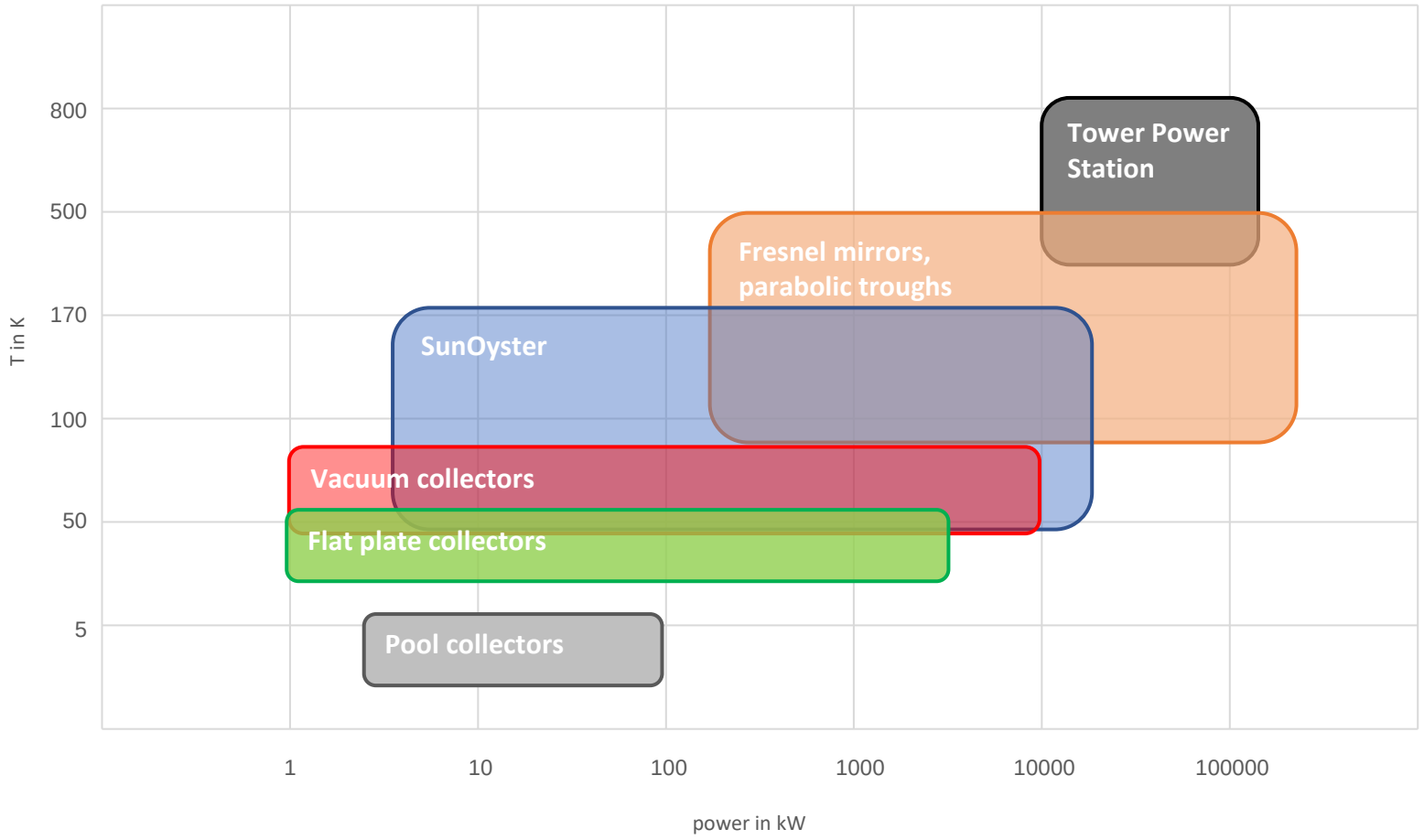
SunOyster Systems GmbH

The SunOyster – power and heat from the sun

Dr. Carsten Corino/ Amelie Krahl, August 28th, 2021

Vereniging Zonnekracht Centrales,
Gouda, The Netherlands

Solar heat generators - overview of typical temperature and output ranges (own impression)



