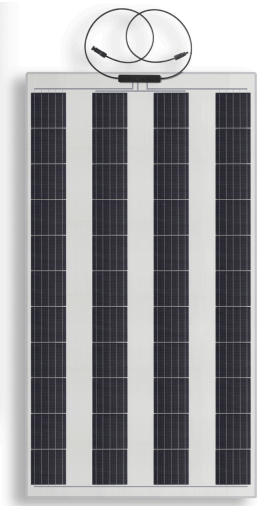




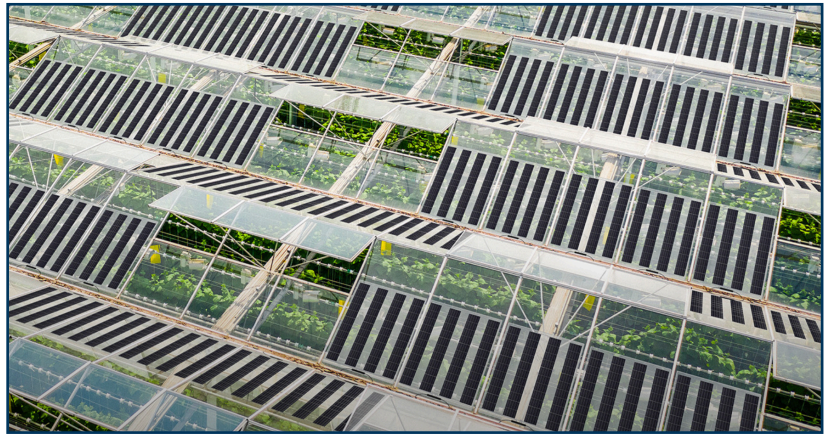
Greenhouse PV modules



Semi-transparent and ultra-lightweight PV modules from DAS Energy offer sufficient diffuse light for plants growing in greenhouses, protect the plants from too much heat in summer, while also producing electricity to power all the electrical systems such as ventilation, watering and lighting.



urban agricultural photovoltaic system for Greenhouses



The semi-transparent PV module series from DAS Energy has been specially designed for applications where allowing indoor sunlight is an important consideration.

Greenhouses are a prime example of this. The plants cultivated within require warmth – generated by the greenhouse effect – as well as sunlight in order to grow.

In summer, particularly in regions closer to the equator, it can quickly become too warm inside the greenhouse. DAS Energy offers the perfect combination to deal with these challenges: a semi-transparent PV module that can provide shade while also generating electricity.





trapeze and standing seam roofing perfectly integrated PV modules

DAS Energy modules are designed in such a way that they can be integrated into any aluminum roof and facade system.

An example for the use of DAS Energy PV modules on standing seam roof is shown at the modern and largest waste incineration plant in Kraków, Poland.

The 12x2M DAS Energy PV modules were glued on straight, convex and concave rounded aluminum surfaces (aluminum roof and facade system Kalzip).



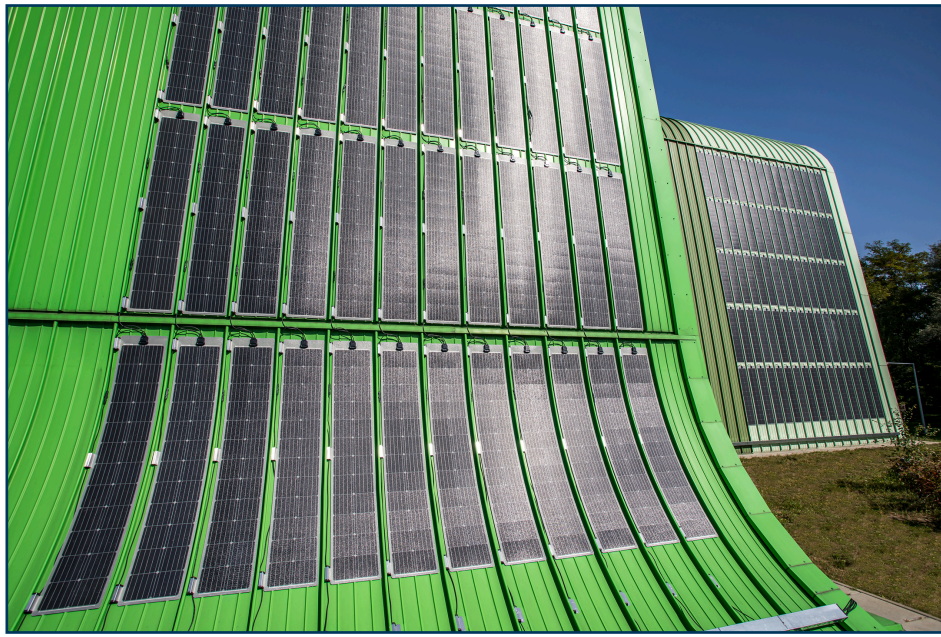
waste incineration plant becomes solar power plant

To be more precise, the ultra-light and flexible modules were installed on the architecturally remarkable building of the Krakow waste incineration plant on a Kalzip facade system.

In total, the south-facing facade was equipped with 152 24-cell DAS Energy Universal PV modules as part of a pilot project.

The flexible modules are equipped with highly efficient monocrystalline solar cells and adapt perfectly to the curved shape of the metal facade.

The individual modules were glued directly onto the sheet metal covering between the standing seams without any additional fastening material. The architecture of the building remains largely unaffected.



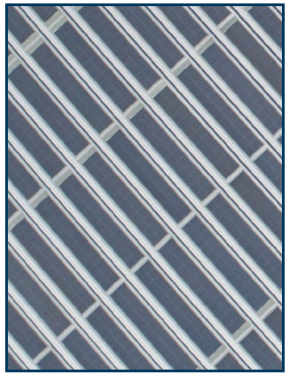
Rostock Harbor relies on DAS Energy PV modules

Conventional PV glass modules in coastal regions have an increased risk of salt spray corrosion. The consequences are a drop in performance and increased maintenance costs for the PV system. Various components of the system, such as metal frames, can rust from the damp salt air and must be replaced.



since 2016: salt spray corrosion certification for DAS Energy PV modules

DAS Energy PV modules, on the other hand, are glass fiber reinforced. This structure not only ensures light weight (3.3 kg per m²), but also resistance to rough weather conditions - especially in coastal regions. That is why DAS Energy received the double standard salt spray / corrosion certification according to IEC 61701 (severity level 6) from TÜV Nord in 2016.





minimized area exposed to wind with DAS Energy modules

The type of installation of the DAS Energy Module is a further advantage for windy coastal regions. Because the modules are glued to the metal tracks very easily and without any additional fastening material, they do not offer any surface exposed to wind.

