



# Solar Heat Worldwide

PVT market analysis

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## Global Market Development and Trends in 2018

## Detailed Market Figures 2017



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<http://www.iea-shc.org/publications-new>



# Solar Heat Worldwide



# Highlight and Trends

Ed. 2018 includes overview of concentrating solar collectors

Ed. 2019 PVT for the first time

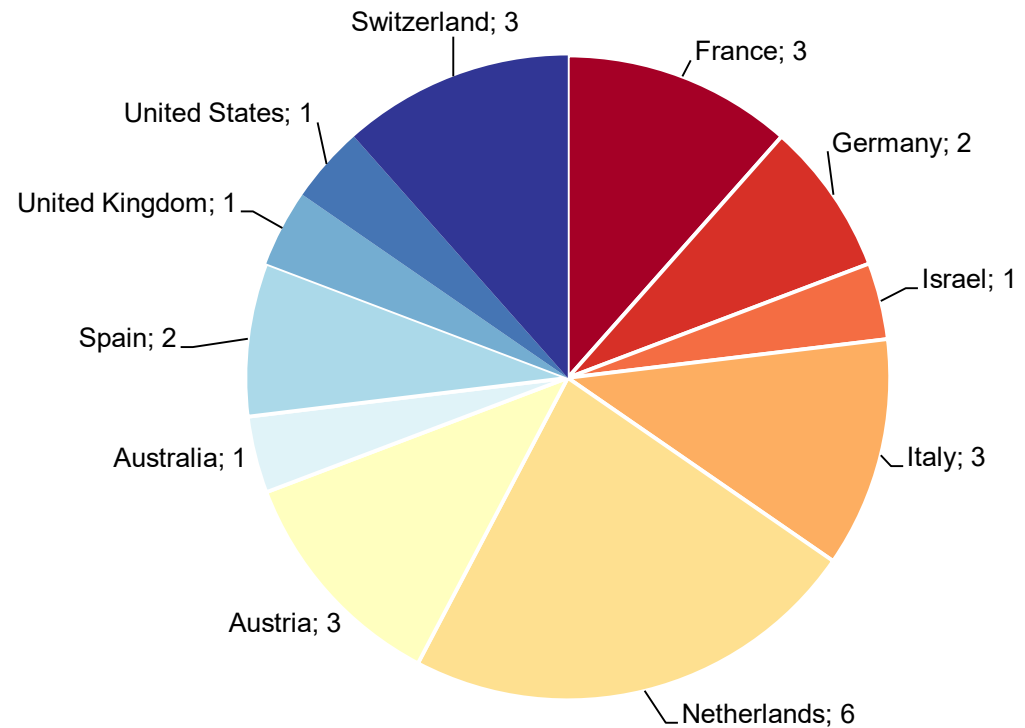


Source: EndeF

# Market overview

Total: 26 PVT collector manufacturer  
(non-exhaustive overview)

