SunOyster Systems GmbH, Halstenbek

SunOyster – Double the Power

Dr. Johannes Kneer, 11 April 2018
The problem: Photovoltaics (PV) wastes approx. 80% of the solar radiation
Generated PV electricity covers normally only a part of the total energy demand.

Charge the E-Car

Power the House
The solution: Double the Power! SunOyster converts up to 75% of the solar radiation into heat + power.
The SunOyster covers the complete energy demand of power, heat and cold.

- Charge the E-Car
- Heat the House in Winter
- Cool the House in Summer
- Power the House
- Heat the Pool
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
SunOyster closes in case of storm into the flat and safe „Oystering“ position
Heart of the SunOyster is the hybrid receiver with concentrator cells (44% electric cell efficiency)
16 m² of SunOyster mirrors from serial production shall generate up to 5 kW electric and 7.5 kW thermal power
16 m² mirror = 16 horsepower (hp)
Manifold heat applications

温暖水
50°C – 70°C

房间供暖
25°C – 90°C

淡化
25°C – 120°C

工艺热
60°C – 170°C

最高可达170°C

冷却
55°C – 170°C

ORC机
90°C – 170°C

(储存)
-30°C – 170°C

预热蒸汽发电厂
100°C – 170°C
SunOyster is optimal for solar tri-generation of electricity, heat and cold
Italy and India turn out to be attractive markets after assessment of markets for tri-generation

DNI/GHI

Cooling days

Electricity price

Fig. 12: Electricity prices in key countries (2016) – own graph based on doing business.org/
CAD of SunOyster \textit{pvplus} – Maximum surface efficiency harvesting 2.5 x the energy of PV
Cooling with the SunOyster – SOS receives renowned seven-digit Euro grant to develop solar cooling
Looking for partners, especially thermal chiller manufacturers with <10kW power

Has anyone current news from manufacturers of small scale thermal chillers? (Purix? SolabCool?)
Installation of first pre-series machine
SunOyster Team

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Thank you for your attention.

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