Vienna's Waste Management Administration goes green with DAS Energy

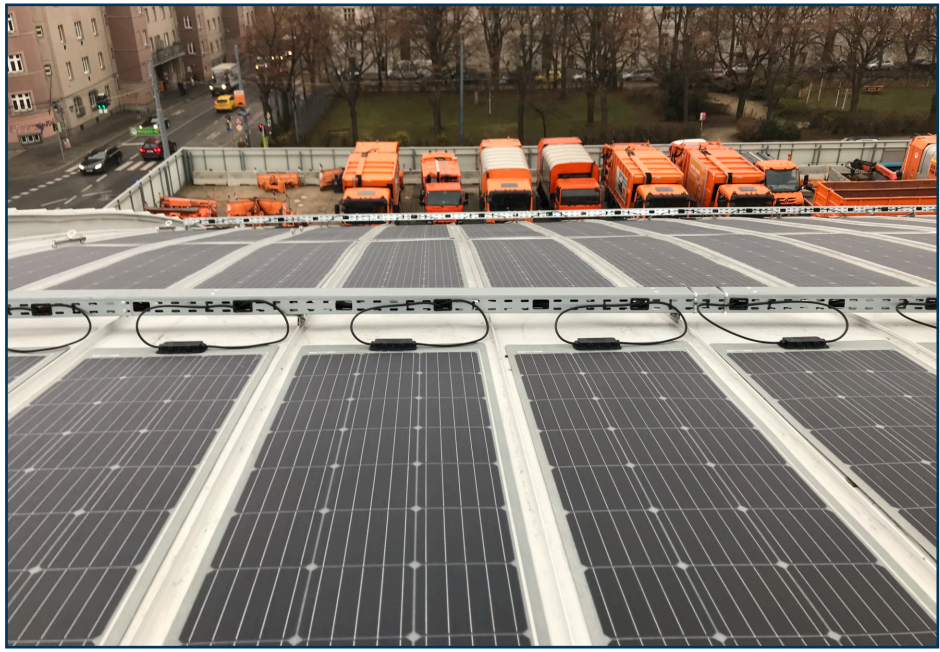
More and more companies rely on the energy of the sun and thus make their contribution to CO2 neutrality.

So does the MA 48 on its large, vaulted carriage hall. Due to the low load capacity of the arched roof, conventional glass modules are too heavy and therefore unsuitable.

Thanks to the DAS Energy modules, which are up to 8 times lighter, 996 DAS Energy modules now achieve a total output of 170 kWp and save 47 tons of CO2. Year for year.

What you see here is a thermographic examination and visual inspection by DAS Energy experts. This examination and registration are a prerequisite for an extended product warranty.

Ultralight, flexible, individual



German tool manufacturer Trumpf installation of 10,000 PV modules

The largest DAS Energy-Kalzip project to date has now been successfully completed after several months of work and is already delivering clean solar power.

KALZIP GmbH and DAS Energy worked together successfully on the roofs of the company and production halls of the German company Trumpf in Ditzingen.

The flexible DAS Energy PV modules were able to impress in terms of performance, lightness (3.3 kg/m2) and shape.

The modules were adapted to the desired size for the architecturally well-integrated solar roof of the German tool manufacturer Trumpf.

The challenge of this project was to design the special roofing elements from the Kalzip company on the Trumpf production halls efficiently and aesthetically and to achieve the highest possible yield.

The roof landscape, consisting of a slightly pitched gable roof and a butterfly roof, each with a 5° gradient, was fitted with over 10,000 DAS Energy PV modules (12x2 Project PV modules) covering a total area of 15,200 m2.



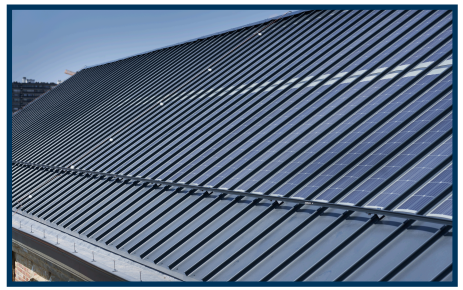
protected historic buildings and areas universal PV modules for an aesthetic cityscape

Many cities have protected historical buildings or areas that are central to their identity. In Vienna, buildings have been protected from demolition or changes in character since 1972 in an attempt to safeguard the historic appearance of the city.

DAS Energy PV modules can however be installed on these protected monuments. The appearance of the building from the city remains unchanged, as the modules are integrated into the roof. Weighing only 3.3 kg/m2, the panels are also suited to older roofs with a limited carrying capacity.









PV system for 400–year–old Dominican Monastery in Mechelen, Belgium

Innovative Solartechnologie und Denkmalschutz sind vereinbar - das demonstriert aktuell dieses einzigartige Projekt in Belgien - auf dem 400 Jahre alten Dominikanerkloster "Het Predikheren" in Mechelen wurde diesen Sommer eine 21 kWp PV-Anlage installiert.



unobtrusive, powerful and weatherproof

AluPlusSolar – profiled panels from Kalzip with lightweight (3.3 kg/m2) integrated photovoltaic modules from DAS Energy – were installed on the roof of the monastery. In this way, a total of 180 highly efficient 12x2M 120Wp solar modules were installed over an area of 160m2, providing an installed capacity of 22 kWp.

Since the Kalzip 50/444 profile which has been used, has the modules interconnected on the rear side, a high level of weather protection is guaranteed throughout the year, an important point for historic renovation projects.

Diamond Aircraft & Austro Engine Austria

1,2 MWp

Flat roof, membrane

Direct bonding, Innotec Versabond



Installed capacity: 3,3 MWp

74 Gas Stations



DAS Energy on the roof of Freiburg University



Standbar Herrmann
Vienna – Austria

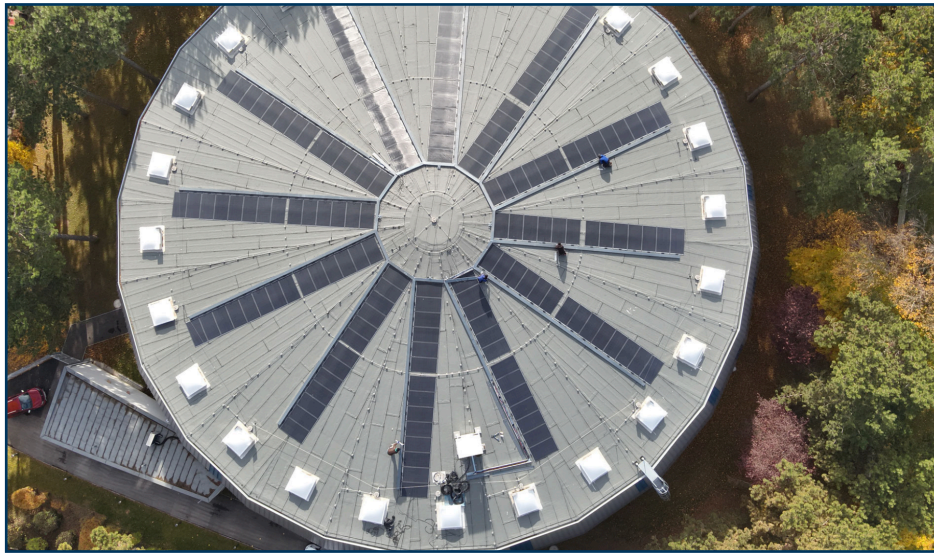


Vienna's futuristic Sport Halls

Since their construction, the round sports halls have been a place of exercise and togetherness for countless children and young people in Vienna. With up to 1400 m2, they offer sufficient space for sporting activities and can accommodate up to 400 spectators.

The integration of solar energy into this renovation project not only increases energy efficiency, but also represents an important step towards sustainability and environmental protection.

The PV systems were installed on behalf of Wien Energie and show once again that the combination of modern energy generation and the preservation of architectural masterpieces from times gone by, as well as innovation and tradition, can go hand in hand.



Atzgersdorf Sports Hall

The modernization of the six municipal Ufo-like round gyms from the 1970s is progressing. The Atzgersdorf sports hall at Steinergasse 22 and the Simmering sports hall at Florian-Hedorfer-Strasse 24 were recently officially opened - each with an installed roof capacity of 54 kWp. Lightweight and flexible DAS Energy photovoltaic modules for direct bonding to foil roofs were used.

Although they are no longer the most practical construction method today, these architectural treasures from the 1970s still exude an incomparable aesthetic.

Above all, the combination of the round roof surfaces and the star-shaped PV systems gives the sports facilities a modern science fiction look.



energy refurbishment for Bad Honnef Sports Hall

62 tons of CO2 emissions are to be saved by the newly renovated sports hall in the south of Germany, because the city's goal is not only to promote sports, but also to protect the climate.

