

SunOyster Systems GmbH Hamburg, Germany

Discover how the SunOyster generates MORE solar energy

Dr. Carsten Corino, 26.5.2020



SunOyster combines the best of solar thermal power plants (CSP), CPV and PV



CSP

Cheap mirrors
Glass tubes for receiver



CPV

Bi-axial tracking
Concentrator cells

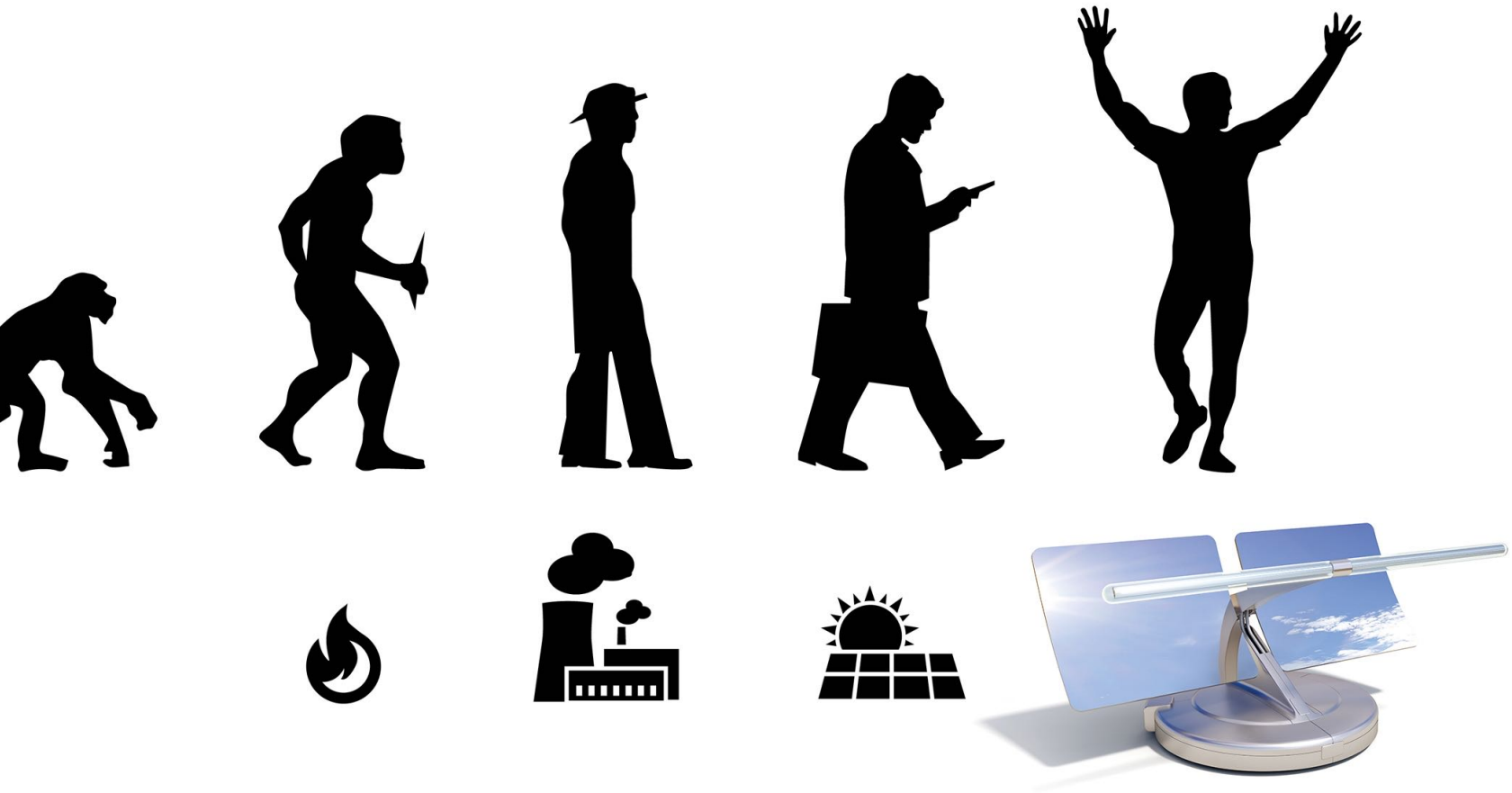


PV

Modular
Roof Installation
Cost-efficient



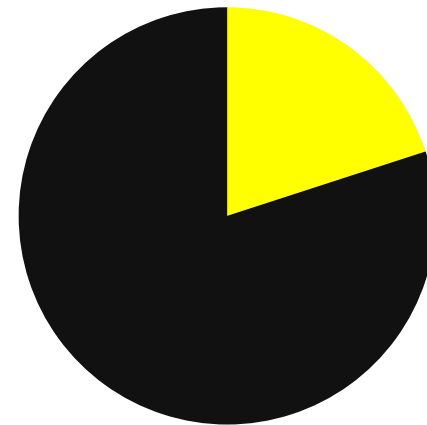
5 competitive advantages of the SunOyster



1

**High
total
efficiency**

Photovoltaics is good and cheap. The but problem remains: PV still wastes approx. 80% of the solar radiation

