

ACCORDION SOLAR PANEL

Renewable and Green Energy for
Sustainable Future in the Cities



CM2025-9 Clean energy integration in the built environment
TRI 7: Integration in the Built Environment

ACCORDION SOLAR PANEL



Kibrit Creative Solutions is a one of design company which developed many product for the brand from all around globe since 2006. At the moment We are proud to present you our "ACCORDION SOLAR PANEL" project, which we own all processes from the idea stage to the design stage. Foldable Solar Panels are a different variation of Pergola Systems which are widely used nowadays and mostly used in cafeterias. On the other hand Our solution can also produce Clean Electrical Energy up to 25KW per system for unused areas in the city and it is one step ahead of traditional pergola systems with its modern design.

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The idea came up from sustainable green future where we can replace Pergola System which used mostly at coffee shop. Our solution can produce up to 25 KW from sun for each one of Coffeshop.
Challenge 3: Development of new concepts and technologies to renovate and refurbish the built environment

AESTHETICS, ARCHITECTURE and ENGINEERING TOGETHER

In order to obtain energy, which is indispensable today, from natural resources and to leave a clean mark on the future. We merged Aesthetics, Architecture and Engineering. As a result, we aimed to increase the usage of clean energy sources in cafeterias, which are one of the indispensable areas of use for people with new concept

Durable Construction

It adds value to your business for many years with its liquid-proof, rain and sun resistant structure.

Environmentally Friendly Solution

It allows you to produce the Clean Electrical Energy which your business needs from completely natural sources.

Capacity

Each solar panel row can generate up to 6 KW of electricity and an endless row of ACCORDION SOLAR PANEL can be added independently of each other.

Fast Return of Investment

While traditional Pergola systems only protect your customers from the sun & rain and other seasonal effects, ACCORDION SOLAR PANEL Systems allow you to minimize the electricity costs of your business.

Challenge 1: Transformation of the building / built environment to an active part within the energy system

Protection Against Hail and Vandalism

Maximum Protection of Your Investment Against Risks Such as Natural Disasters.

Risks Are Real; for example, we know that many of the previously implemented traditional Solar Panel Systems were damaged by Hail. On the other hand, you can protect your investment by folding Solar Panels "during hailstorm" with the folding feature of the Solar System we have developed

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As seen in the image, a Solar Panel investment clustered in a single point can easily be lost as a result of a natural disaster. Even though Solar Panel Installation which has large volume presents "big, magnificent and fantastic images", as a result it gives us big damage by tornado. Because of external factors, The 30-year lifespan of the manufactured product is reset in a period of 5-10 years, thus reproducing the same product and increasing Carbon Emission.

It is a solution that will minimize the electricity outage that may occur throughout the city against "wars and natural disasters", one of the inevitable situations of our age.

To express it with an example, we know that it is a sad fact that during the "Russia and Ukraine war", all the electricity needs of the country were provided by a dam and as a result of the Russian

attack, many cities in Ukraine were left without electricity. It is a fact that nowadays, stacking solar panels in clusters in a single point is also a wrong strategy. The country that will be exposed to a similar attack will lose all its solar energy investments. Exposure to natural disasters will also have the same effect.



ACCORDION SOLAR PANEL Usage Areas

Suitable for Every Segment

It has the infrastructure to meet the needs of every segment with its own modular structure. For example, while standard solar panels cannot be installed in an area less than 1 meter, it can cover even 30 cm areas with its aesthetic and modern slim design.

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On Grid Solar Panel

Considering that workplaces are mostly active during the day, an on-grid system was used to minimize electricity consumption during the day.

ACCORDION SOLAR PANEL systems listed in CETPARTNERSHIP use electricity from the system on days when the sun is low, with its On Grid structure.

ACCORDION SOLAR PANEL Usage Areas

Places those who host people and wants to protect them from seasonal conditions such as Sun, Rain, Snow and a temporary top closure system is needed;
Commercial malls, Cafeterias

- Swimming Pools and Entrance Sections of Hotels
- Entrance Place of Subway in Town
- Car Parking Areas of Villas

Green Energy Modern Design Clean Energy Resources Architecture, Engineering, Solar Panel Subway

Coordinator :

Kibrit Creative Solutions

All task of manufacturing and installation will be managed by Kibrit Creative Solutions.

Partner's Task :

It is necessary to apply to the Support program in its own country with the content we have published and to report the personnel who will work in the project that will last 24 months.

