Tagung: Kosteneffiziente solarthermische Systeme, Linz, Austria

Thermosiphonkollektor

aus Polypropylen-Stegplatten

Michaela Meir / Aventa AS / 04.10.2017

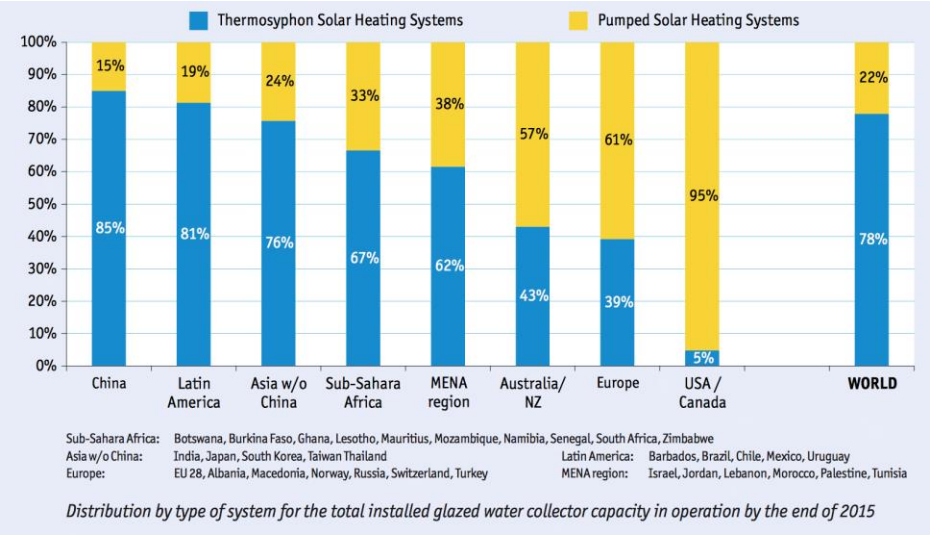
The Research Council of Norway

With funding from
The Research Council of Norway

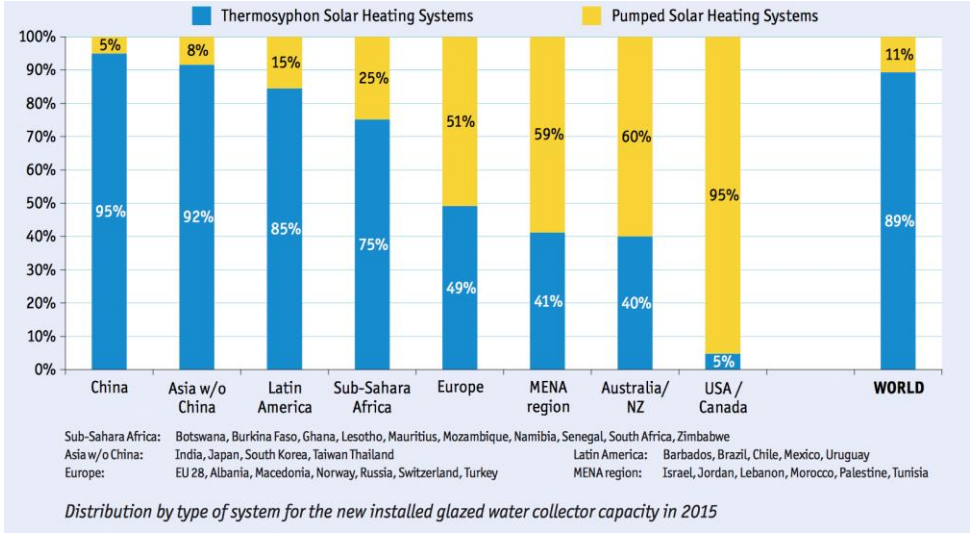
Konventionelle Technologie

Antalya Tyrkey, source: EU-FP7 project SCOOP, Lutschounig, 2014

Motivation: Internationaler Markt



Distribution by type of system for the total installed glazed water collector capacity in operation by the end of 2015