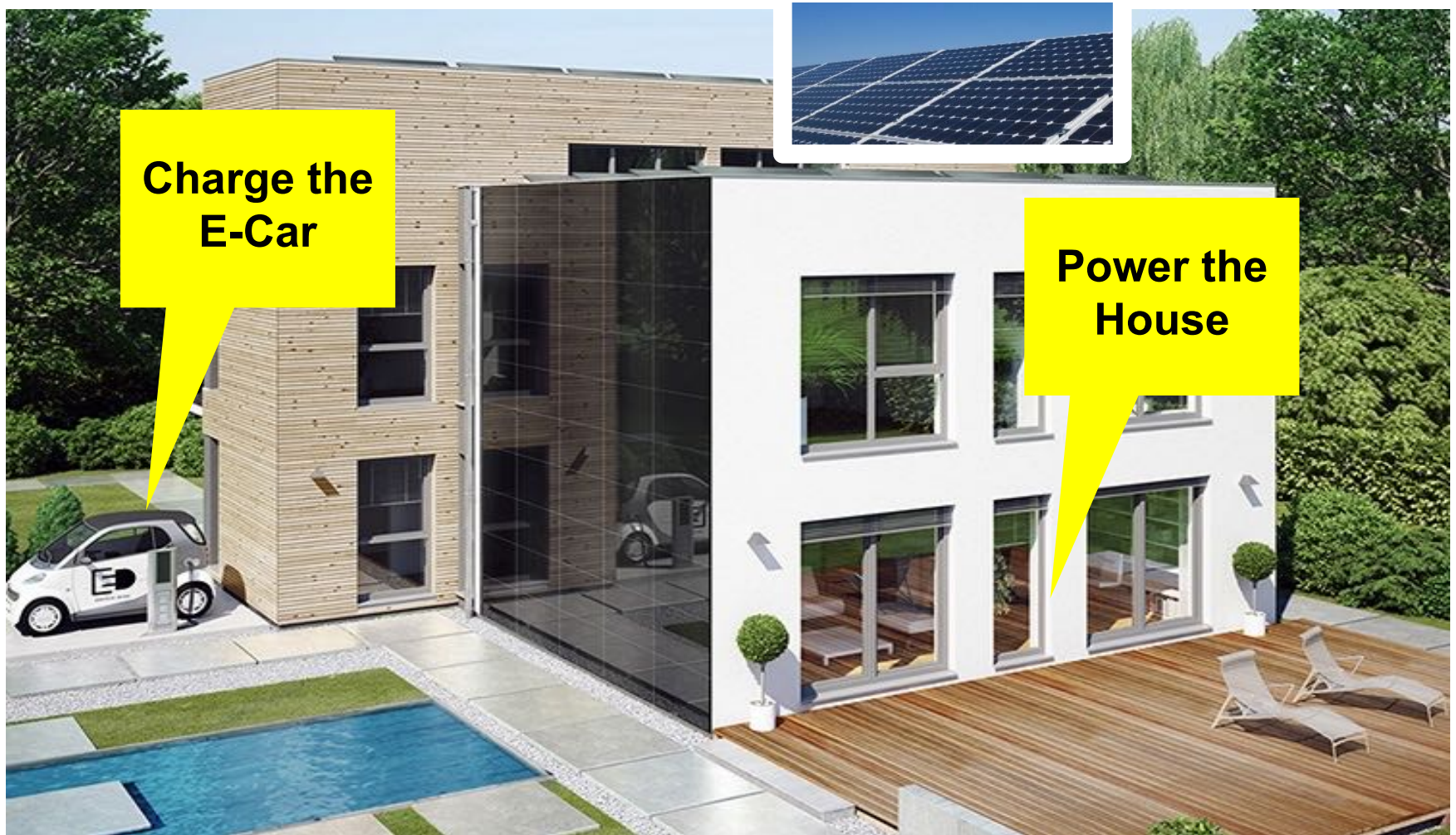


 **Power**

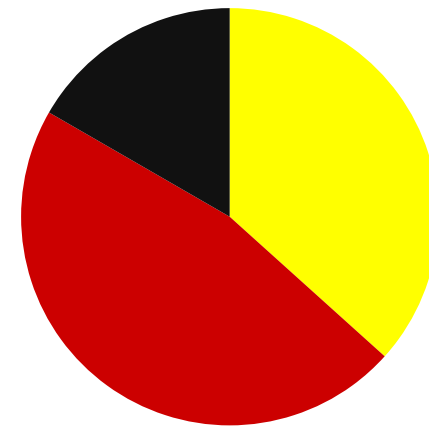
 **Waste**

Solar Energy Balance

Therefore, generated PV electricity covers normally only a part of the total energy demand



The solution: Double the Power! SunOyster converts almost 80% of the solar radiation into heat + power