Thus, in the course of the energy renovation, lightweight & flexible DAS Energy PV modules were integrated into the new AluPlusSolar roof covering from Kalzip.

In this way, a total of 614 DAS Energy PV modules of the type 12x2M 120Wp from Werhand GmbH & Co were installed. The installed capacity of the PV system is 74 kWp.



Ice World
Stuttgart – Germany

297 kWp

DAS Energy 11x6M FJB 330 Wp

Bitumen roof, metal standing seam roof

DAS Energy modules were bonded directly to the film surface



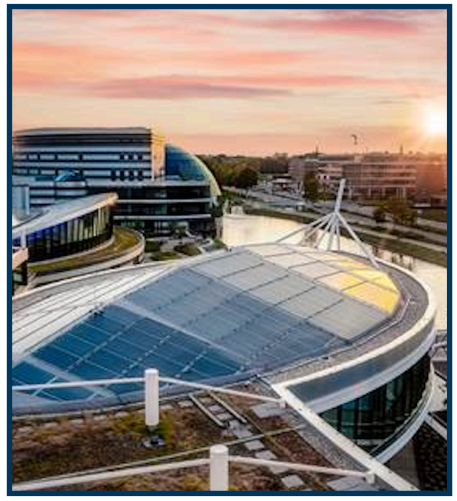
Rostock Harbor relies on DAS Energy PV modules

DAS Energy Modules guarantee a permanently high level of energy generation even for locations with high salt and ammonia gas concentrations.

A port building in Rostock took advantage of this in February 2020. 360 ultra-light DAS Energy PV modules were installed on the roof of a building in the port of Rostock.

In addition to their light weight, DAS Energy PV modules have other advantages for regions with harsh weather conditions.





Tech Park – Theater
Afas Stadium
Utrecht
Netherlands







Wiener Linien – Austria

metro / railway stations

Type of roof: Flat roof, Bitumen membrane, roof with low load-bearing capacity

Mounting system: Innotec Versabond, glued directly onto the bituminous membrane



Klingele Papierwerke relies on DAS Energy PV modules

Sustainability is nothing new for the packaging company Klingele in Germany. For years, it has invested in the principle of sustainability along the entire value chain; from packaging development - and production, to the selection of machinery and materials, and of course recycling. The sustainable electricity for the production comes from its own mix of different renewable energy sources such as wind energy, power plant and photovoltaics.

DAS Energy is all the more pleased to be part of Klingele's sustainable energy concept. In spring, DAS Energy's installation team installed 1777 11x6M 330kW PV modules on the industrial roof of the corrugated cardboard plant in Germany within one month. With a generator area of 2606 m2, this achieves 445 kWp of installed power.



The light and flexible PV modules were directly glued to the roof cladding (PVC foil). This type of installation shortens the working time many times over and allows easy handling.

The PV modules can now save up to 146 tons of CO2 per year - DAS Energy is pleased to be part of a successful sustainability concept.

Vöslauer Mineralwasser GmbH regional photovoltaic citizen participation model

At the end of 2022, the second large photovoltaic system on the roof, was successfully completed and commissioned in December.

Since then, the lightweight and flexible DAS Energy solar modules of type 11x6M 330Wp have already produced 51.92 MWh and saved 17,160 tons of CO2 emissions.

A total of 1344 PV modules were directly bonded to the foil roof, resulting in an installed capacity of 433 kWp.

Jointly expanding green energy for a climate-neutral futur

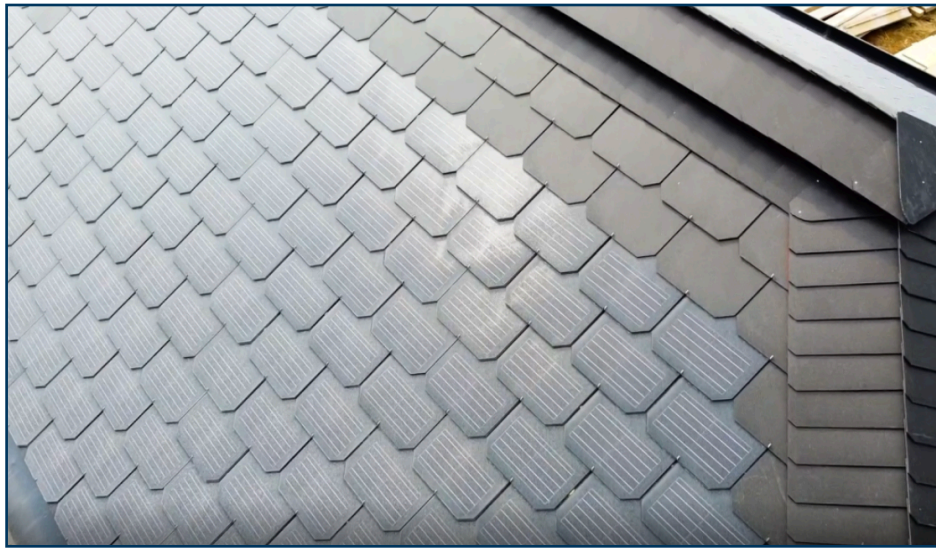


DAS Energy solar roof PV module for roofs with double covering

With the latest product development, DAS Energy has achieved the perfect combination of sustainable electricity production and an aesthetic roof landscape.

The aim was to tie in with the ecological and sustainable construction of the fiber cement panels that are widespread in Austria and to develop a suitable photovoltaic solution.

The result is an innovative roof panel PV module that accelerates the roofing process with its low weight and innovative design.



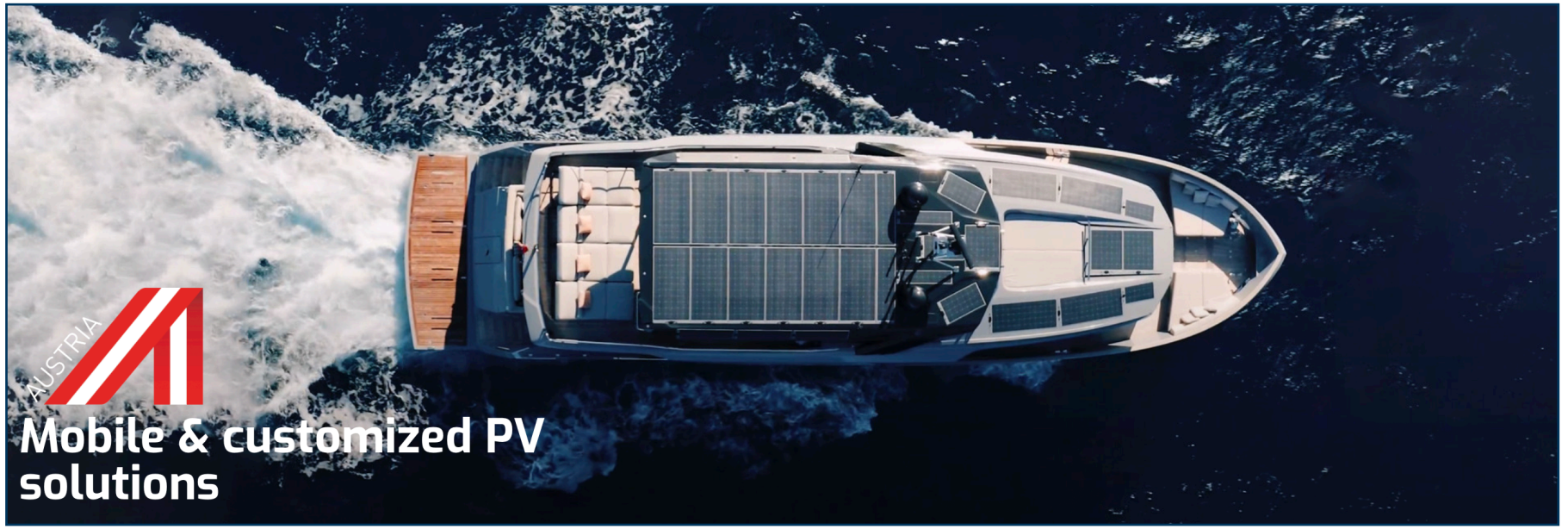
special PV solutions mobile and customer– tailored

We always want to push our technology forwards. To us that means: photovoltaic solutions that adapt to your requirements.