The Partner's Duties include identifying the public institutions or private customers where the System can be installed and explaining the importance of the Project.

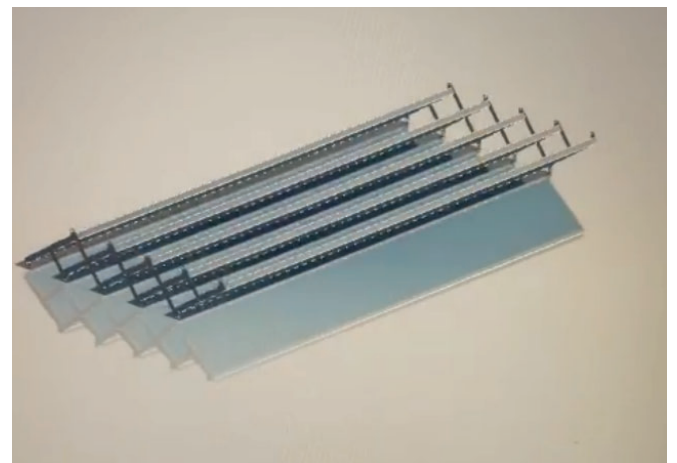
Identifying where the "FSP" unit can be installed with a south-facing area of 150 square meters and obtaining appropriate permits.

Manufacturing :

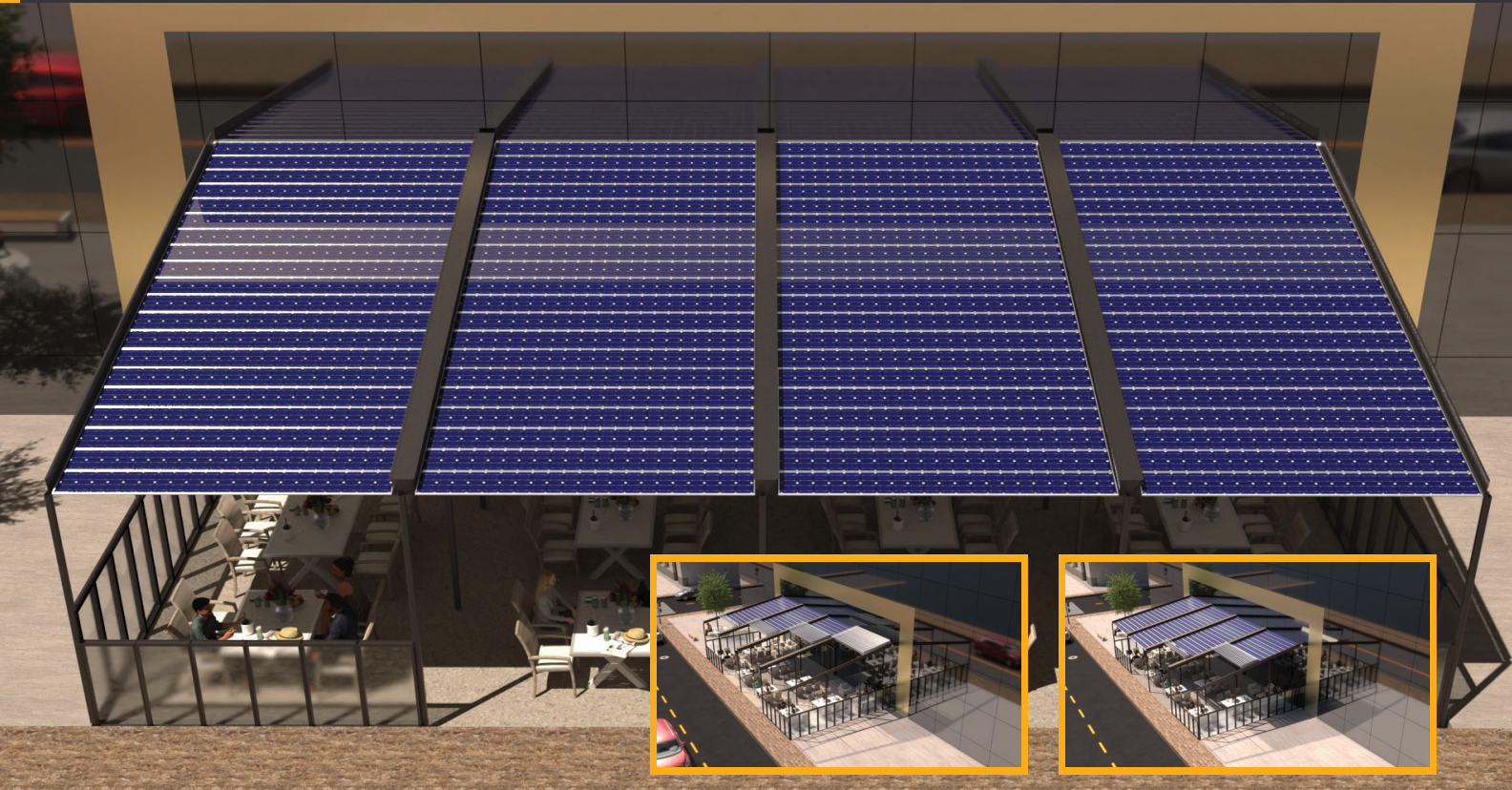
One of set can be manufactured under "Kibrit Creative Solutions" One set of 30KW ACCORDION SOLAR PANEL Manufacturing Price : 100-125K USD with all kits such as MTTP inverter etc.