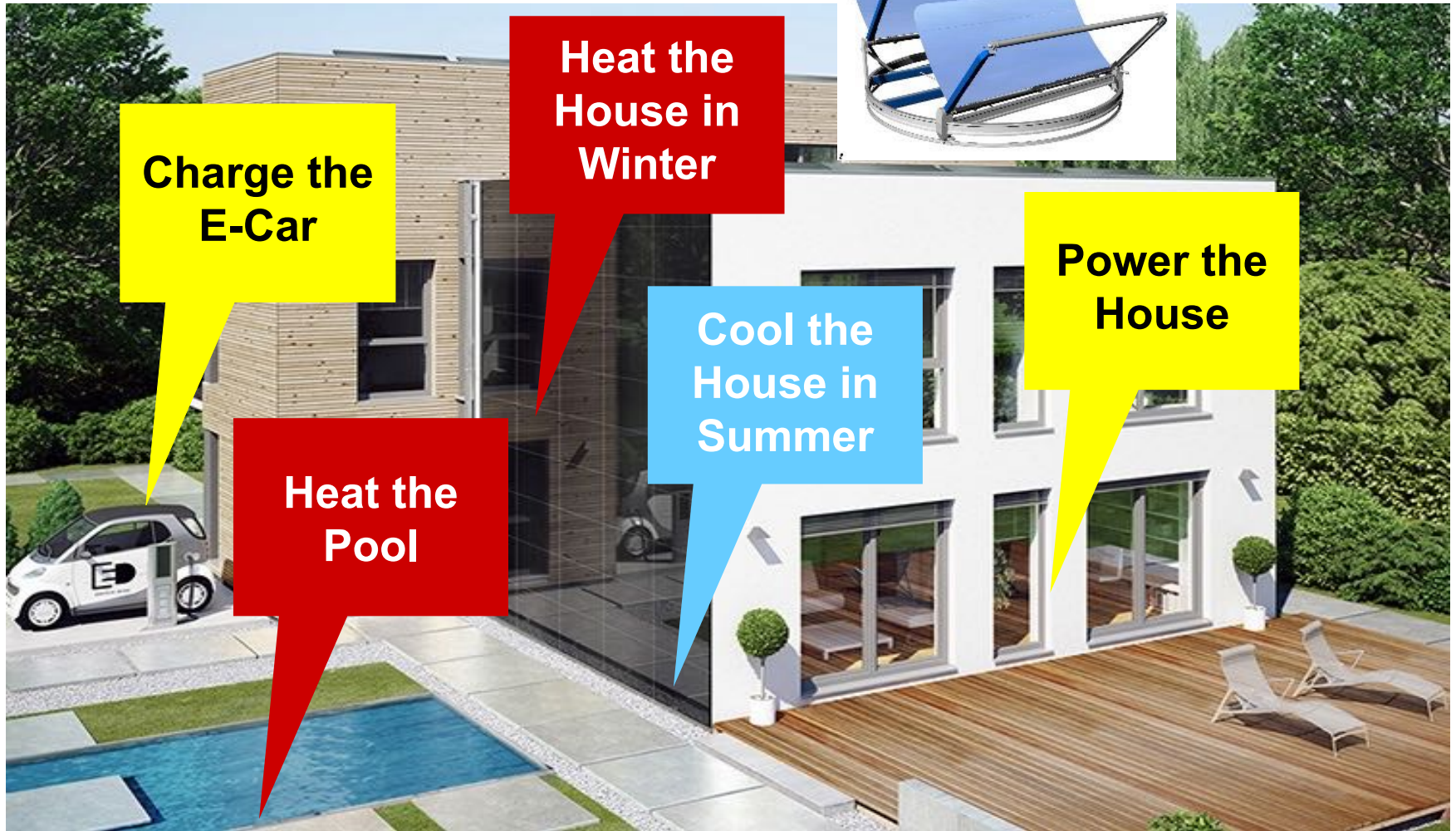
Power

Heat

Waste

Solar Energy Balance

The SunOyster can cover the complete energy demand of power, heat and cold

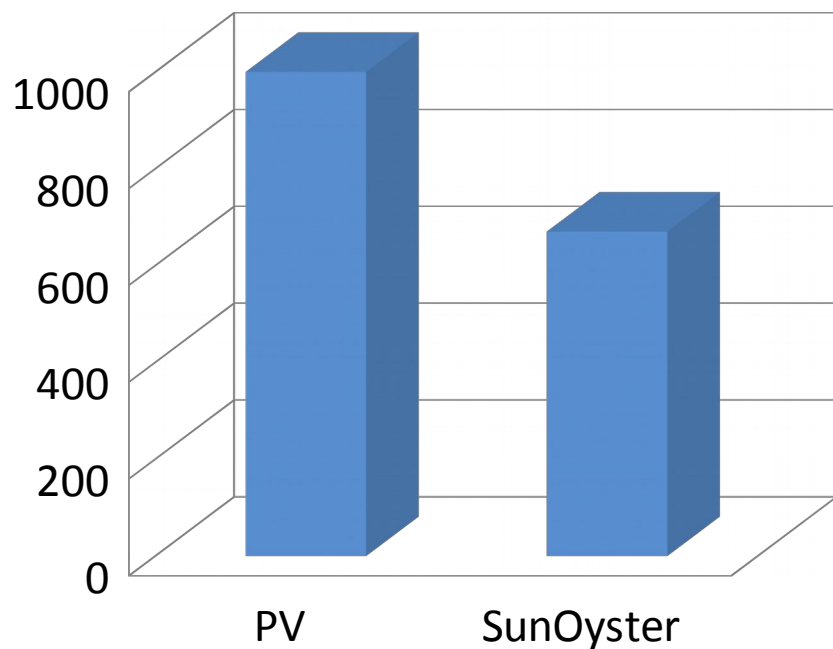


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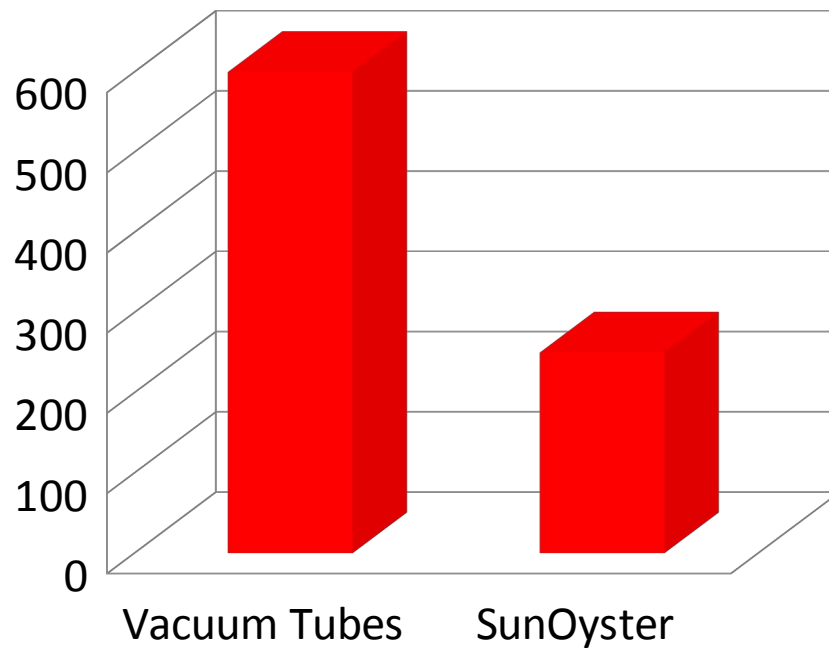
**Lowest
Cost**

In sunny regions, the SunOyster wants to be the cheapest solar energy wherever heat (cold) are needed – comparison of a small scale installation in Europe to PV and thermal collectors

Cost of Power per kW el



Cost of Heat per kW



Business case:

Hotel building, offices and apartment houses, 30 SunOysters with Thermax chiller

Electr., heat and cooling power, temp.	141 kW el, 225 kW heat at max 95°C and 170 kW thermal chiller (COP 0.75)
Place and DNI	Mumbai , India, 1,500 kWh/m ² a
Electricity value	0.194 €/kWh
Heat value	0.058 €/kWh (solar heat is substituting heating oil)
Investment example	150,000 € for 30 SunOysters (min. 1500 m ² roof surface needed), e.g. 40,000 for chiller, total 268,600 € (or 560 €/m ²)
Total income/saving p.a.	53,935 €/year (or 89 €/m ² /year)
Financing	70 % loan at 10 % interest
Payback of project/ equity	4.98 years/ 1.49 years
IRR over 20 a	38.17 %



A close-up photograph of a human hand, palm facing up, against a dark, textured background. A blue circle with a white border and the white number '3' is positioned over the index finger. The text 'Best Surface efficiency' is centered on the palm, and 'SunOyster.com' is in the bottom right corner.

3

**Best
Surface
efficiency**

16 m² of SunOyster mirrors from serial production shall generate up to 5 kW electric and 7.5 kW thermal power