We work in close cooperation with our clients in order to achieve optimum results, placing great importance on the high standards of our photovoltaic technology and your individual requirements.

DAS Energy offers a wide range of products that combine great aesthetics with functionality.





PV for Boats and Yachts
Energy–Independent on Board

DAS Energy PV modules for the maritime sector are designed to withstand the weather conditions at sea and ensure continuous high energy generation at locations with high salt and ammonia gas concentrations.

The PV modules can be glued directly to the surface or sewn into fabric / canvas / bimini.



DAS Energy PV modules guarantee permanently high energy generation even for locations with high salt and ammonia gas concentrations.

maritime PV applications
stand–alone energy on board

In 2016, DAS Energy received the double standard salt mist corrosion testing certificate according to IEC 61701 (Class 6) by TÜV Nord. The method of mounting the DAS Energy PV modules is an additional advantage in windy coastal regions.

Because the modules are glued to the metal without additional affixing materials, they offer no area exposed to the wind.



maritime PV applications
stand–alone energy on board

DAS Energy UNIVERSAL PV modules are not only high performance modules that ensure energy independence on yachts and boats, but have also been designed with the special weather conditions at sea in mind.

The modules guarantee sustained high energy production even in locations with high concentrations of salt and ammoniac gas.



mobile PV solutions for vehicles
PV solutions for campers

DAS Energy combines good looks with functionality, allowing you to customise the size, shape and colour of the modules, and the modules can conform to the contours of almost any surface.



mobile PV solutions for vehicles
PV solutions for campers

Using solar power in boats, tents, containers, golf carts and any other vehicles is a massive challenge.



solar roof for your golf cart
stand–alone mobility

In times of the energy turnaround, solar technology is also gaining more and more importance on golf courses.

DAS Energy has developed a perfect photovoltaic solution especially for golf carts, which is suitable for common golf cart models (Club Car, E-Z-Go, etc.).

The lightweight yet robust solar roof allows roof installation with minimal effort and offers golfers an efficient and aesthetic solution for sustainable energy generation.



golf courses – resorts – parks – airports – industries – stadiums – everywhere…

noise protection as a solar power station

This is what happens when two innovative companies from Lower Austria develop a product idea together - high-quality design with a double function. The ulmerwelle® was developed by the company Calma-Tec in Mödling for the city of Ulm.

Thanks to its innovative design, it protects the best trees in difficult terrain and at the same time offers maximum noise protection.

Through the cooperation with DAS Energy, the ulmerwelle® has now been further developed into a solar power plant. The light and flexible universal module from DAS Energy adapts perfectly to the wavy shape of the noise barrier and, with energy generation of up to 370 Wp, is also ideal for rough road conditions such as motorways.



solar power for OEBB

The photovoltaic technology from DAS Energy stands out due to its flexible application possibilities. The modules are thin, light, flexible and robust. Compared to previous photovoltaic technologies, they adapt better to the architecture and can be integrated into other structures.

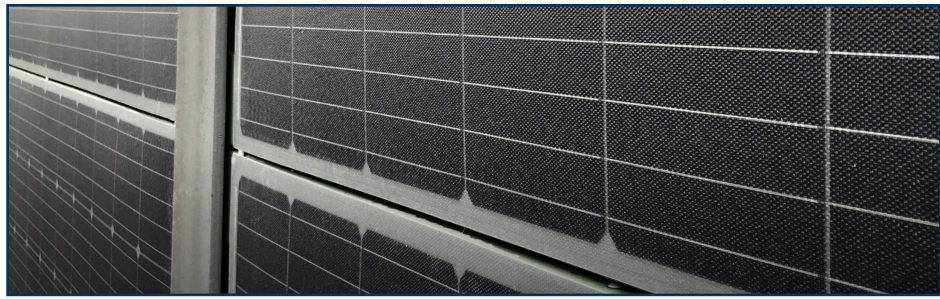
"The challenge for tomorrow's energy supply is that innovative solutions and approaches are needed today," says Christian Dries, founder of DAS Energy. This is also the case with the pilot project in Tullnerfeld. The photovoltaic modules were built into the existing structure of the ÖBB.

noise barrier or solar power plant

There is hardly any visual difference. Due to the new assembly system, the junction boxes and the cabling disappear in a barely visible cable duct. The cells can be glued in around three minutes per module.

The adhesive technology has an additional benefit. This compensates for the vibration caused by train traffic. DAS Energy's technology is vibration-resistant due to the elasticity of the adhesive. This is because it remains soft.

The noise reduction is not affected by the installation of the photovoltaic system. It is therefore not an either / or question of whether a noise barrier or a solar power system. Both are possible in one.



the electricity of the future
the flexible technology for
an energy transition





A wind turbine glued with photovoltaic cells - what sounds so simple, requires top technical performance. This innovation is made possible by a special property of the photovoltaic cells from DAS Energy. In contrast to conventional photovoltaic systems, the films from the Austrian company are flexible and adapt to the shape of the tower.

“Photovoltaics is generally one of the most environmentally friendly technologies, but it requires a lot of space. Our goal is to make as many areas as possible usable in order to deliver the electricity of the future! ”Says Dr. Johannes Srajer, managing director of DAS Energy.

30 solar panels with an area of 60 square meters are installed on the 80 meter high tower of the wind turbine. They face southeast and southwest to capture the maximum amount of solar radiation during the day. The turbines inside the wind turbine, among other things, are operated by the additional electricity.



working against climate change

“It is especially important to invest in times of crisis.
And it is also important to successfully master the energy transition in order to slow down climate change ”.

The pilot project in Weiden am See is an example of how innovation can become an investment.

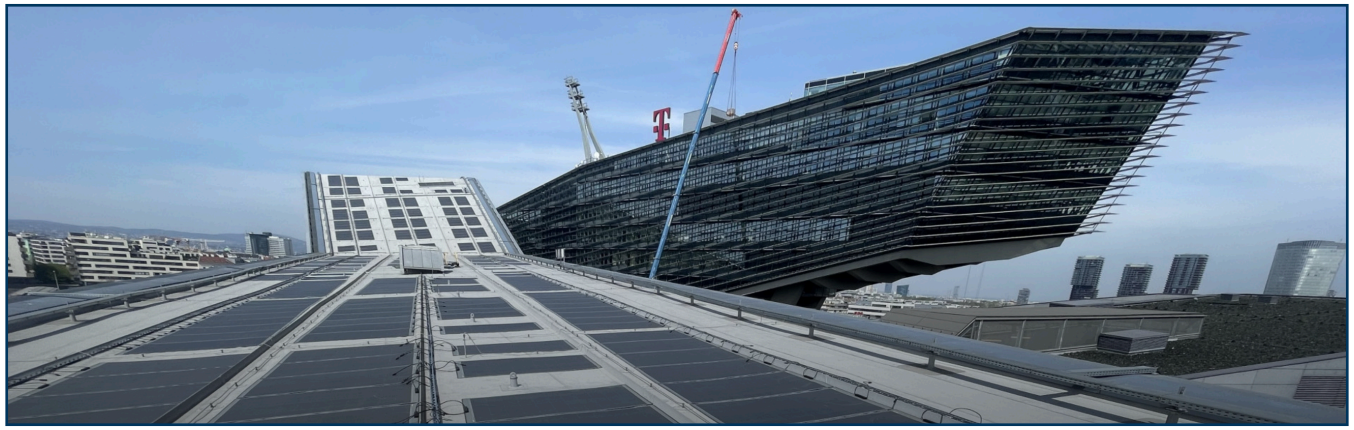




Switzerland

intelligent tracking system

DAS Energy showcases an innovative PV facade project on a commercial building. Thanks to the slats' intelligent tracking system the 58.7 kWp installation can achieve an annual yield of up to 76,000 kWh. Various customized PV module formats were used.