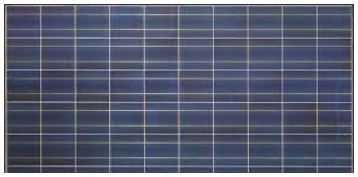
SunOyster combines the best of solar thermal power plants (CSP), CPV and PV

CSP

Cheap mirrors
Glass tubes for receiver

CPV

Bi-axial tracking
Concentrator cells



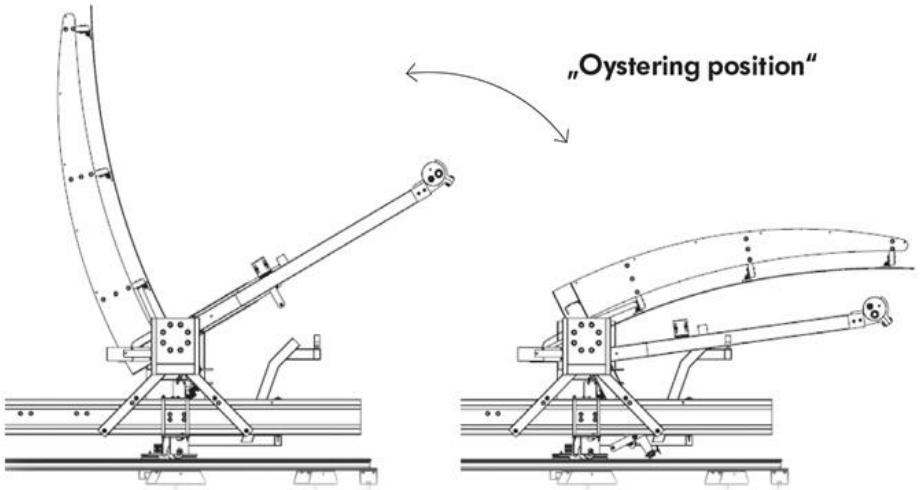
PV

Modular
Roof Installation
Cost-efficient

The SunOyster harvests maximum energy because its mirrors track the sun all day.

Bi-axial tracking

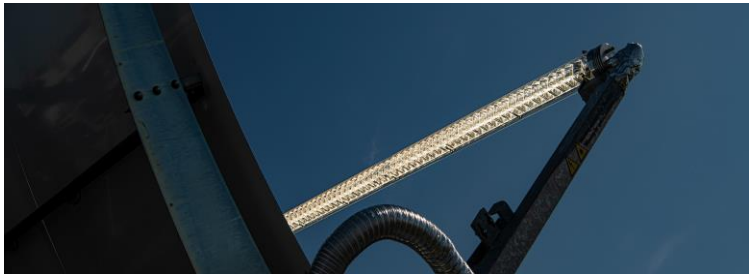
In case of strong wind, the SunOyster automatically closes into the safe “oystering" position.
Therefore, it can also be installed in the best place for solar energy: On the roofs.

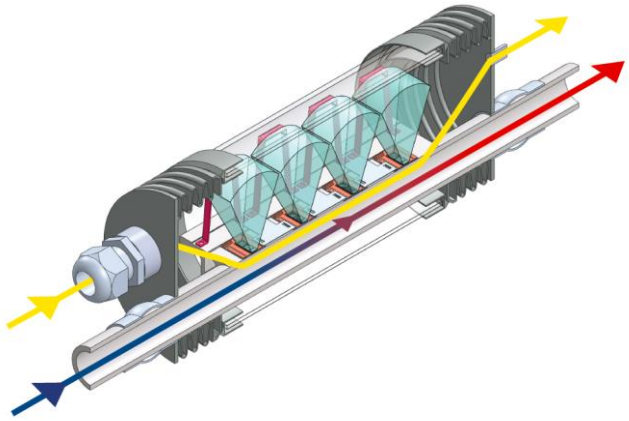


The SunOyster follows the principle of an oyster that shuts its shells.