Countries: 11



# Category of PVT collectors

## Water Collectors

- Uncovered (wisc)
- Covered
- Evacuated tube



Source: DualSun



Source: 3F Solar



Source: Naked Energy

## Air Collectors



Source: GSE Integration

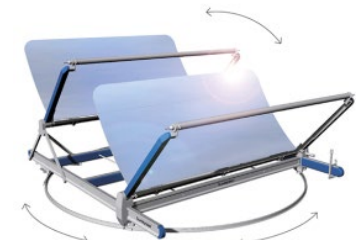


Source: Systovi

## Concentrators

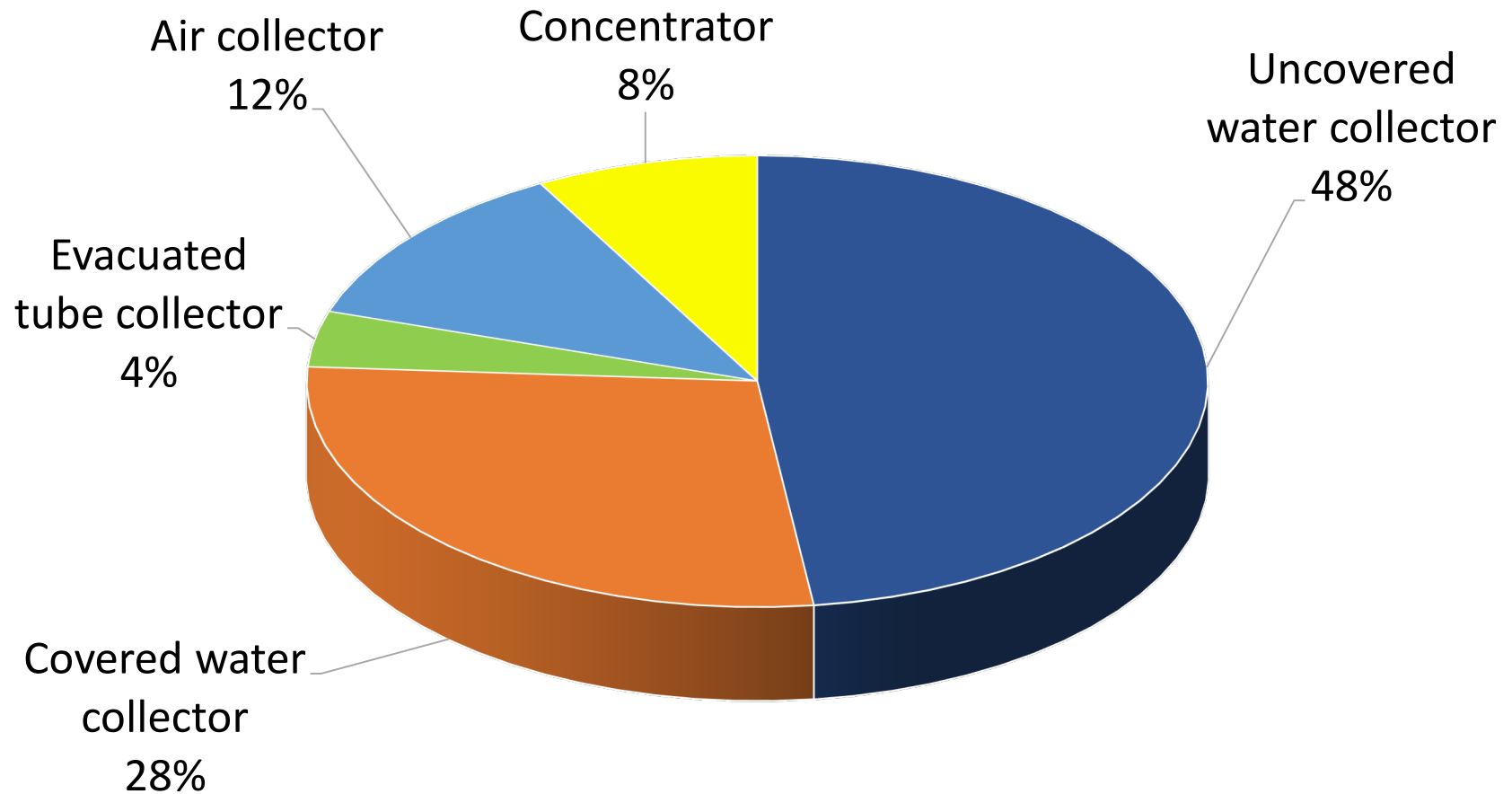


Source: Solarus



Source: Sunoyster

# Market overview – PVT-Producer



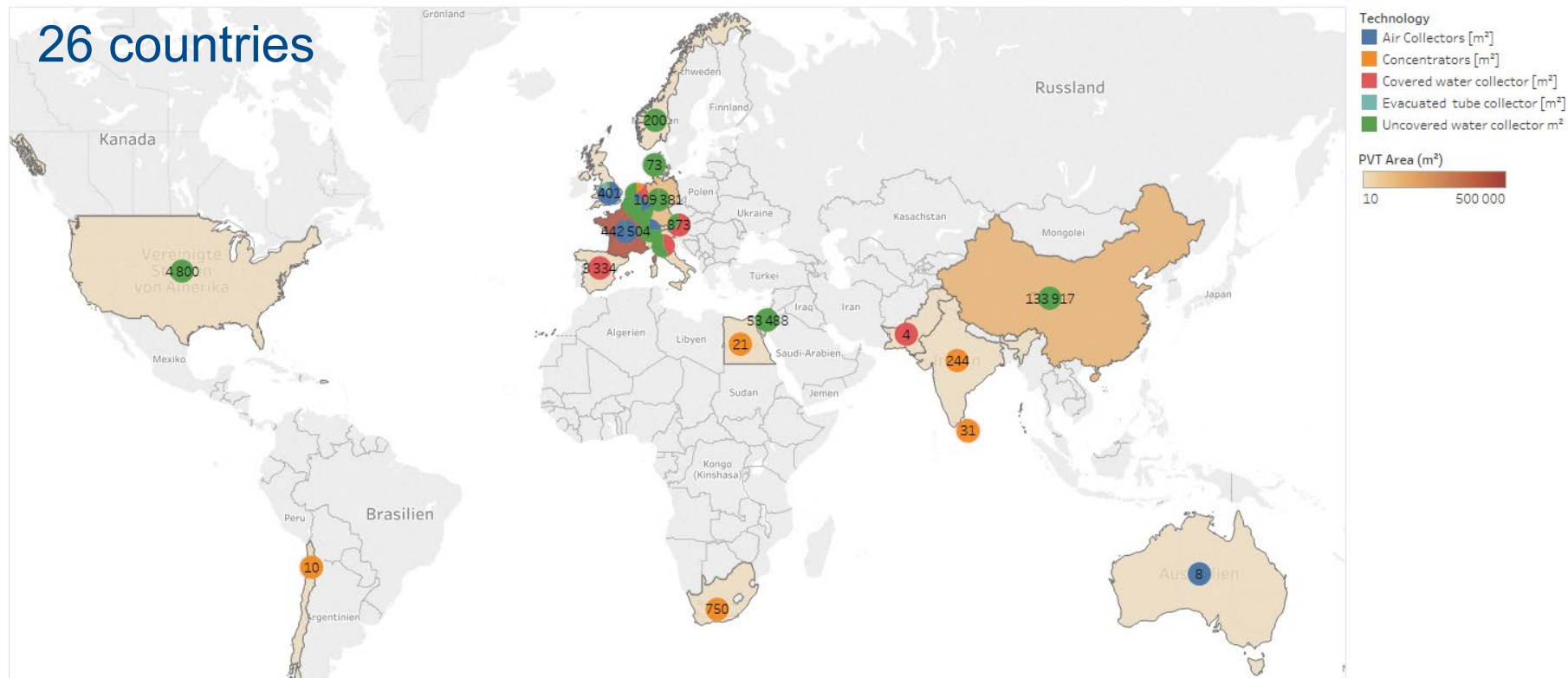
Distribution of PVT-manufacturer by collector type

# World map – Installed PVT collector area

Cumulated installed collector area by end of 2018:

