

Building integrated solar power

-Made in **Denmark**



DANISH SOLAR ENERGY LDT
Dansk Solenergi ApS

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UN complex - Roof top



Custom-made solution

- **MAJOR SAVING ON ROOF TOP OF UN BUILDING**
more than 1400 HEM-PV solar panels are placed at the roof of the UN building equaling electric savings of 30%
- **DANISH SOLAR ROOF MODULES**
All our panels are produced in our high technological, robot driven production facilities in Holeby Denmark.
- **HIGH PERFORMANCE**
We select and apply the best material available on the market to provide high quality performance solar systems
- **REFERENCE - UN City Complex**
Copenhagen

We design and deliver high quality roof solar solutions

Our solar panels for complete roof constructions are the ideal solution for an optimal use of solar energy. Decisive factors behind the award were the beautiful design of the installation and the high quality of the project and aesthetic expression.

By installing roof solar panels you will obtain substantial electricity saving that will return some or all of your investment over a number of years. By installing panels on full surface of your roof you can reduce the time of the return of investment.

For the areas that are not receiving enough

sunlight we normally install so called dummy slates, which does not include solar cells but provide the same aesthetic look.

We have developed special rubber strips to be installed between the panels that ensures an optimal flow of the rainwater.

Both the background material and the solar cells can be made in different colours, which give you more room for creativity.

Independent of which size you choose we give you 25 years of performance warranty and up to 12 years of material guarantee.



DANISH SOLAR ENERGY LDT
Dansk Solenergi ApS

Green energy in beautiful design

Solar energy offers architectural freedom

Danish Solar energy can design and produce solar panels that stand out architecturally. We emphasize that our partners have the opportunity to build something innovative and unique. We give our partners the opportunity to shape the desired solar panel, and of course we will guide and advise from, idea to realization.

Think photovoltaics into the design

By implementing solar cells already in the project idea phase, almost anything is possible! and there will be a significant financial saving, compared to installing them afterwards. by cooperating with Danish Solar Energy it is the imagination that sets the limits.



Unique design - Choose:

Panel Size
Cell Type -and color
Background Color
Material

Green energy in all colours

Danish Solar Energy offers our partners the opportunity to design your own solar panel. From the size of the panel and reflectance value, to the cell type and color. This allows you to select which type of cells to be used, and what color they should have. Furthermore, you are able to choose the colour of the rear, so that cells and background have the right interaction, both in terms of color and material. It is also possible to give the panel patterns. This provides a cooling effect on the panel, and thus increases efficiency. When integrating solar cells into windows, it is possible to determine the transparency levels.

When designing a solar panel, it must be decided whether it should be integrated into the building so as to minimize the visibility of the panels. Or the design of the building shall be based on a futuristic look, making the solar panels the first thing you see, for example, a green facade with polycrystalline cells (see right side of the image). To implement green energy in the building in this way, can rightly cement the architect's name in the industry, -and the building's green profile. We will jointly design the desired panel, where we will be an active

sparring partner who can advise in relation to aesthetic possibilities,

and make all the necessary calculations, so that the plant is not only beautiful to look at, but also works flawlessly. Building integrated photovoltaics are ideal to live up to the rules and quotas for energy that must be respected, and the building still need to retain the appearance. Recently, we have designed and produced transparent solar panels to Herlev Hospital in Denmark, which involved various types of cells and different sizes of glass. We provide not only solar panels. We can supply complete systems if desired. We will contact the installers, professionals and suppliers. Thus, we are simplifying our partners' communication.

With over 20 years experience in the industry, we have built an extraordinary 'know-how', and coped with challenges that seems impossible for most. All solar panels are manufactured at our factory in Denmark, built so that CO2 emissions are minimal in production. Despite the fact that we have the largest manufacturing facility for solar panels in Denmark, we are very flexible in relation to wishes and specifications.

SLATE ROOF INTEGRATION



Custom made BIPV solutions

- **RIGHT SIZE**

We size and produce the slate roof solar panel to fit your desired specifications

- **AESTHETIC LOOK**

Our slate roof solar panels are perfectly integrated in the roof construction preserving the aesthetic expression

- **HIGH PERFORMANCE**

We select and apply the best material available on the market to provide high performance solar systems

- **REFERENCES**

We have designed and deliver numerous high standard BIPV projects.

We design and deliver high quality BIPVs - Produced in Denmark

Danish Solar Energy (DSE) is proud to be the world's pioneer in designing and producing the first Building Integrated PVs. The BIPVs are designed to be integrated 100% in the roof construction matching the aesthetic architectonic expression of the roof.

Our slate roof solar panel solutions reduce your electricity expenses and Co2 emission dramatically.

These BIPV solutions are quite simple to integrate. Normally it takes only half

of the time that is required to install a standard solar panel solution.

You have the option to either apply DSE IBPV solutions as part of a renovation project or use the solution for a complete new roof construction.

Our high quality standard panel dimensions are 1605x400x5.5 mm. However we can size and produce panels in our high-tech, robot driven facilities to match exactly to your needs and requirements.

Facade Integration



Custom-made solutions

- **GREEN EXPOSURE**

Solar panels in the facade sends a strong green signal to the world

- **UNLIMITED POSSIBILITIES**

Offers architects a myriad of cutting-edge possibilities.