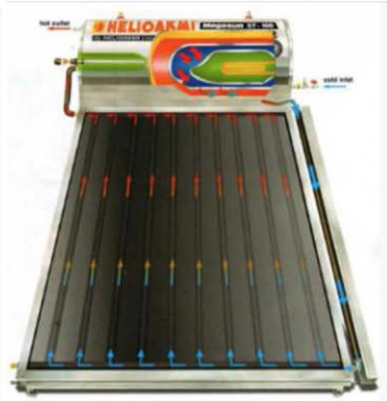
Distribution by type of system for the new installed glazed water collector capacity in 2015

Klassifizierung

aventasolar

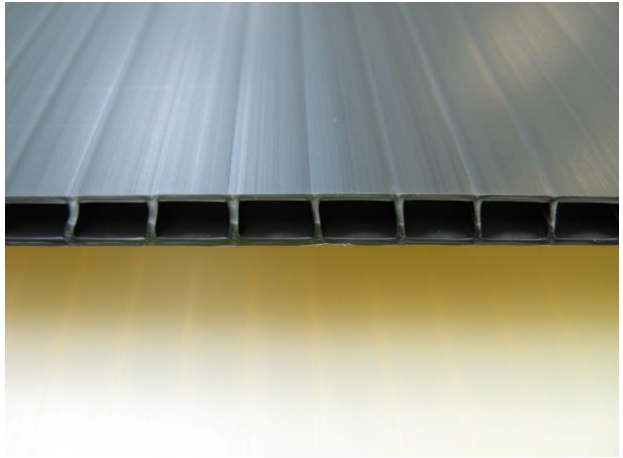
Thermosiphonsysteme

Direct systems		Indirect systems	
drucklos	pressurized	drucklos	pressurized



source: EU-FP7 project SCOOP, Lutschounig, 2014

AventaSolar thermosiphonsystem



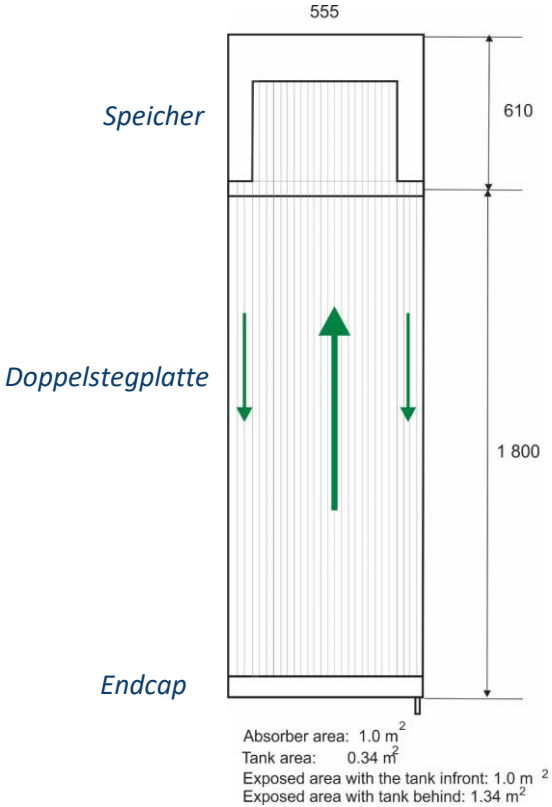