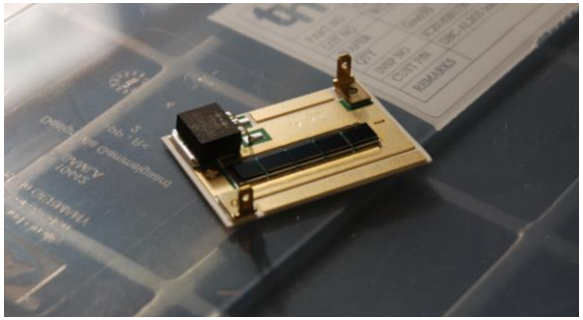
The SunOyster has two different receivers. The patented hybrid receiver generates electricity and heat simultaneously.

Aluminum tube with glass lenses and concentrator photovoltaic.

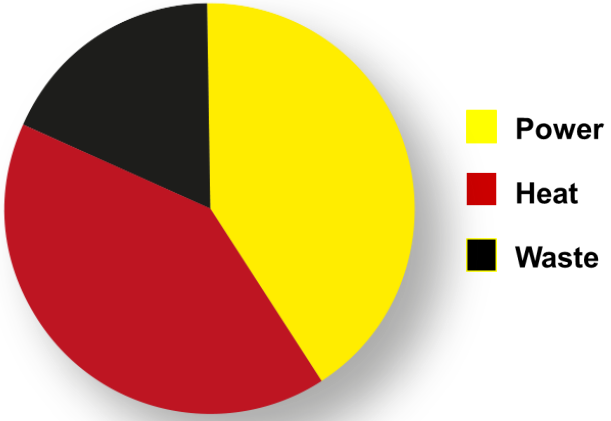




From the series: 4.5 kW electric power and 7.5 kW heat output.



Cells with 44 % el efficiency.

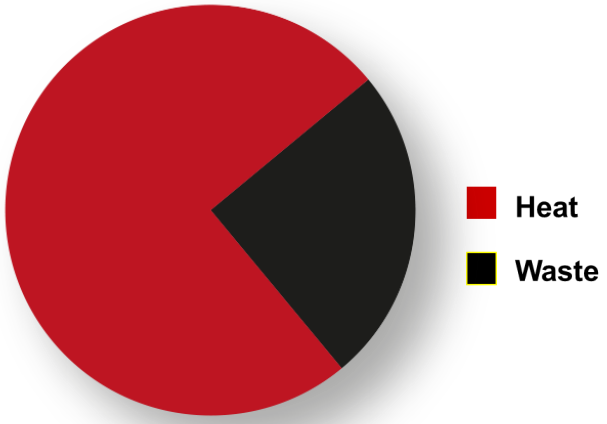


Solar Energy Balance

The thermal receiver only generates heat. But a lot for that. It can reach significantly higher temperatures than conventional collectors, up to 170° Celsius.

Steel pipe with selective absorber.

10 kW CSTC heat output.



Solar Energy Balance

CE

Solar Keymark Certified
The Sun Oyster 16 heat is eligible to subsidies in many countries around the world.

DIN CERTCO
Gesellschaft für Konformitätsbewertung mbH

CERTIFICATE

Certificate holder	SunOyster Systems GmbH Poststr. 46 25469 Halstenbek GERMANY
Production facility	Halstenbek
Product	Solar collectors
Type, Model	SunOyster 16 HEAT
Testing basis	DIN EN 12975-1:2011-01 DIN EN ISO 9806:2018-04 SOLAR KEYMARK Scheme Rules (2020-06)
Mark of conformity	
Registration No.	011-7S3050 R
Valid until	2026-07-31
Right of use	This certificate entitles the holder to use the mark of conformity shown above in conjunction with the specified registration number. See annex for further information.