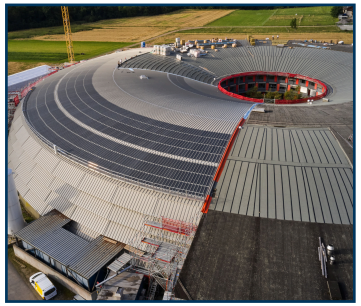
Magenta's T-center roof

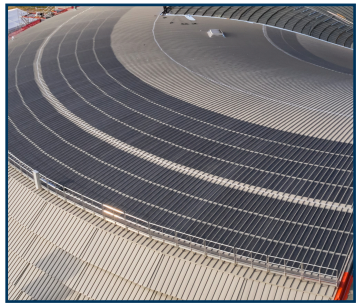


Unique Installations

Switzerland

Power Plant at the Paul Scherrer Institute




Facades

advantages:

- **Direct bonding:** No substructure required, reduces installation time and effort.
- **Flexibility:** The modules can be bonded directly to various surfaces such as metal systems and glass.
- **Low weight:** Ideal for façades with limited load-bearing capacity (between 4 and 8 kg per module).
- **Aesthetics:** Ultra-thin, black PV modules for modern, unobtrusive façade integration.
- **Damage-free installation:** No holes or damage to the surface of the building.
- **Optional substructure:** If required, substructures can also be used, e.g. for a rear junction box.
- **Versatility:** Suitable for facades with difficult structural or physical requirements.



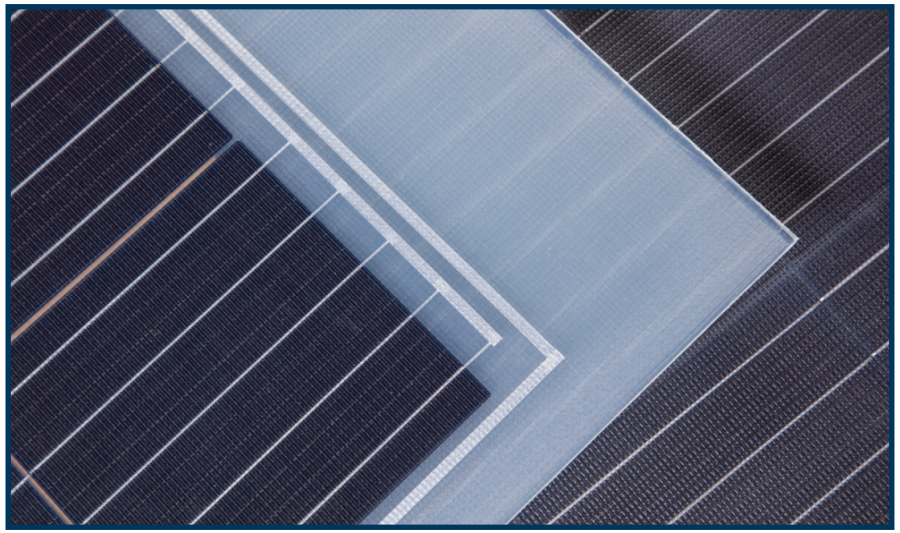
the new HYBRID PV modules

Innovation for the future

The latest highlight from the forge workshop of DAS Energy combines high cost-effectiveness with the optimum PV format for standing seam roofs.

more power thanks to half–cell technology

The high-performance M10 half-cells mark an important step in the development of efficient and powerful solar technologies, because compared to the M3 cells, the M10 cells offer significantly higher efficiency and better performance per square meter - more electricity with the same surface area!





the light & flexible balcony power system. Start your own energy production

With the flexible and lightweight solar innovation from Austria, electricity production on the balcony becomes even easier and more convenient!

cost–effective with DIY installation “do it yourself”



balcony power only 4,5 kg or 6 kg / panel

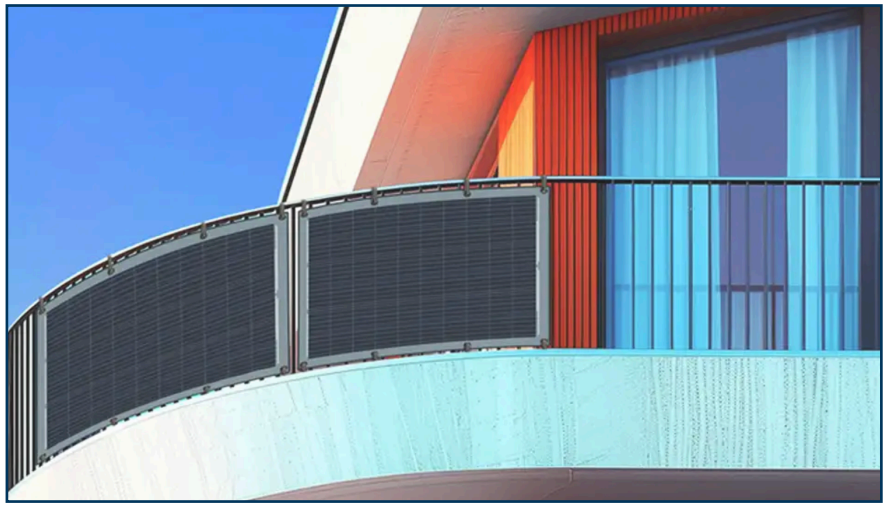
DAS Energy balcony power plants have the advantage that they weigh only a few kilos and are therefore easier to attach to the railing. Once the module is mounted, all you have to do is plug it into a socket - and you're done! Your own electricity production can begin.



the light & flexible balcony power system. Start your own energy production

With the flexible and lightweight solar innovation from Austria, electricity production on the balcony becomes even easier and more convenient!

cost–effective with DIY installation “do it yourself”



balcony power only 4,5 kg or 6 kg / panel

DAS Energy balcony power plants have the advantage that they weigh only a few kilos and are therefore easier to attach to the railing. Once the module is mounted, all you have to do is plug it into a socket - and you're done! Your own electricity production can begin.

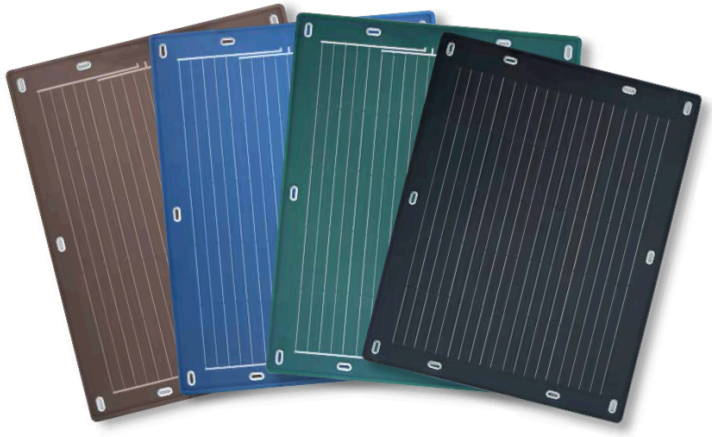
ENERGY SQUARE

Experience energy in color

Versatile mobile photovoltaic module DAS Energy QUADRAT is an extremely versatile photovoltaic module for a wide range of applications: Balcony power station: Bring color to your balcony! Mobile energy source for camping and boating Aesthetic integration into the design of buildings and structures The choice of colors makes it possible to use solar modules in different environments and situations. For example, they can be used in urban areas, where aesthetics play an important role, or in rural areas, where they blend in better with the natural surroundings. The colorful Energy squares are also available without eyelets for gluing.