Stegdoppelplatte,
Polypropylen

BOREALIS

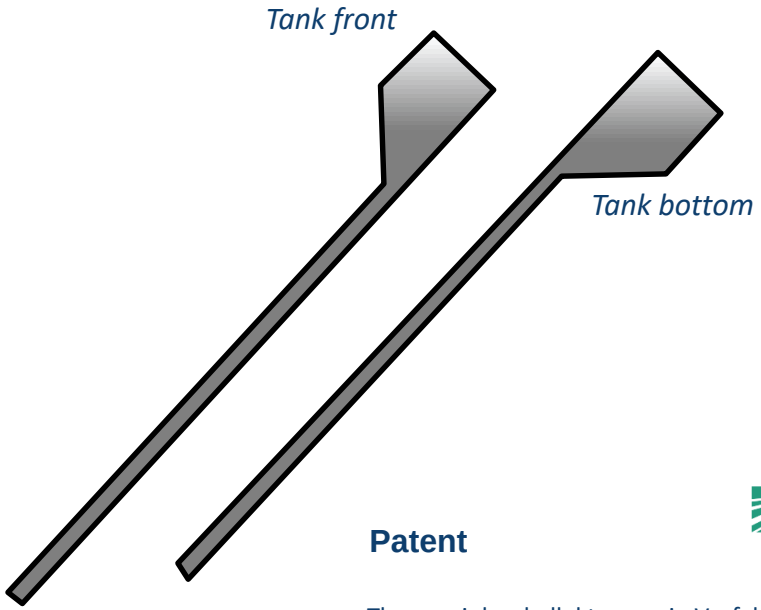
Sheet extrusion

AventaSolar thermosiphonsystem

Ansicht von vorne



Seitl. Ansicht: 2 Versionen



Patent

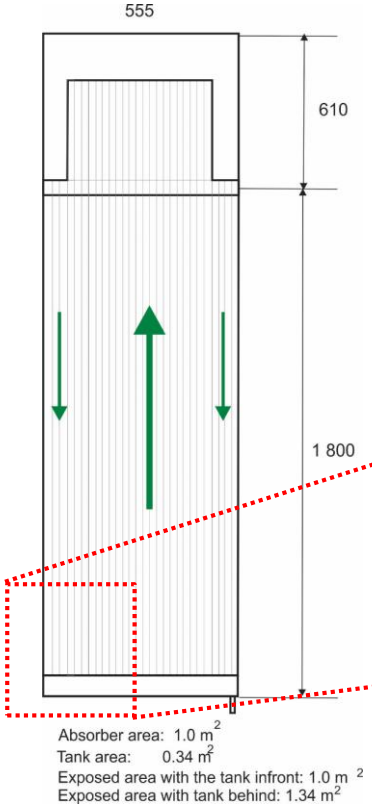
Thermosiphonkollektor sowie Verfahren zu dessen Herstellung
German Patent DE 10 2013 218 966.4
International Patent PCT/EP2014/069705),
inventors: J. Rekstad, M. Köhl, A. Piekarzcyk, M. Meir