- 57% uncovered
- 41% air collectors
- 2% covered

~ **1.1 Mio m<sup>2</sup>**



## Market leader:

France (442.500 m<sup>2</sup>)

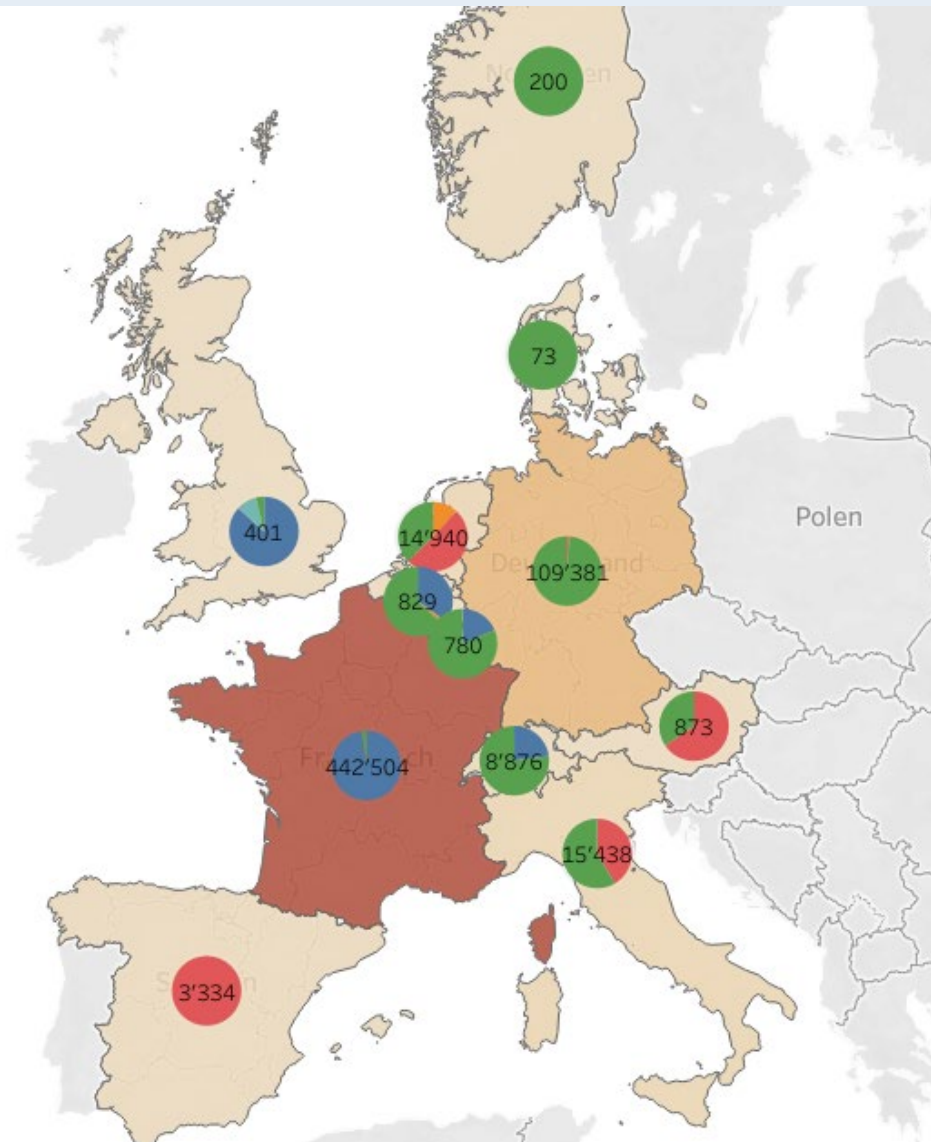
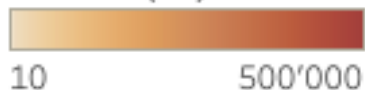
Germany (109.400 m<sup>2</sup>)