In addition, DAS Energy QUADRAT is easy to install and transport thanks to its 1 m^2 format





BLACK & COLOUR editions

330 Wp | 120 Wp | 100 Wp

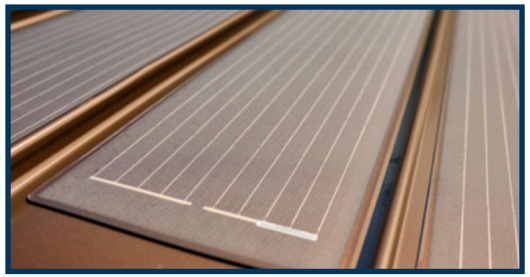
Black PV modules are designed to meet aesthetic demands in architecture. The variety of module sizes provides greater creative freedom with their dark color scheme and are used in architectural applications and the protection of historic ensembles.

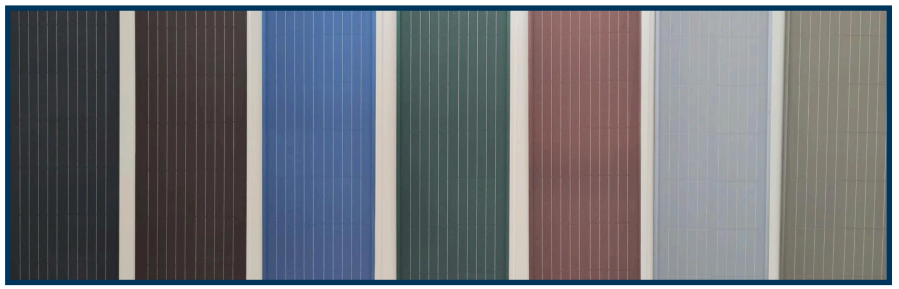
HYBRID module

330 Wp | 120Wp

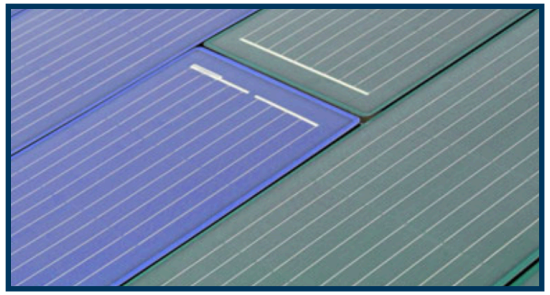
The best of both worlds – with a weight of only 7 kg/m², the Hybrid PV module remains lightweight and can be installed on roofs with lower load-bearing capacity. It offers a wide range of application options: direct bonding to trapezoidal sheet systems, installation on flat roofs (bitumen or membrane), and on facades

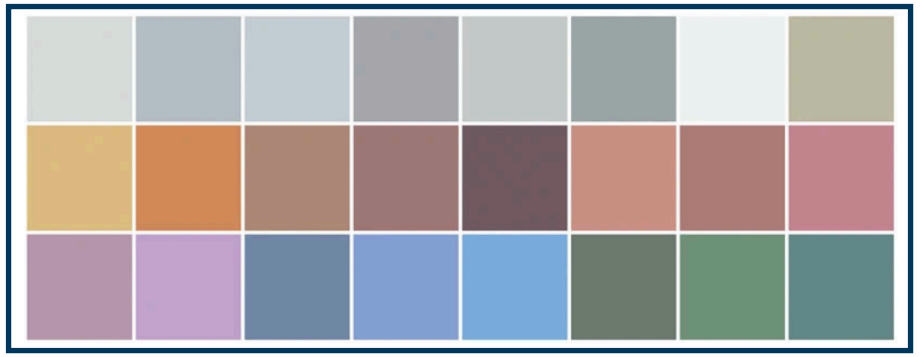
cost–effective with DIY (do it yourself) installation





Unique colour palette to meet your architectural challenges





LIGHT & FLEXIBLE
110 Wp | 964x830 mm
only 3,3 kg / module

NO RADAR SIGNATURE, NO HEAT SIGNATURE, NO REFLECTION

EASY & FAST INSTALLATION

ROBUST & VERSATILE

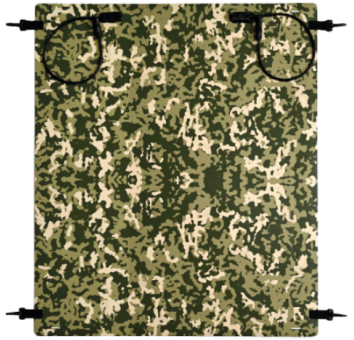
FLEXIBLE MOUNTING OPTIONS

DEVELOPED AND MANUFACTURED IN AUSTRIA





front side



camouflage rear side

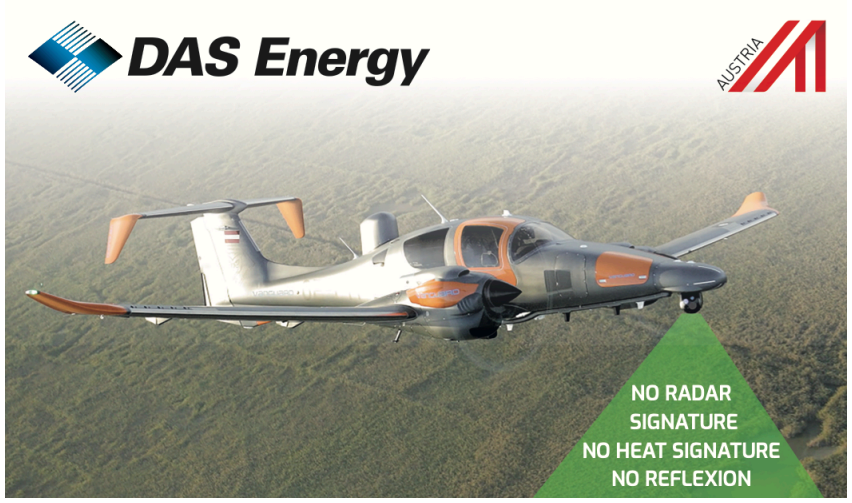
the future of military solar power

world's only

Solar Shield 110

Discover the groundbreaking Solar Shield 110W, a military-grade solar panel designed for stealth and efficiency. These lightweight, ultra-thin panels are easily installed with clips, featuring no radar signature, reflection, or heat signature. With a non-reflective dark green front and a camouflage back, this Austrian-made innovation is perfect for tactical operations. Watch as it connects seamlessly to a mobile power station, providing energy to charge essential field equipment.

Power: 110 Wp; Size: 964 x 830 mm









world's only

Angewandte Forschung

„DAS ENERGY SOLAR SHIELD" IM TEST BEI DER #WALD4TEL25

Technologie spielt eine entscheidende Rolle in der modernen Kampfführung, nicht nur in Bezug auf Waffen und Ausrüstung, der Kommunikation und Aufklärung, sondern auch jener Technologie, die in den unterschiedlichsten Einsätzen maßgeblich die Rahmenbedingungen sicherstellt, um taktische und strategische Aufgaben erfüllen zu können.

Störung und Zerstörung der Energieinfrastruktur wie Kraftwerke, Umspannwerke und Stromnetze zählen neben klassischen militärischen Zielen zu den priorisierten Angriffszielen.