Thermosiphon module

Speicher integriert auf der Rückseite

Speicher auf der Vorderseite

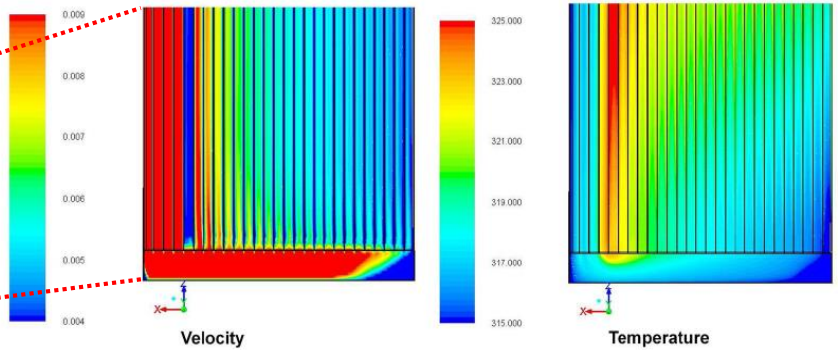
AventaSolar Thermosiphon



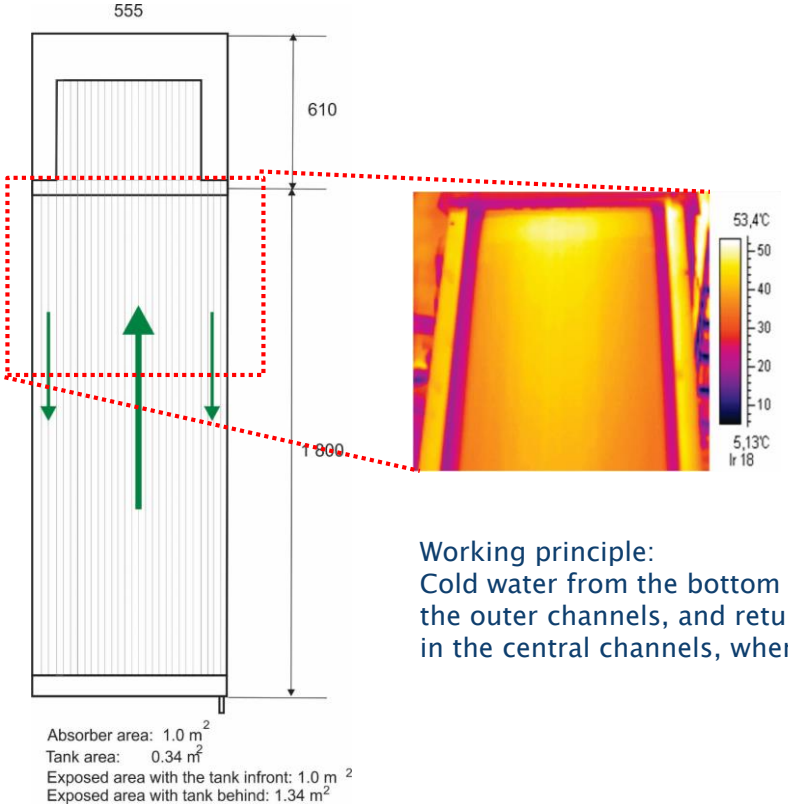
SCOOP

Velocities and temperature in the end cap of the collector

Time step t = 1800 s

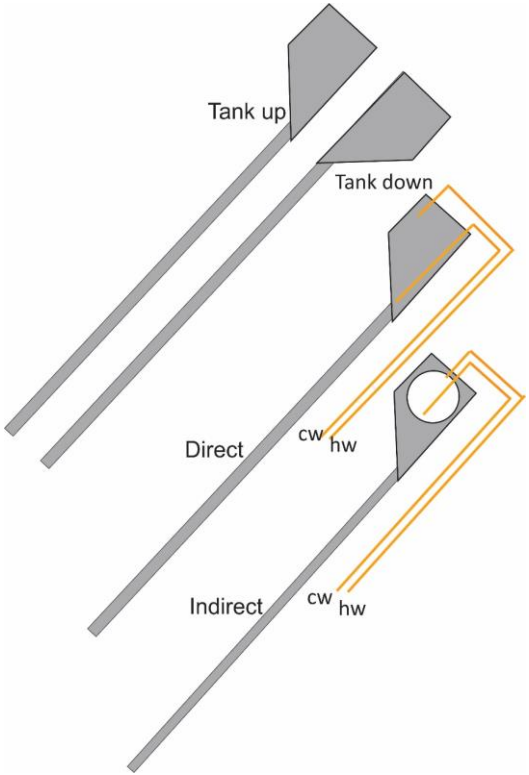


AventaSolar Thermosiphon

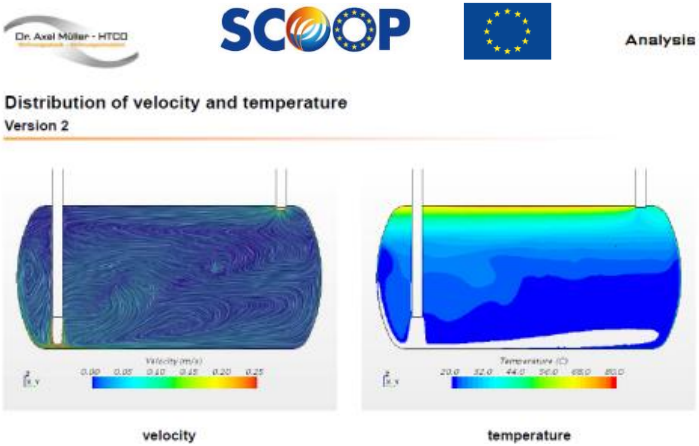


Working principle:
Cold water from the bottom of the storage tank flows down in the outer channels, and return to the storage by upwards flow in the central channels, where it is heated by the sun.