- **HIGH PERFORMANCE**

We use the market's highest-performance solar cells to achieve the best quality.

- **REFERENCE**

We have supplied solar panels for the facade of several municipal buildings

Together we will design the future - Made in Denmark

Solar cells integrated into the facade is the future of architecture. It provides a myriad of options in relation to the architectural design of the building. The solar panels can be as shading, or mounted horizontally on the building's facade. Sizes and design of the panels are often varying, Therefore we are manufacturing the panels in regard to the customers specifics. This gives all buildings where Danish Solar Energy have been involved,

a unique design. Businesses that are located in populated areas, can by integrating solar cells evident in the facade, send a strong signal giving them a green profile. This type of building integration provides an elegant and aesthetic alternative to regular photovoltaic panels.

Glass Integration



Custom-made solutions

- **SELECT GLASS and with reflection degree (RHEM200/400/600)**
We make the solar panel in the size glass that suits your project.
- **DETERMINE LIGHT INDICATION**
Choose how transparent the panel should be by determining cell distance and cell size.
- **HIGHEST PERFORMANCEE**
We use the market's highest performing solar cells to achieve the best performance.
- **REFERENCE**
Glass integrated system for Herlev Hospital

We have quality and design in focus - Made in Denmark

Transparent solar panels open up a world of opportunities for architects and provide a wealth of aesthetic possibilities.

By integrating the transparent solar panels into the building, a futuristic expression is achieved, while the panels help to comply with the energy frame.

By integrating solar cells into windows, constellation can also be used for solar shielding. We also recommend our transparent bifacial solar panels where addi-

tional energy production can be achieved by applying solar reflections.

We always use the best raw materials in the market, and are manufactured according to international certifications: IEC 61215 and EN 730.

When you work with Dansk Solenergi ApS, you will receive Denmark's largest solar panel manufacturer and more than 20 years of experience.

COMPLETE INTEGRATION

Custom-made solution

- **MAJOR SAVINGS IN NEW ROOF CONSTRUCTIONS**

New roof construction is not inexpensive. With complete solar energy roofs return of your investment is guaranteed.

- **DANISH SOLAR ROOF MODULES**

All our panels are produced in our high technological, robot driven production facilities in Holeby Denmark.

- **HIGH PERFORMANCE**

We select and apply the best material available on the market to provide high quality performance solar systems

- **REFERENCE** - Private house in Lyngby, Denmark.

We design and deliver high quality complete roof solar solutions

Our solar panels for complete roof constructions are the ideal solution for an optimal use of solar energy. The panels overlap each other in harmony, where the glass surface provides a futuristic and aesthetic expression.

By installing roof solar panels you will obtain substantial electricity saving that will return some or all of your investment over a number of years. By installing panels on full surface of your roof you can reduce the time of the return of investment.

For the areas that are not receiving enough

sunlight we normally install so called dummy slates, which does not include solar cells but provide the same aesthetic look.

We have developed special rubber strips to be installed between the panels that ensures an optimal flow of the rainwater.

Both the background material and the solar cells can be made in different colours, which give you more room for creativity.

Independent of which size you choose we give you 25 years of performance warranty and up to 12 years of material guarantee.



METAL ROOFS

Custom made solutions

- **ZINC, COPPER OR STEEL ROOFS**

DSE provides special solar panels that can be fully integrated in different metal roof, such as copper, zinc or steel constructions.

- **DANISH SOLAR PANELS**

All our panels are produced in our high technological, robot driven production facilities in Holeby Denmark.

- **FLEXIBLE**

There are no limitations. We can provide any size, color, shape or material you wish. Just give us a call and let's build it together.

We design and deliver high quality metal roof solutions

Metal roof protects against rain and wind as ordinary roof tiles while producing electricity. The solar cells are laid as common roofs and can be used on all designs. This profile solution is also suitable as a renovation solution. The modules are based on metal profile that provides an absolutely windproof weather-resistant and waterproof roof due to the complete diffusion density of the roof material.

A slim roof that fits all roof constructions.

Fully integrated in the metal profile, with a unique fastening method that ensures the solar panels optimal performance and attachment to the profiles, in the harsh environmental conditions to which they are exposed.



Custom-made solutions

- **PUBLIC AND PRIVATE**

Our solar carport is scalable and can be supplied in all proportions

- **OPTIMAL FOR ELECTRIC CARS**

It Can be used as a private charging station for electric vehicles.

- **HIGH PERFORMANCE**

We use the market's highest-performance solar cells to achieve the best quality.

- **REFERENCE**

We have also delivered special panels to a carport in Albertslund, Denmark.

Together we will design the future - Made in Denmark

By integrating photovoltaic in carports, a more beautiful design is achieved, and simultaneously it is an investment. We provide both; panels to already established carports, or a total solution in cooperation with Schletter, where we provide a complete photovoltaic carport system. Carports are eminent to set up solar panels, due that a typical large unused area can now produce green energy. Our collaboration with German Schletter

ensures the high quality of the racks, furthermore our Danish production ensures the quality of solar panels. A solar carport can be used as a charging station for electric vehicles where battery backup can be supplied. This makes the power produced maximally exploited. The solar panels can be ordered in special sizes and colors, making something as boring as a car park, an architectural wonder.

DANISH SOLAR ENERGY LTD manufacturing facility