Netherlands and Italy (15.000 m<sup>2</sup>)

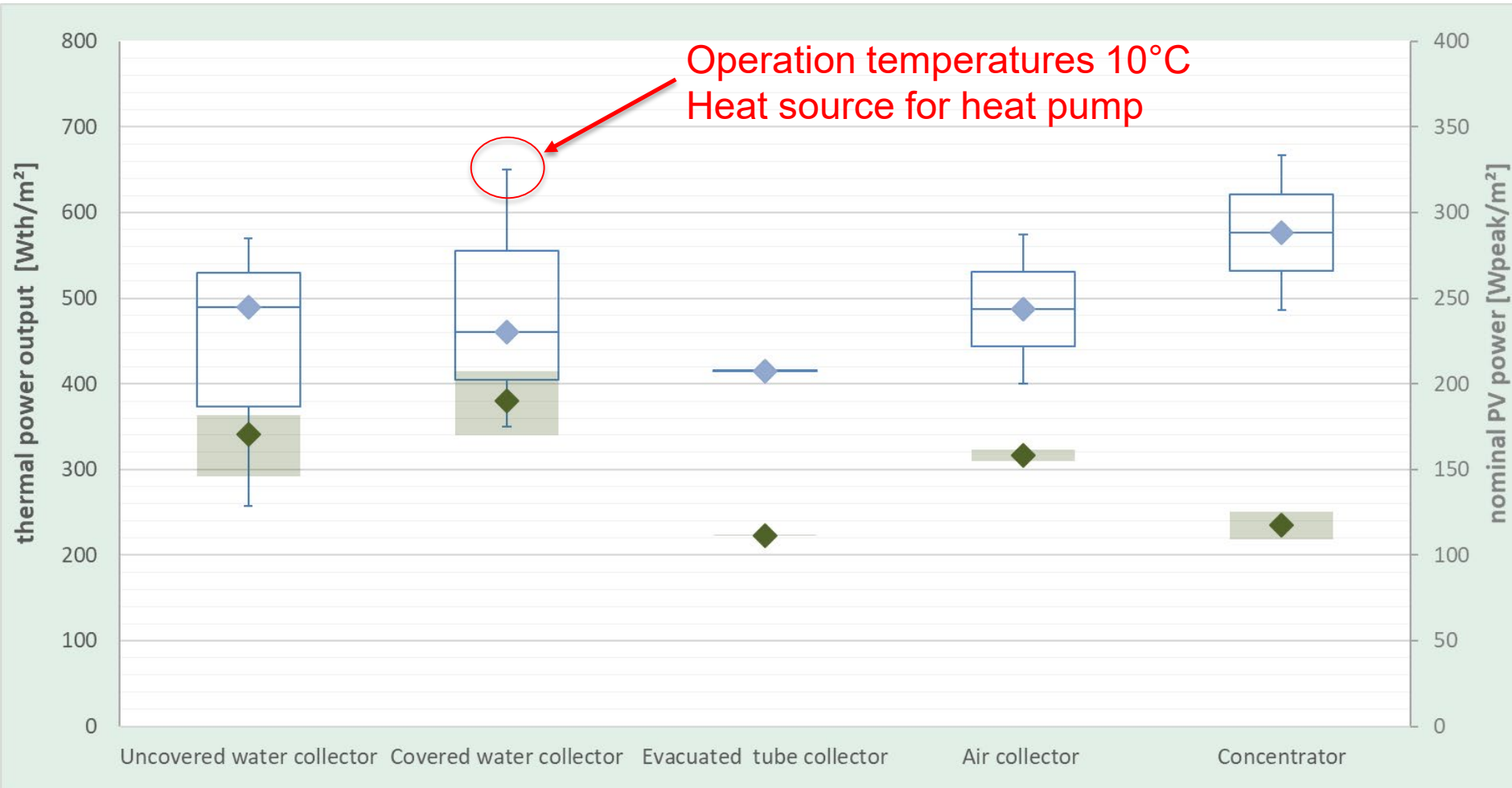
### Technology

- Air Collectors [m<sup>2</sup>]
- Concentrators [m<sup>2</sup>]
- Covered water collector [m<sup>2</sup>]
- Evacuated tube collector [m<sup>2</sup>]
- Uncovered water collector m<sup>2</sup>