DAkkS
Deutsche Akkreditierungsstelle
D-ZE-11129-01-00

2021-07-27
Robert Zorn M.Sc.
Managing Director

DIN CERTCO

DIN

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Innovation has never been more attractive. Example in Germany:

Residential solar heating

30% up to 45%

Process heat applications

45% up to 55%

Renewable local heating networks – expected

40%

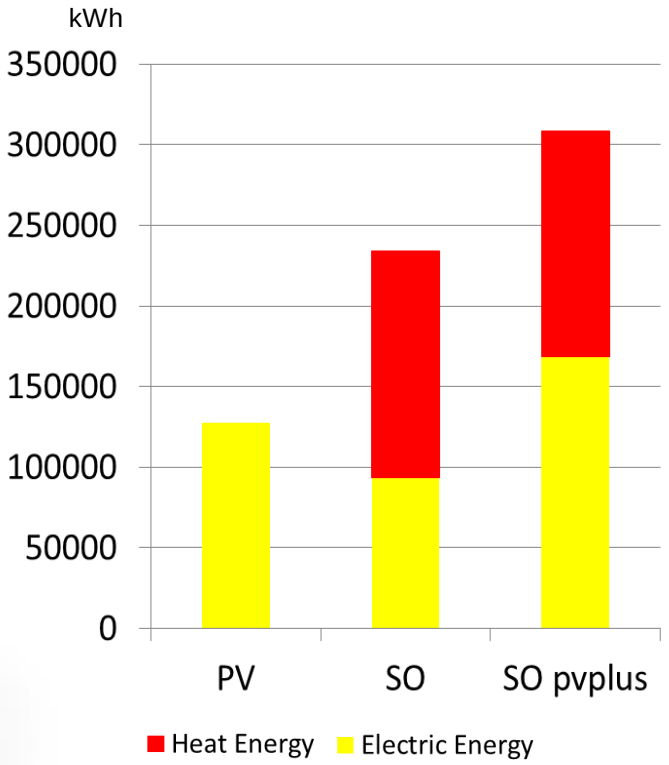
For customers, this leads to attractive returns given the high energy costs in Germany.

Applies to both thermal and hybrid receivers:
16 m² mirror surface = 16 HP.

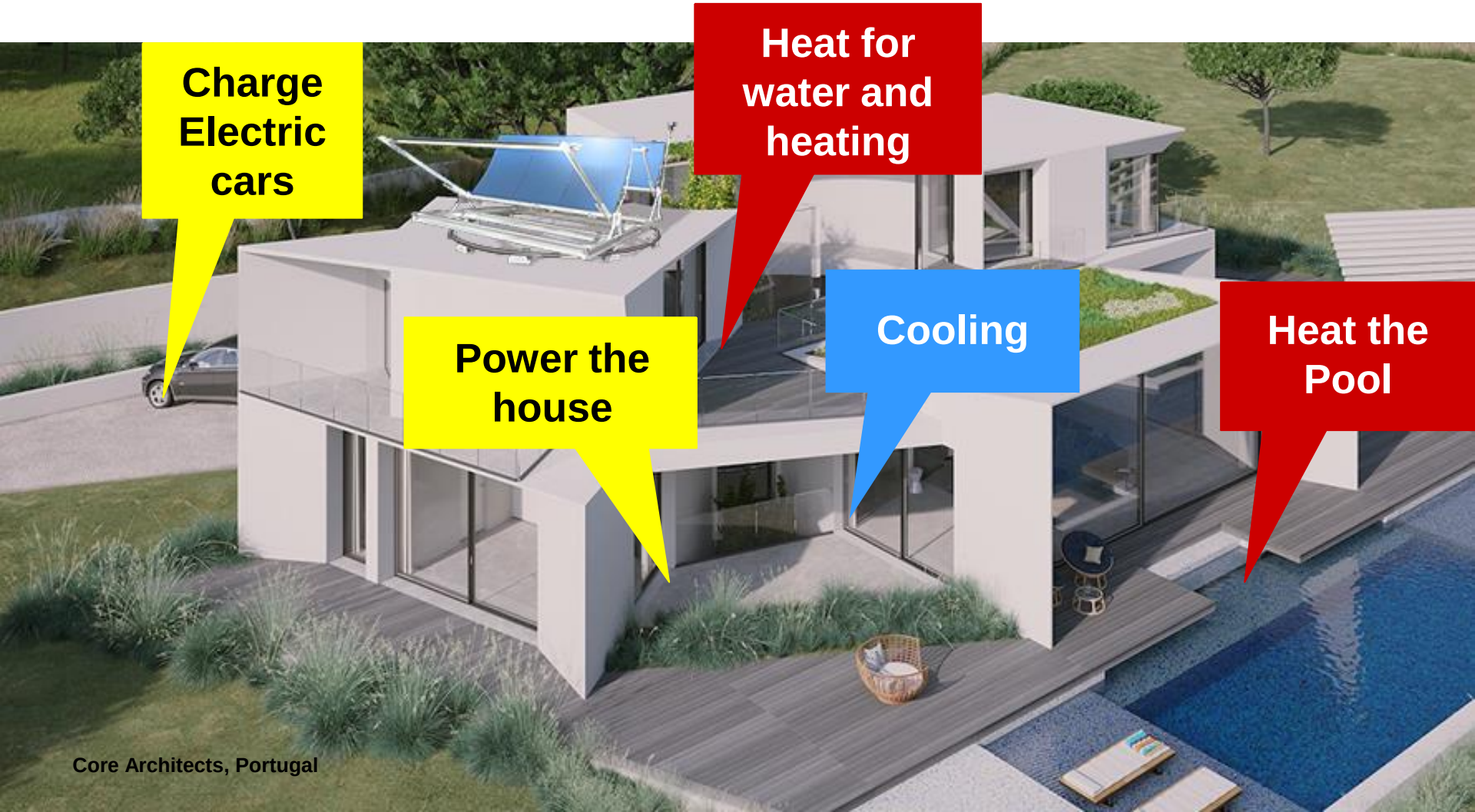
The space required for tracking can still be used for additional 12 photovoltaic modules. So the SunOyster generates at least twice as much the total energy as conventionel photovoltaics from the same area.