Verschiedene Modelle: Direkte / indirekte Systeme

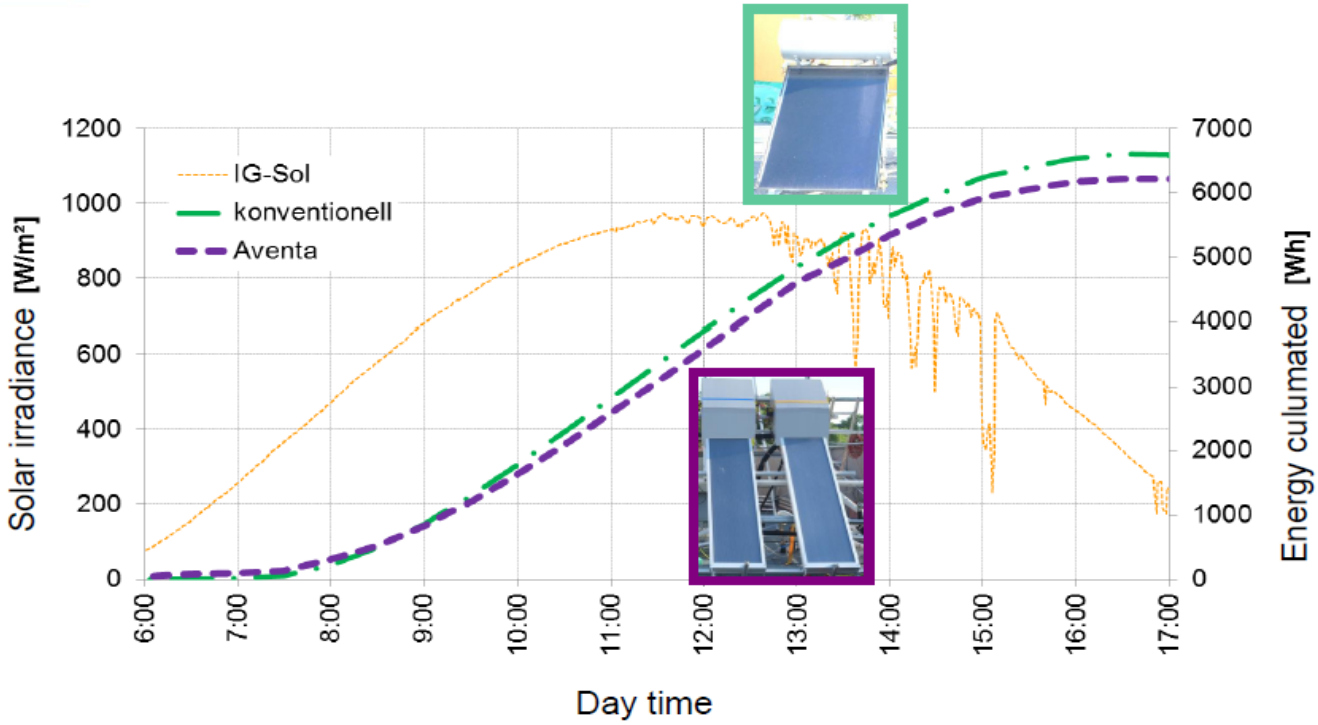


Wärmetauscher im Speicher

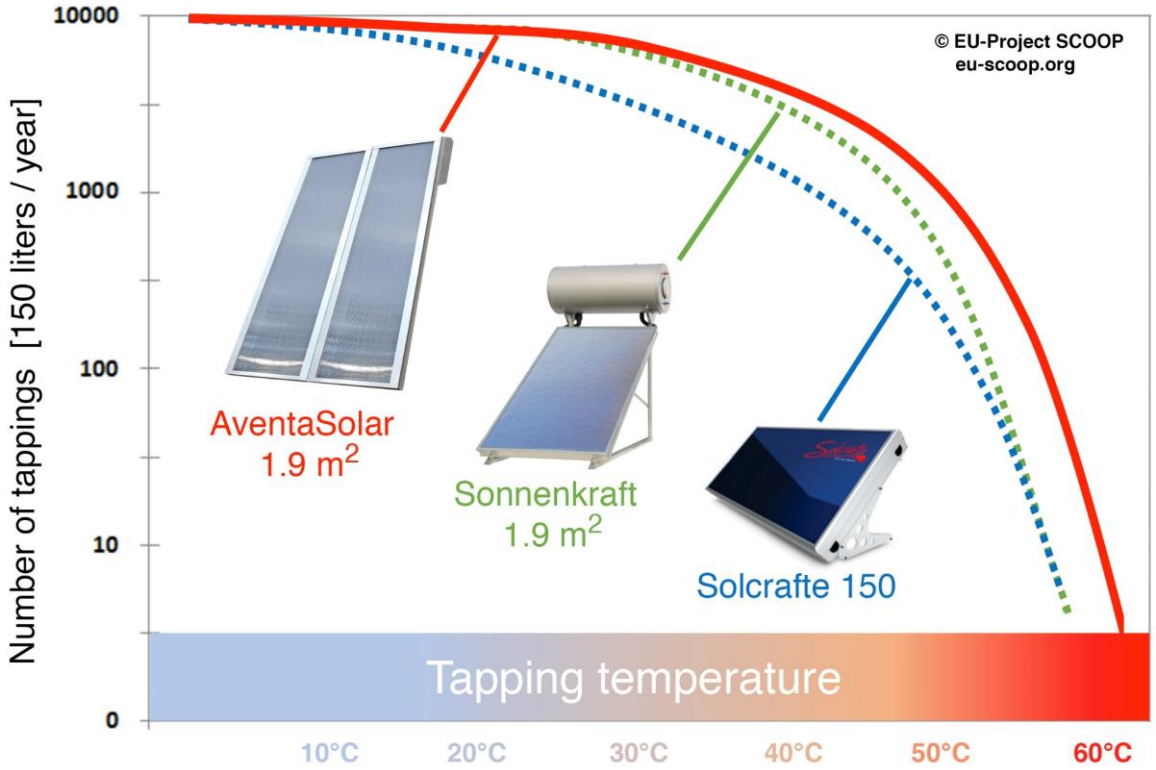


SCOOP Meeting, Oct 01st-03rd 2014, Oslo

WP2: performance comparison

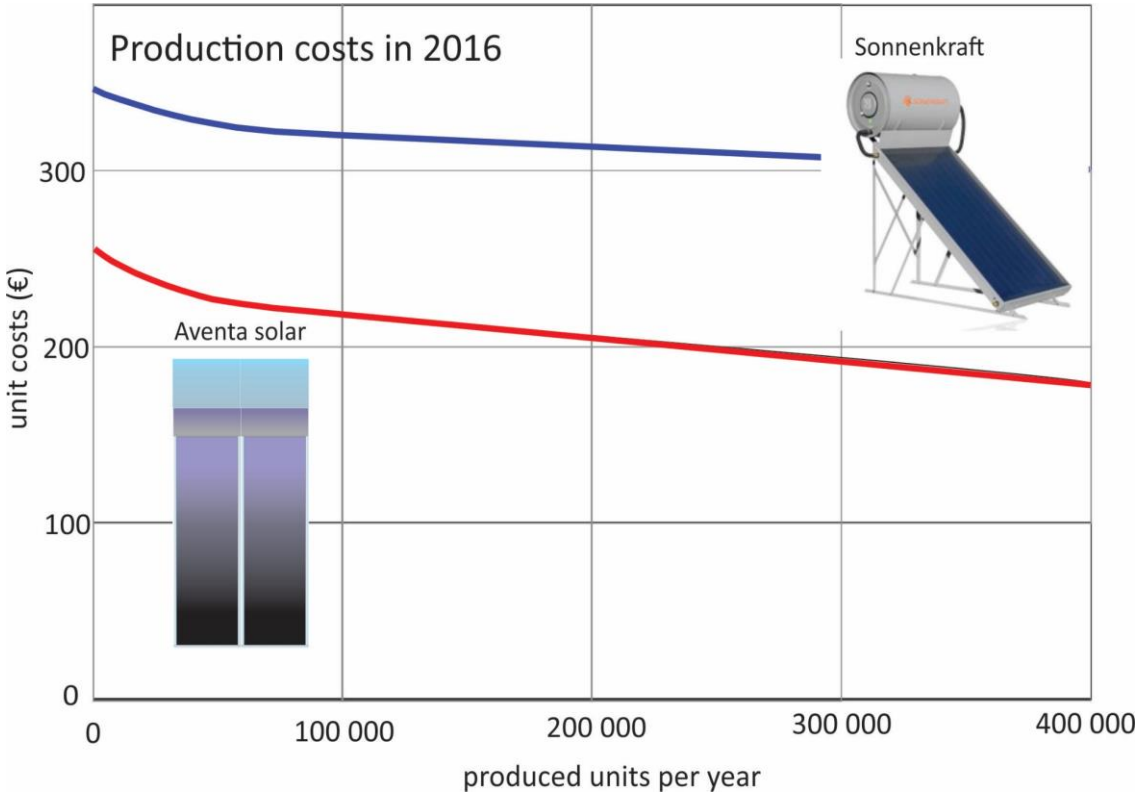


Effektivität



Anzahl der Entnahme von 150 l/year