Das Österreichische Bundesheer ist somit ein wichtiger Innovationstreiber für viele zivile Unternehmen für die Entwicklung von Ausrüstung und Ausstattung, so auch für das Unternehmen „DAS Energy" mit Firmensitz in Wiener Neustadt.

DAS ENERGY SOLAR SHIELD 110 WP PV-MODUL

Das DAS Energy Solar Shield 110 Wp PV-Modul wurde speziell für mobile und taktische Anwendungen unter Extrembedingungen für militärische Einsätze entwickelt. Mit einem Gewicht von nur 3,3?kg, kompakten Abmessungen und einer Dicke von nur 3,5?mm ist es ultraleicht, flexibel und robust – ideal für den schnellen Einsatz im Feld.

Gefertigt aus glasfaserverstärkten Verbundmaterialien, ist das Solar Shield widerstandsfähig gegen Hagel, UV-Strahlung, Sand, Wasser, extreme Temperaturen und Beschuss. Es eignet sich für den Einsatz auf Zelten, Fahrzeugdächern, Fahrzeugplanen und Tarnnetzen, sowie Containern – ideal für netzunabhängige Energieversorgung im Einsatz.

Im Zuge der Ausbildungsübung WALDVIERTEL 25 am Truppenübungsplatz Allentsteig wurden mit Unterstützung der übenden Truppe, unterschiedliche Einsatzszenarien der DAS Energy Solar Shield 110 Wp PV-Module, gemeinsam mit einer EcoFlow DELTA 3 Powerstation (Solarbatterie) getestet.





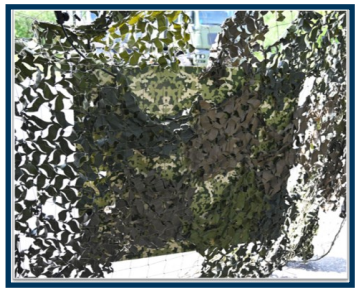


the future of military solar power

Energy supply for emergency vehicles and command posts

Reliable energy supply for ambulances to maintain vital systems, such as ventilators, medication cooling, communication and monitoring equipment – in mobile and stationary use.







camouflage pattern on the back can be optionally adapted to the area of use

hybrid roof modules

monocrystalline PERC cells
No thin film!

Matt finish for no reflection
UV & salt resistant

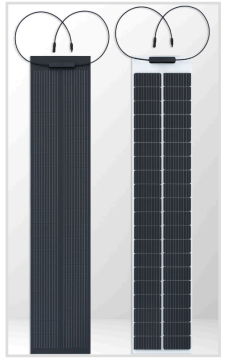
Simple but strong adhesive bonding
No metal subsystem required
No ballast required

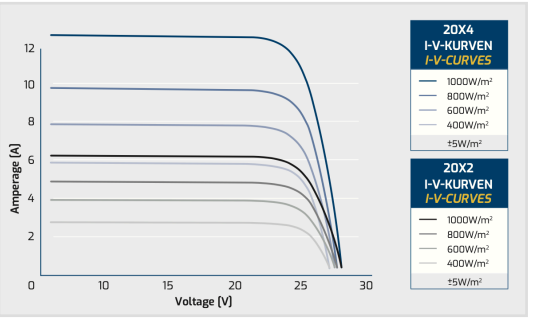
Maximal micro-crack protection
increased longevity

Stable performance in heat, storm and dust

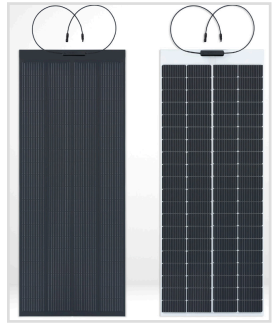
TEMPERATUREIGENSCHAFTEN *THERMAL CHARACTERISTICS*	
Betriebstemperaturbereich *Operating temperature range*	-40°C bis +85°C
Temperaturkoeffizient von Pmpp *Temperature coefficient Pmpp*	-0,39 % / °C
Temperaturkoeffizient von Voc *Temperature coefficient Voc*	-0,33 % / °C
Temperaturkoeffizient von Isc *Temperature coefficient Isc*	+0,06 % / °C

140 Wp 20x2
transparent & black





280 Wp 20x4
transparent & black



Name	Leistung *Power*	Halbzellen *Half-Cut cells*	Modullänge *Module length*	Modulbreite *Module width*	Modulgewicht *Module weight*	Voc (V)	Vmpp (V)	Impp (A)	Isc (A)
20x2 FJB*	**140 Wp**	40	2,000 mm	400 mm	4,60 kg	28,01	23,64	5,91	6,25
20x4 FJB*	**280 Wp**	80	1,995 mm	795 mm	9,10 kg	28,00	23,64	11,83	12,49