SunOyster with additional 12 PV modules

Calculation example: roof of 40 m x 20 m in southern Spain.



Because both electricity and heat can be converted to cooling, the SunOyster can cover the complete energy demand of buildings for electricity, heat and cooling.



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

0°C — 110°C — 170°C

up to 110°C SunOyster *hybrid*

up to 170°C SunOyster *heat*

Cooling

55°C – 170°C

ORC Machine

90°C – 170°C

(Storage)

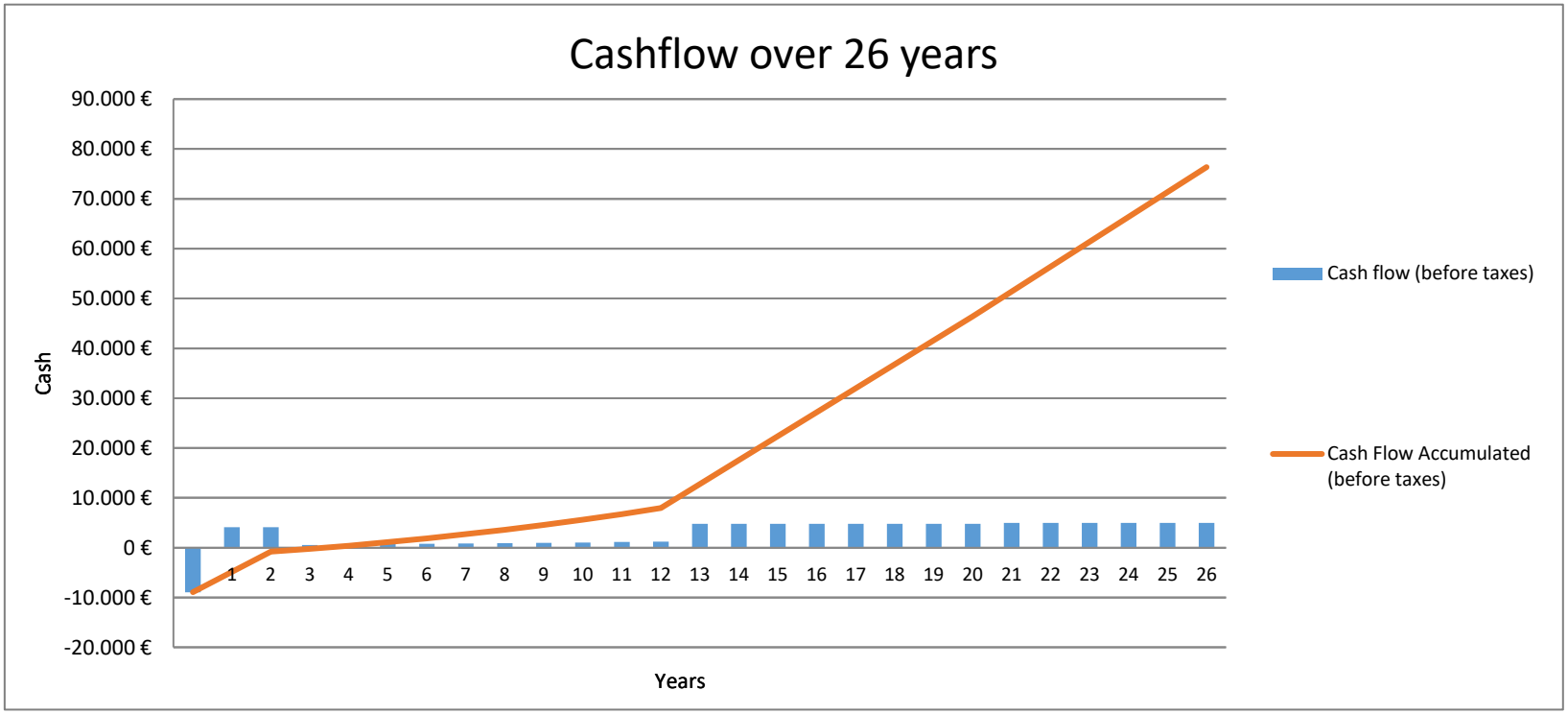
-30°C – 170°C

Pre-heating Steam Plants

100°C – 170°C

SunOyster.com

Profitable in Germany:
Four SunOystern heat pvplus for an apartment building in Leipzig (1.5 years payback time on equity, 25% return on equity).



SunOyster PVmover

Maximum power generation due to bi-axis tracking.

Type	Max. heat output	Max. electricity output: PVmover This additional electrical power depends on the type of PV module used.