gefördert durch



Deutsche
Bundesstiftung Umwelt

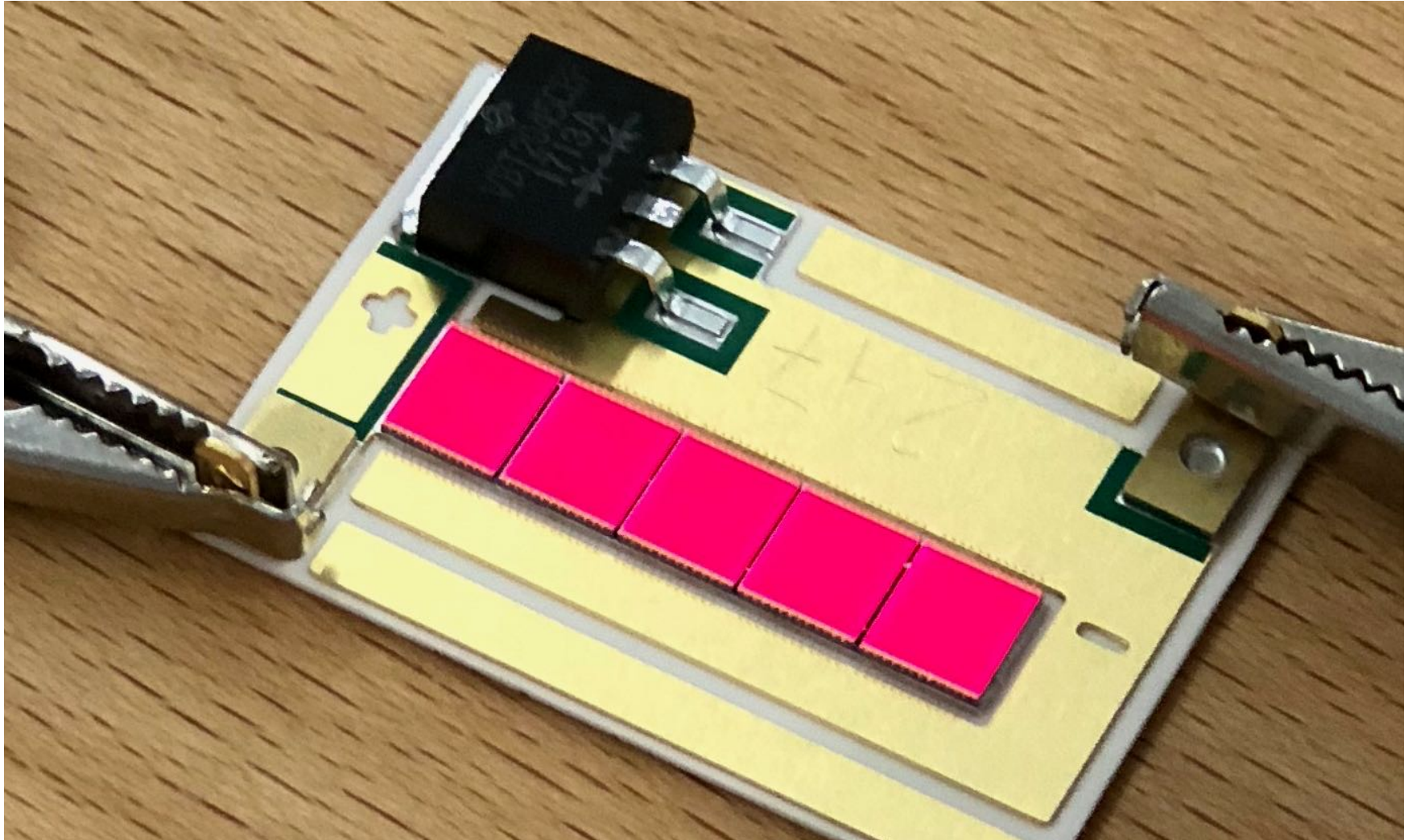
www.dbu.de

SunOyster.com

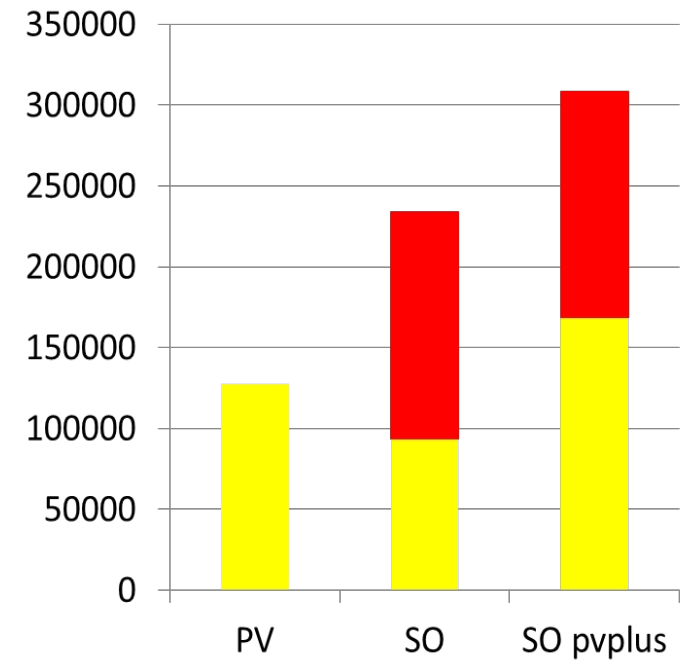
**16 m² mirror surface =
16 horse power (hp)**



SunOyster cell assembly using space cells with highest efficiencies



SunOyster *pvplus* has 2.5 times the energy generation of normal photovoltaics (PV)



■ Heat Energy
■ Electric Energy

A close-up photograph of a human hand, palm facing the viewer, against a dark, textured background. The hand is slightly spread, showing the fingers and the palm. In the upper right corner, there is a blue circle with a white border containing the white number '4'.