Aluminum Frame:

Traditional solar panels frame gives us gaps when we put them side by

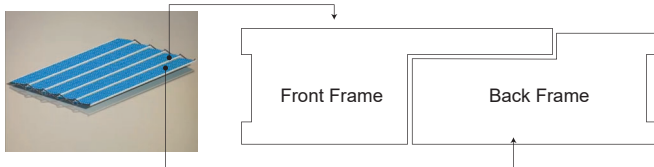


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side. Therefore, Traditional Solar Panels do not have feature which is Waterproof. On the other hand the new design that we developed, Aluminum Frame specially designed to cover each other, Aluminum Frame specially designed for the project. It will be produced by mold manufacturing. Each Solar panel, 30 cm x 300 cm long, is designed to lock together from the top when placed side by side

Side View of Aluminum Frame

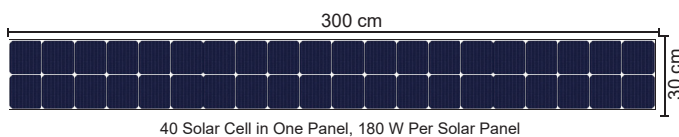


Photovoltaic Cell Array:

The PV cells on the solar panel will be arranged in 2 rows of 20 cells. Total amount of Photovoltaic Cell will be 40 on each solar panel

PV CELL Information:

Dimention : 156x156 mm Maximum Power (Pmax) : 4.33 W per Cell



Mechanical Structure:

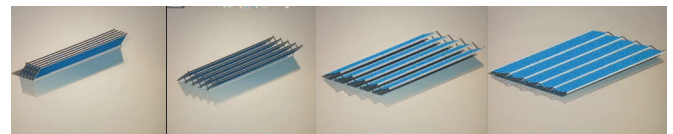
Solar panels are connected to each other like an accordion which have the feature of folding as well as Pergola systems.

Please see Technical drawing and videos.

<https://www.youtube.com/watch?v=O3Cfhy0YfsQ>

Rows:

Each row can have up to 33 Solar Panel, we can reach up to 6 kW Clean



Folded

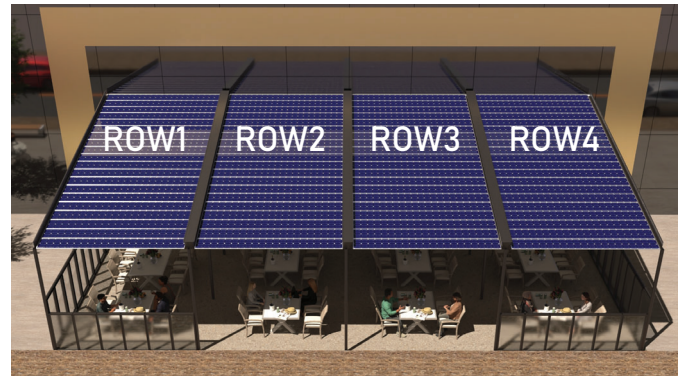
Step-1

Step-2

Step-3

electricity production. Each row can cover an area of 1020 cm depth and 300 cm width.

In the picture above The 4-row Foldable Solar Panels cover an area of 120 m² and have the capacity to produce a total of 24 kW of electricity.