SO PVmover	**–**	**3.6 up to 4.8 kW_p**

Due to its size, **no building permit or building notification** is required to install the PVmover on roofs or in gardens in most federal states in Germany. Other countries need to be examined.

SunOyster 8
Smaller, lighter, stylish.
Pitched roof installation possible.

Available from 2022.

Wir fördern Wirtschaft

EU.SH

Landesprogramm Wirtschaft: Gefördert durch die Europäische Union - Europäischer Fonds für regionale Entwicklung (EFRE), den Bund und das Land Schleswig-Holstein

Schleswig-Holstein
Der echte Norden

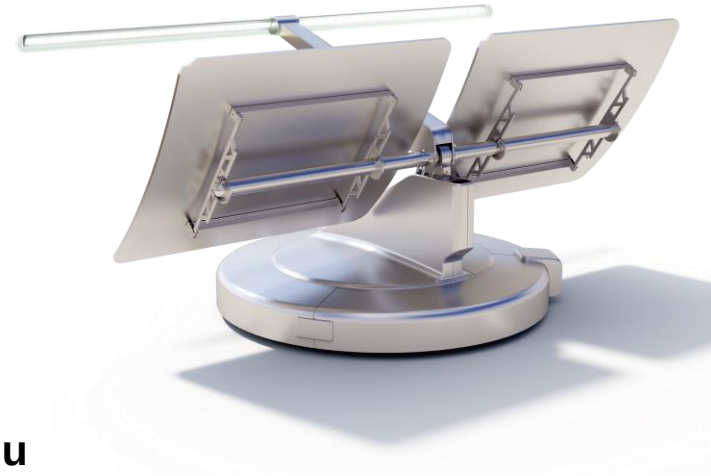
Core Architects, Portugal

SunOyster.com

SunOyster 8

Power output of SO8 hybrid

Typ	Max. Wärmeleistung	Max. elektrische Leistung	pvplus Diese zusätzliche Stromleistung ist abhängig vom verwendeten Typ der PV-Module.
SO8 heat	5,5 kWth	-	+ 1.2 kWp
SO8 hybrid	3,5 kWth	2 kWp	+ 1.2 kWp