4

**Manifold
heat
applications**

Manifold heat applications



Warm Water

50°C – 70°C



Room Heating

25°C – 90°C



Desalination

25°C – 120°C



Process Heat

60°C – 170°C

up to 170°C Heat



Cooling

55°C – 170°C



ORC Machine

90°C – 170°C



(Storage)

-30°C – 170°C



Pre-heating Steam Plants

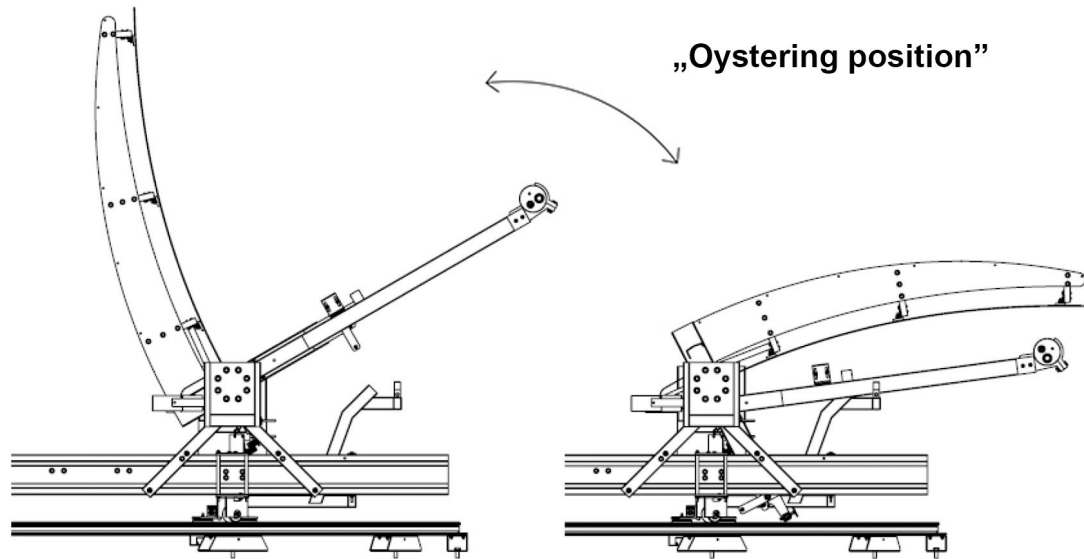
100°C – 170°C



**Self
protection,
attractive
design**

5

SunOyster closes in case of strong wind into a safe position



Online monitoring and smartphone app



In parallel, we build prototypes of
our second product, the stylish
SunOyster 8

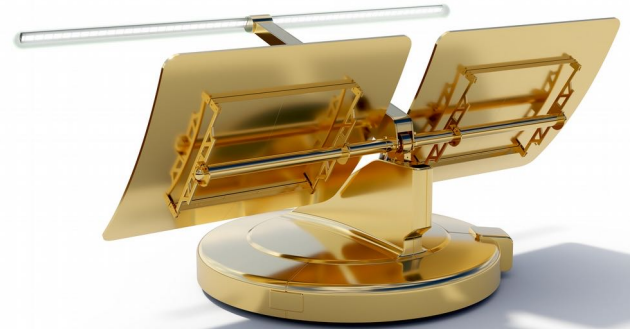


Model Alu

SunOyster 8

not only for Dubai

Model Gold



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धन्यवाद



SunOyster.com

Co-operation Interest

The size of the Indian market justifies a local production of the SunOyster.

- Ideally in form of a technology license co-operation.
- Otherwise in form of a 50-50 Joint Venture.

In the mean time, we are interested in customers for demo projects, e.g. a hotel project.

SunOyster