Palermo (AEE-INTEC). (SCOOP-project, www.eu-scoop.org)

Key-advantages: AventaSolar stand-alone technology



Comparison of productions costs for the AventaSolar
Thermosiphons and a conventional thermosiphon in the market. (SCOOP, www.eu-scoop.org)

Vorteil: Gewicht

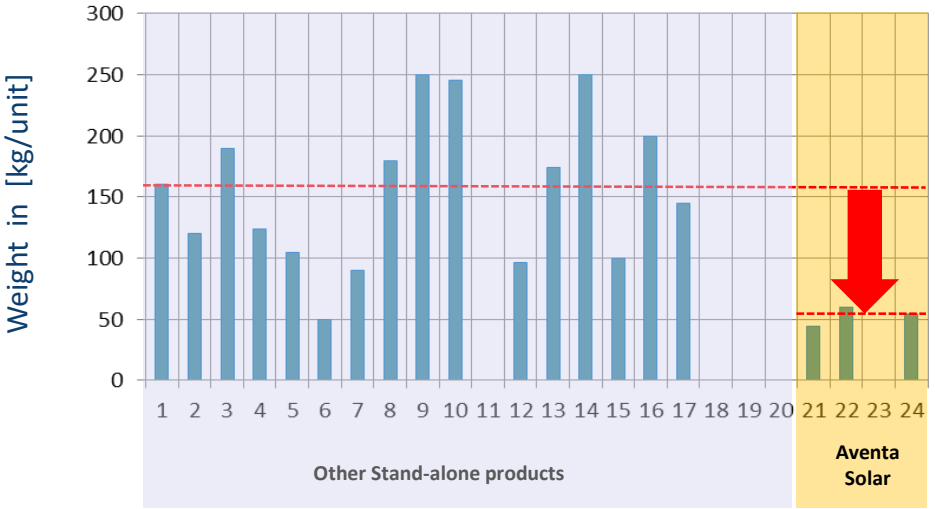
Thermosyphonsystem aus Kunststoffen

SUN&WIND ENERGY
The Platform for Renewable Energies

Sun and Wind Energy Journal **publishes annually market figures about solar energy products. The most recent, detailed information on thermo-siphon systems are from 2013; later market reviews state no significant changes in list prices.**