Model Alu

SunOyster 8

Model Gold

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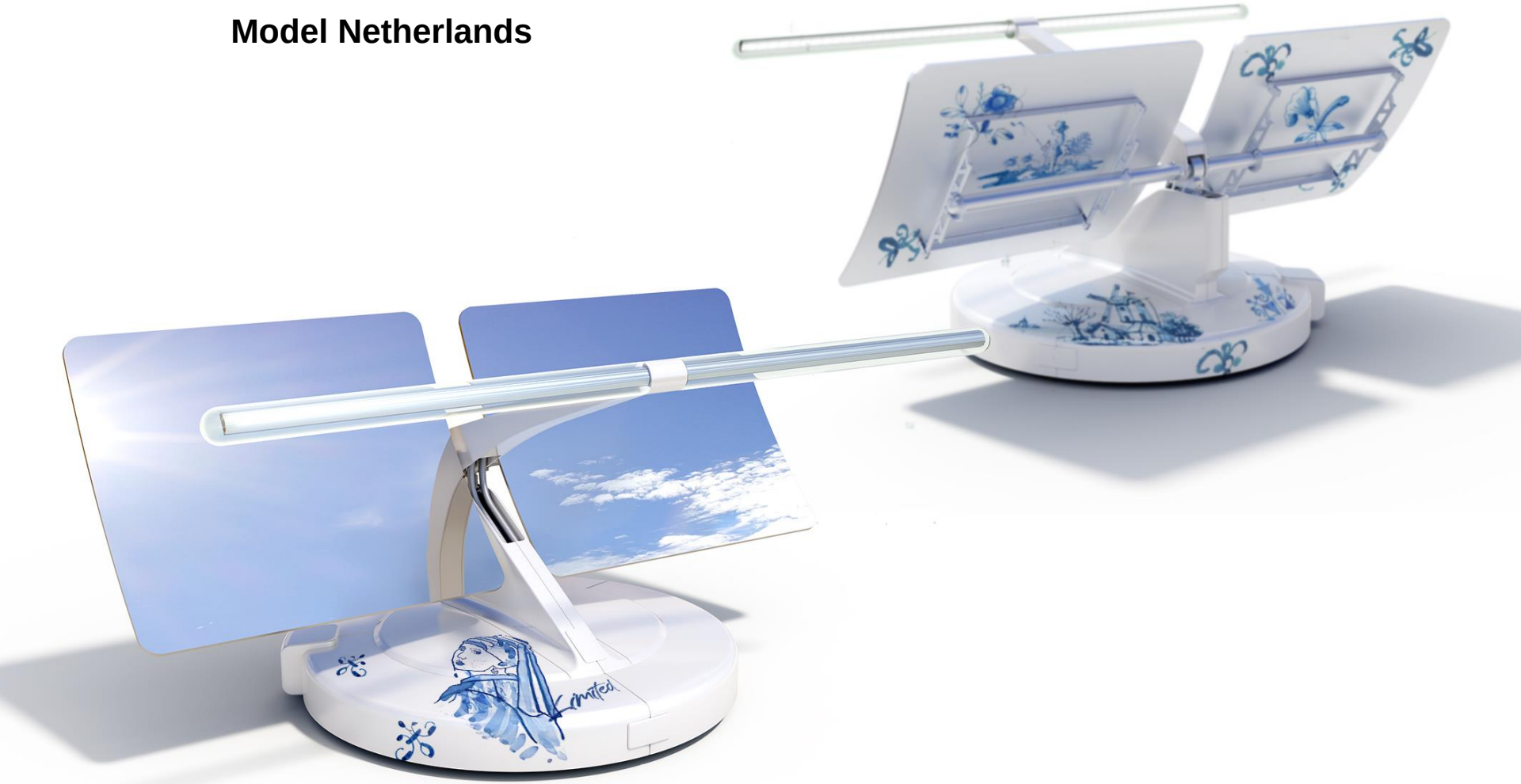
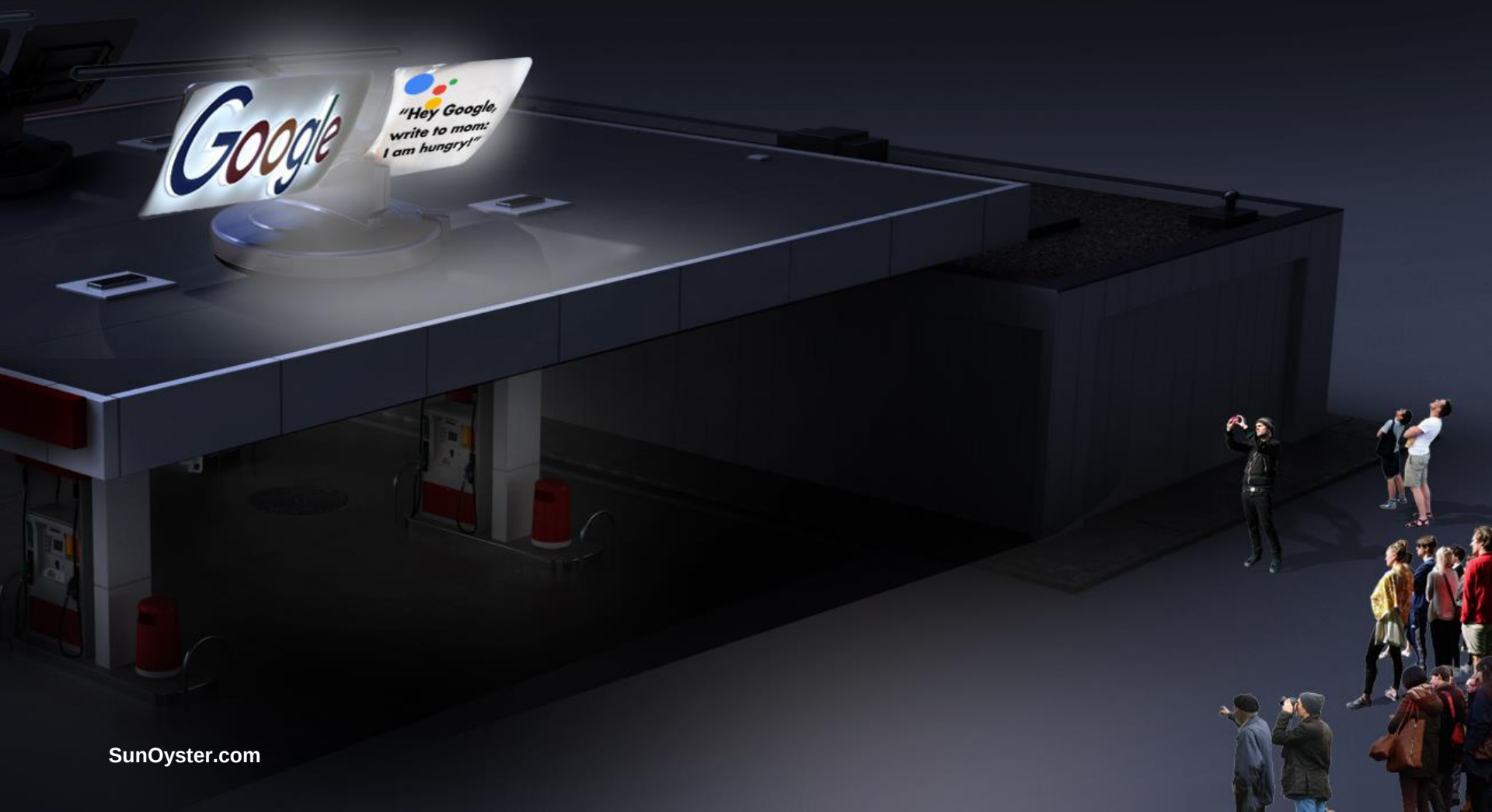
Model Netherlands



SunOyster 8 screen

The back of the SunOyster 8 can serve as an all-around swiveling projection surface.



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We are looking forward to your project and thank you for the attention! We danken u.

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The Netherlands – Direct Normal Radiation (DNI)