PROJECT OASIS

to make the desert bloom

What is solar panelling?

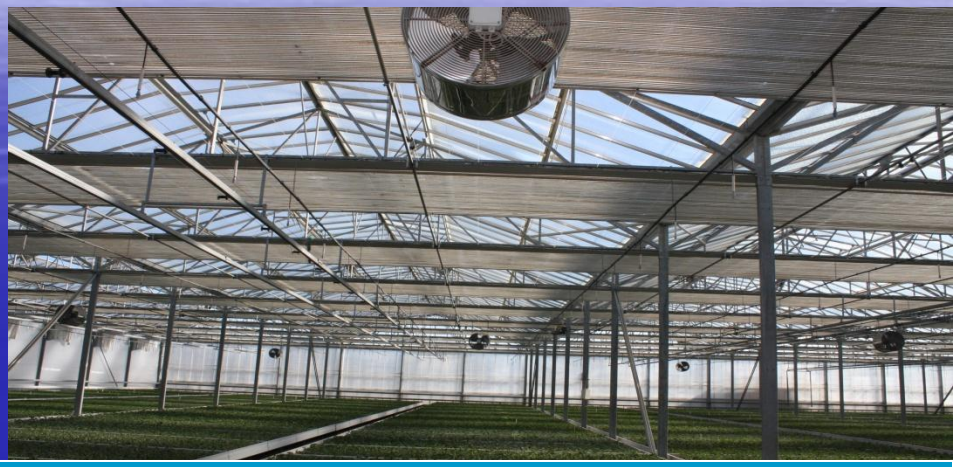
- Conversion of the solar electromagnetic radiation into electric energy developed through solar panel units installed as greenhouse covering

How much covered surface is enough to produce 1 mw?

- Given that the roof is 50% covered, approx 20 000 m2 of agricultural greenhouses are necessary
- The electrical requirement for the functioning of the greenhouse is confirmed at about 25%
- The remaining surplus of energy production can be either fed into the existing electrical grid or accumulated for nocturnal use.

What are the electrical energy consumptions in the greenhouse?

Irrigation system



Ventilation system

Lighting system

Heating system

Refrigeration rooms for storage of products

Why is greenhouse solar panelling necessary?

- To satisfy the energy requirements of the greenhouse
- to protect the crops from excess solar radiation, as in periods with greater bright intensity

- Production and input into the grid of the surplus electrical energy

How is greenhouse solar panelling made?

- By positioning the solar panels on the greenhouse roof to cover part of the roof and let in enough light according to the type of cultivation planned

- Alternatively, the greenhouse can be covered with semi-transparent panels which substitute the covering of the greenhouse itself

What innovations are there?

- the cooling down of the solar panels through mist irrigation on the roof, with consequent reduction in the temperature
- Increase in the amount of electrical energy produced by the solar panelling
- Prevention of the stalling of the solar panel system caused by the high temperatures recorded in the desert
- Recovery by drainpipes of the same water which is purified and recycled.
- Cleaning of the panels on the greenhouse roof which encourages greater production
- Reduction in the internal greenhouse temperature

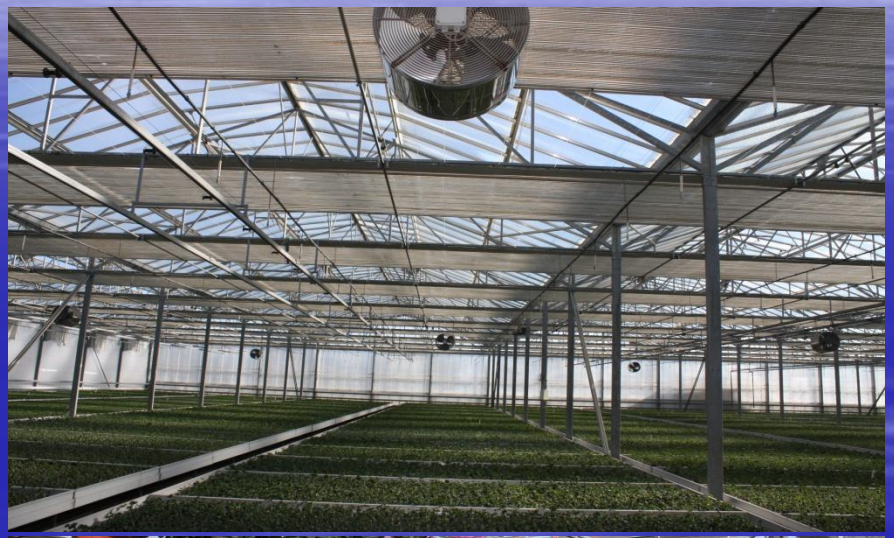
HOW THE GREENHOUSE IS ACCLIMATISED

- through the system “FOG” which creates the natural habitat for crops with the right humidification

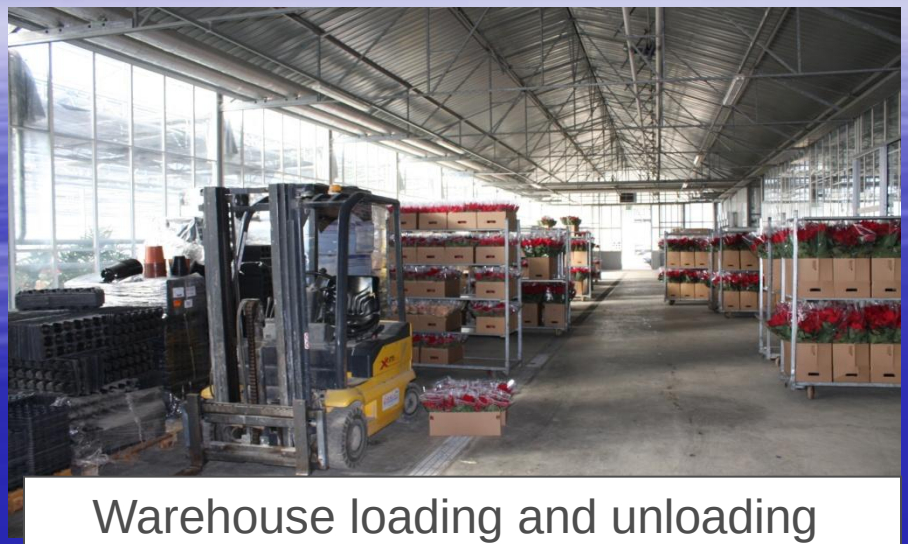
- In addition to “FOG”, drainage ventilators are used to create a forced ventilation and reduce any surplus humidity

Internal ventilation system

- Suitable for creating a greater aeration inside the greenhouse, creating the ideal climate for the plants and those working



Activities carried out in the greenhouse



Warehouse loading and unloading

Preparation of sets

Management offices

Hydroponic cultivation

Why nocturnal illumination?

- the working life in greenhouses can continue into the nocturnal hours

- Product preparation work for the markets

- Increase in the agricultural production due to the artificial lighting created inside the greenhouse. The technique to adopt is giving light three hours before dawn and three hours at sunset

The benefits of solar panels on greenhouses

- Double production in the same surface
- Generation of electric energy
- Efficient solar panels because they stay clean at an ideal temperature
- Reduction in the radiation of the greenhouse

  Lowering of the internal greenhouse temperature through roof irrigation
- Agricultural production for local requirements
- Creation of jobs
- Greater agricultural production through artificial light, to be used three hours before dawn and three hours at sunset
- Reduction in theft and damage due to the access difficulty of its high positioning
- Pleasant and functional architectural impact

You can see all of this in the scaled down greenhouse (1:15), on display in the Italy stand