#	Producer	Type
1	Ao Sol, Portugal	indirect
2	Aatersa, Spain	indirect
3	Batec, Denmark	indirect
4	Chiury Heater, Japan	direct
5	CMG Solari, Italy	indirect
6	Enalter, Brasil	direct
7	Modulo Solar, Mexico	direct
8	NES, Bulgaria	indirect
9	OpenPlus, Portugal	indirect
10	Ouraset, Turkey	indirect
11	Papaemmanouel, Greece	indirect
12	Riello, Italy	indirect
13	Solartech, Malaysia	indirect
14	Solimpeks, Turkay	indirect
15	Sunway, Mexico	direct
16	Termicol, Spain	indirect
17	Wagner, Germany	indirect
18	Bosch Thermotechnik, Germany	indirect
19	CD Solar, Italy	indirect
20	Dagsan-Solar	indirect
21	AventaSolar, 2 modules	direct
22	AventaSolar, 2 modules	direct
23	AventaSolar, 2 modules	direct
24	AventaSolar, 2 modules	indirect

Gewicht / Modul in kg ohne Wärmeträger



Vorteil: Hantieren, Transport, Installation

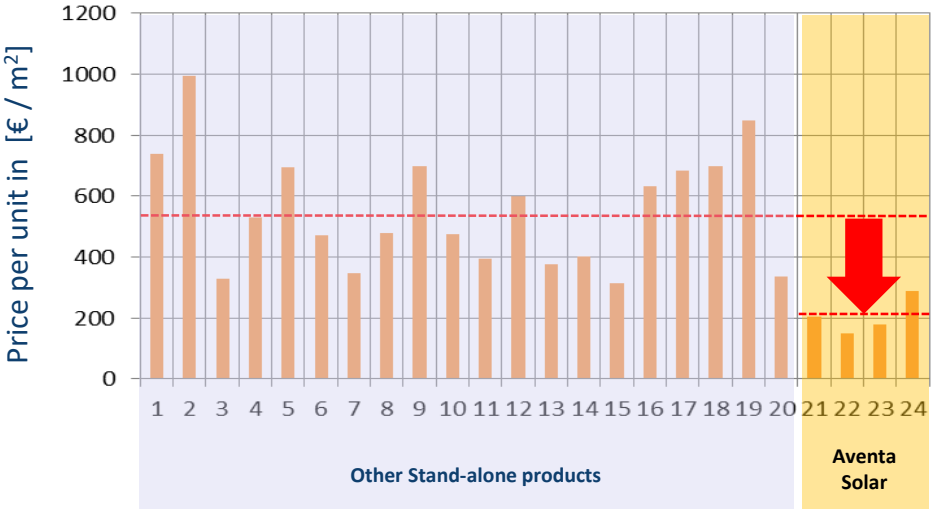
Vorteil: Preis

Thermosyphonsystem aus Kunststoffen

SUN&WIND ENERGY
The Platform for Renewable Energies

Sun and Wind Energy Journal **publishes annually market figures about solar energy products. The most recent, detailed information on thermo-siphon systems are from 2013; later market reviews state no significant changes in list prices.**

#	Producer	Type
1	Ao Sol, Portugal	indirect
2	Aatersa, Spain	indirect
3	Batec, Denmark	indirect
4	Chiury Heater, Japan	direct
5	CMG Solari, Italy	indirect
6	Enalter, Brasil	direct
7	Modulo Solar, Mexico	direct
8	NES, Bulgaria	indirect
9	OpenPlus, Portugal	indirect
10	Ouraset, Turkey	indirect
11	Papaemmanouel, Greece	indirect
12	Riello, Italy	indirect
13	Solartech, Malaysia	indirect
14	Solimpeks, Turkay	indirect
15	Sunway, Mexico	direct
16	Termicol, Spain	indirect
17	Wagner, Germany	indirect
18	Bosch Thermotechnik, Germany	indirect
19	CD Solar, Italy	indirect
20	Dagsan-Solar	indirect
21	AventaSolar, 2 modules	direct
22	AventaSolar, 2 modules	direct
23	AventaSolar, 2 modules	direct
24	AventaSolar, 2 modules	indirect



Weitere Kostenreduktion durch höheres Produktionsvolumen

Internationale Zusammenarbeit, Österreich

- **Task 54**: Price reduction of solar thermal systems (2015-2018)
- **Task 56:** Building integrated solar envelope systems (2016-2020)
- **Task 39:** Polymeric materials for solar thermal applications (2006-2014)
- EU FP7: **SCOOP:** Solar collectors of polymer materials (2011-2015)