composite super light modules

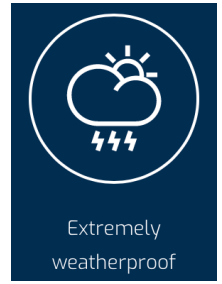
huge variety of possible sizes

LÄNGE / *LENGTH* FJB & RJB	STÄRKE / *THICKNESS* 3 MM ± 0,3 = 1	STÄRKE / *THICKNESS* 3 MM ± 0,3 = 2	STÄRKE / *THICKNESS* 3 MM ± 0,3 = 3	STÄRKE / *THICKNESS* 3 MM ± 0,3 = 4	STÄRKE / *THICKNESS* 3 MM ± 0,3 = 5
20	**20 x 1 M 70 Wp** **1.958x230 mm** 14,0 Voc / 11,82 Vmpp 6,25 Isc / 5,91 Impp	**20 x 2 M 140 Wp** **1.958x418 mm** 28,0 Voc / 23,64 Vmpp 6,25 Isc / 5,91 Impp	**20 x 3 M 210 Wp** **1.958x612 mm** 42,0 Voc / 35,46 Vmpp 6,25 Isc / 5,91 Impp	**20 x 4 M 280 Wp** **1.958x788 mm** 28,0 Voc / 23,64 Vmpp 12,49 Isc / 11,83 Impp	**20 x 5 M 345 Wp** **1.987x1.014 mm** 35,0 Voc / 29,55 Vmpp 12,49 Isc / 11,83 Impp
18	**18 x 1 M 63 Wp** **1.772x230 mm** 12,6 Voc / 10,64 Vmpp 6,25 Isc / 5,91 Impp	**18 x 2 M 126 Wp** **1.772x418 mm** 25,2 Voc / 21,28 Vmpp 6,25 Isc / 5,91 Impp	**18 x 3 M 189 Wp** **1.772x612 mm** 37,8 Voc / 31,91 Vmpp 6,25 Isc / 5,91 Impp	**18 x 4 M 252 Wp** **1.772x788 mm** 25,2 Voc / 21,28 Vmpp 12,49 Isc / 11,83 Impp	**18 x 5 M 315 Wp** **1.801x1.014 mm** 31,5 Voc / 26,6 Vmpp 12,49 Isc / 11,83 Impp
16	**16 x 1 M 56 Wp** **1.586x230 mm** 11,2 Voc / 9.46 Vmpp 6,25 Isc / 5,91 Impp	**16 x 2 M 112 Wp** **1.586x418 mm** 22,4 Voc / 18,91 Vmpp 6,25 Isc / 5,91 Impp	**16 x 3 M 168 Wp** **1.586x612 mm** 33,6 Voc / 28,37 Vmpp 6,25 Isc / 5,91 Impp	**16 x 4 M 224 Wp** **1.586x788 mm** 22,4 Voc / 18,91 Vmpp 12,49 Isc / 11,83 Impp	**16 x 5 M 280 Wp** **1.615x1.014 mm** 28,0 Voc / 23,64 Vmpp 12,49 Isc / 11,83 Impp
14	**14 x 1 M 49 Wp** **1.400x230 mm** 9,8 Voc / 8,27 Vmpp 6,25 Isc / 5,91 Impp	**14 x 2 M 98 Wp** **1.400x418 mm** 19,6 Voc / 16,55 Vmpp 6,25 Isc / 5,91 Impp	**14 x 3 M 147 Wp** **1.400x612 mm** 29,4 Voc / 24,82 Vmpp 6,25 Isc / 5,91 Impp	**14 x 4M 196 Wp** **1.400x788 mm** 19,6 Voc / 16,55 Vmpp 12,49 Isc / 11,83 Impp	**14 x 5 M 245 Wp** **1.429x1.014 mm** 24,5 Voc / 20,69 Vmpp 12,49 Isc / 11,83 Impp
12	**12 x 1 M 42 Wp** **1.214x230 mm** 8,4 Voc / 7,09 Vmpp 6,25 Isc / 5,91 Impp	**12 x 2 M 84 Wp** **1.214x404 mm** 16,8 Voc / 14,18 Vmpp 6,25 Isc / 5,91 Impp	**12 x 3 M 126 Wp** **1.214x598 mm** 25,2 Voc / 21,28 Vmpp 6,25 Isc / 5,91 Impp	**12 x 4 M 168 Wp** **1.214x772 mm** 33,6 Voc / 28,37 Vmpp 6,25 Isc / 5,91 Impp	**12 x 5 M 210 Wp** **1.214x970 mm** 42,0 Voc / 35,46 Vmpp 6,25 Isc / 5,91 Impp
11	**11 x 1 M 38 Wp** **1.122x230 mm** 7,7 Voc / 6,5 Vmpp 6,25 Isc / 5,91 Impp	**11 x 2 M 77 Wp** **1.122x404 mm** 15,4 Voc / 13,0 Vmpp 6,25 Isc / 5,91 Impp	**11 x 3 M 115 Wp** **1.122x598 mm** 23,1 Voc / 19,5 Vmpp 6,25 Isc / 5,91 Impp	**11 x 4 M 154 Wp** **1.122x772 mm** 30,8 Voc / 26,0 Vmpp 6,25 Isc / 5,91 Impp	**11 x 5 M 192 Wp** **1.122x970 mm** 38,5 Voc / 32,51 Vmpp 6,25 Isc / 5,91 Impp
10	**10 x 1 M 35 Wp** **1.028x230 mm** 7,0 Voc / 5,91 Vmpp 6,25 Isc / 5,91 Impp	**10 x 2 M 70 Wp** **1.028x404 mm** 14,0 Voc / 11,82 Vmpp 6,25 Isc / 5,91 Impp	**10 x 3 M 105 Wp** **1.028x598 mm** 21,0 Voc / 17,73 Vmpp 6,25 Isc / 5,91 Impp	**10 x 4 M 140 Wp** **1.028x772 mm** 28,0 Voc / 23,64 Vmpp 6,25 Isc / 5,91 Impp	**10 x 5 M 175 Wp** **1.028x970 mm** 35,0 Voc / 29,55 Vmpp 6,25 Isc / 5,91 Impp
9	**9 x 1 M 31 Wp** **936x230 mm** 6,3 Voc / 5,32 Vmpp 6,25 Isc / 5,91 Impp	**9 x 2 M 63 Wp** **936x404 mm** 12,6 Voc / 10,64 Vmpp 6,25 Isc / 5,91 Impp	**9 x 3 M 94 Wp** **936x598 mm** 18,9 Voc / 15,96 Vmpp 6,25 Isc / 5,91 Impp	**9 x 4 M 126 Wp** **936x772 mm** 25,2 Voc / 21,28 Vmpp 6,25 Isc / 5,91 Impp	**9 x 5 M 157 Wp** **936x970 mm** 31,5 Voc / 26,6 Vmpp 6,25 Isc / 5,91 Impp
8	**8 x 1 M 28 Wp** **842x230 mm** 5,6 Voc / 4,73 Vmpp 6,25 Isc / 5,91 Impp	**8 x 2 M 56 Wp** **842x404 mm** 11,2 Voc / 9,46 Vmpp 6,25 Isc / 5,91 Impp	**8 x 3 M 84 Wp** **842x598 mm** 16,8 Voc / 14,18 Vmpp 6,25 Isc / 5,91 Impp	**8 x 4 M 112 Wp** **842x772 mm** 22,4 Voc / 18,91 Vmpp 6,25 Isc / 5,91 Impp	**8 x 5 M 140 Wp** **842x970 mm** 28,0 Voc / 23,64 Vmpp 6,25 Isc / 5,91 Impp
7	**7 x 1 M 24 Wp** **750x230 mm** 4,9 Voc / 4,14 Vmpp 6,25 Isc / 5,91 Impp	**7 x 2 M 49 Wp** **750x404 mm** 9,8 Voc / 8,27 Vmpp 6,25 Isc / 5,91 Impp	**7 x 3 M 73 Wp** **750x598 mm** 14,7 Voc / 12,41 Vmpp 6,25 Isc / 5,91 Impp	**7 x 4 M 98 Wp** **750x772 mm** 19,6 Voc / 16,55 Vmpp 6,25 Isc / 5,91 Impp	**7 x 5 M 122 Wp** **750x970 mm** 24,5 Voc / 20,69 Vmpp 6,25 Isc / 5,91 Impp
6	**6 x 1 M 21 Wp** **656x230 mm** 4,2 Voc / 3,55 Vmpp 6,25 Isc / 5,91 Impp	**6 x 2 M 42 Wp** **656x404 mm** 8,4 Voc / 7,09 Vmpp 6,25 Isc / 5,91 Impp	**6 x 3 M 63 Wp** **656x598 mm** 12,6 Voc / 10,64 Vmpp 6,25 Isc / 5,91 Impp	**6 x 4 M 84 Wp** **656x772 mm** 16,8 Voc / 14,18 Vmpp 6,25 Isc / 5,91 Impp	**6 x 5 M 105 Wp** **656x970 mm** 21,0 Voc / 17,73 Vmpp 6,25 Isc / 5,91 Impp
STÄRKE / *THICKNESS* 3 MM ± 0,3	1	2	3	4	5
	BREITE / *WIDTH* FJB & RJB				

unique hybrid flex panels







Extremely simple Installation

The modules are bonded directly to the sheet metal, bitumen, glass or membrane roof.

Glare-free, ideal for applications near Airports

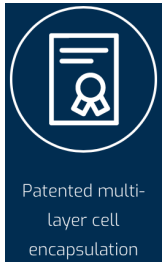
Trapeze and Standing Seam Roofing

Many application possibilities

Lightweight and flexible

Patented technology







Flexibility and lightness make them ideal for roofs with low load-bearing capacities.

40 Years of Performance Guaranteed

Flat roofs and facades

Bitumen and membrane surfaces

Protected Historic Buildings and Areas

Universal PV modules for an aesthetic cityscape

Any size and shape





The photovoltaic modules enable almost limitless applications - directly integrated into architecture (facades, roof foils), applicable in statically difficult situations (e.g. flat roofs), including on listed buildings, or for mobile use such as campers and yachts.



GREECE - CYPRUS

GREEN GROUPS

Athens

sales@green-groups.com
www.green-groups.com

+30 210 444 1656

Athens Warehouse
GR-19400

Athens International Airport
"El. Venizelos" Attiki Odos

Thessaloniki Warehouse
GR-57009
Thessaloniki National Road

Limassol

sales@green-groups.com
www.green-groups.com

3095 Limassol

Limassol Warehouse
3015 Limassol