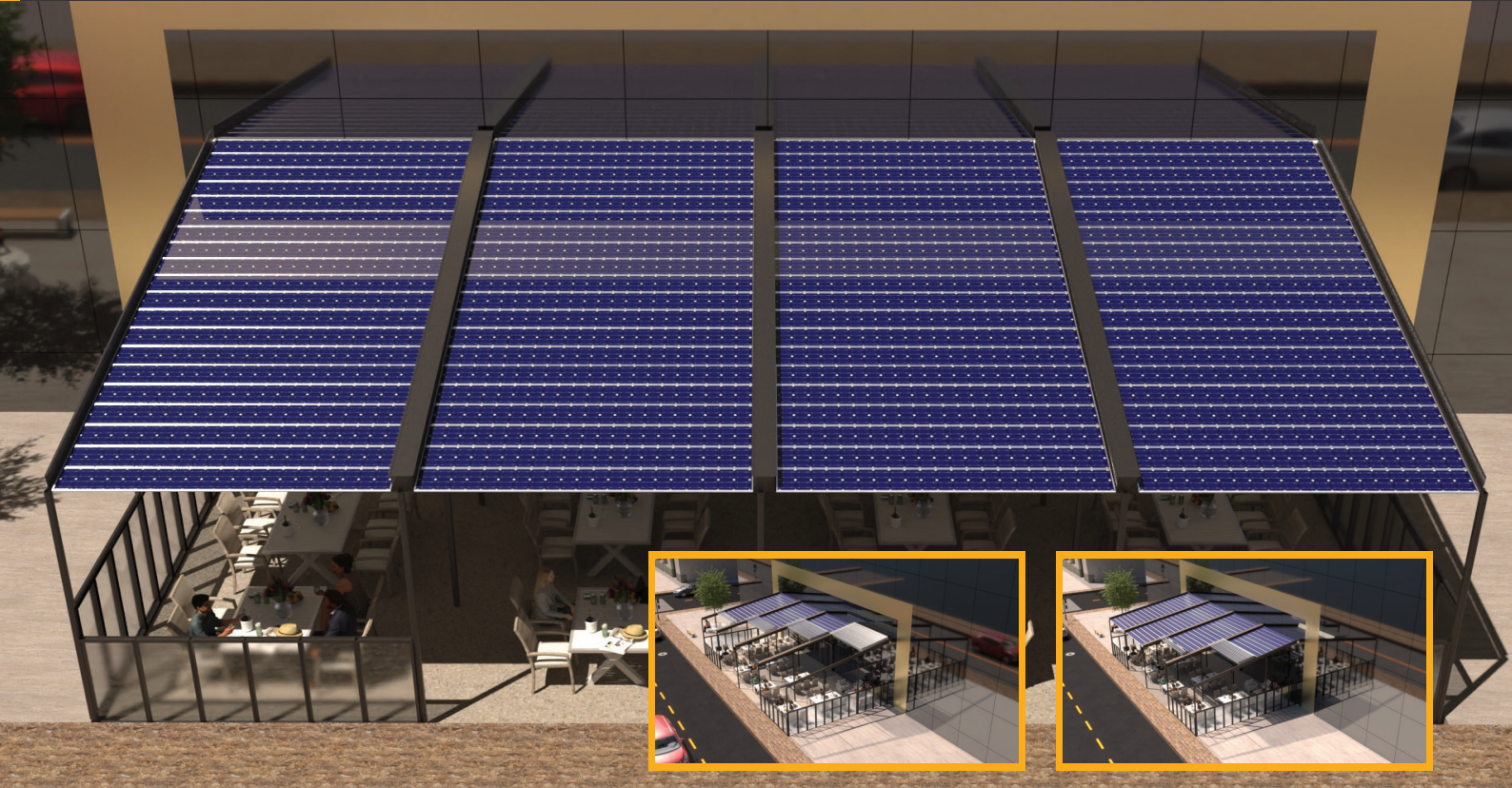


Wire and Cabling:

Since the panels have a movable infrastructure, the electrical system known as "Crane power line or rail mobile power" will be used in the system to minimize the use of electrical cabling. Thus, we will avoid

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cable costs and prevent cable wear caused by long-term use.

Installation :

Installation can be done by partner's team or Kibrit Creative Solutions team. Installation Cost will be around 10-25K USD if installation task managed by Kibrit Creative Solutions.



Manufacturing Time:

One Set of 30kW Unit can be manufactured in a month.