### PVT Area (m<sup>2</sup>)



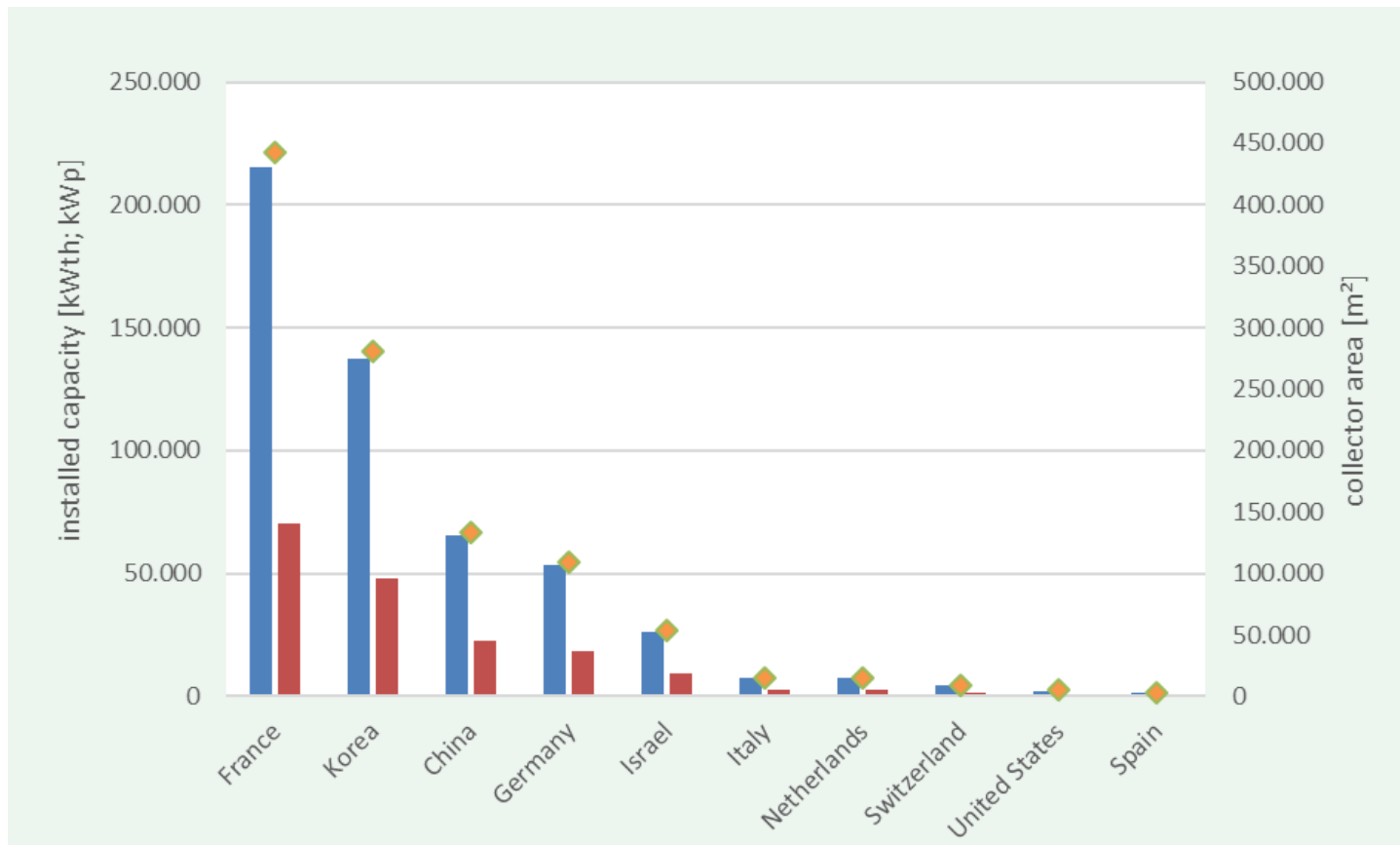
# Installed capacity



# Global installed capacity by country

Thermal capacity: **524,2 MW<sub>th</sub>**

Nominal PV Power: **178,2 MW<sub>peak</sub>**

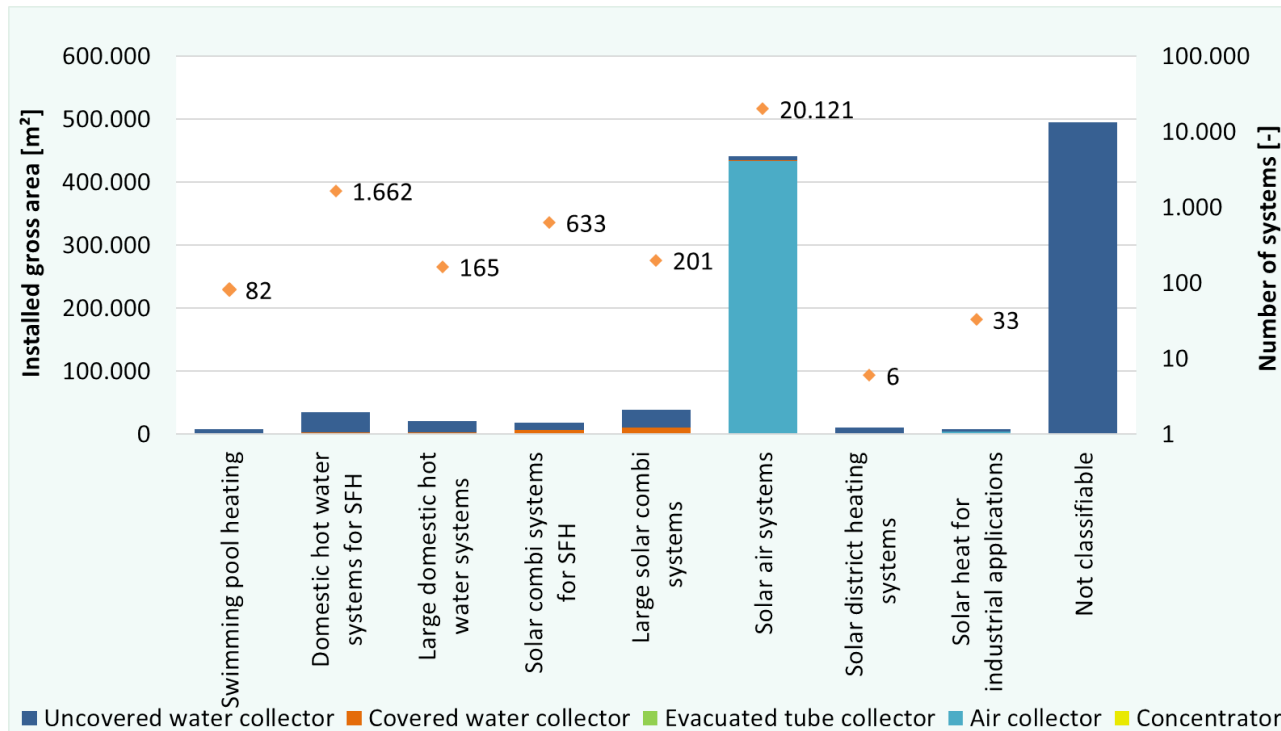


# Global PVT-system plants in operation by type of application

By end of 2018: **>22.900 systems, 581.000 m<sup>2</sup>**

~2.200 systems with uncovered collectors

- 75% DHW – SFH, MFH, hotels, hospitals, etc.
- 21% Combi systems



# Uncovered PVT GS-Regeneration



Building complex (7 MFH, 50 flats, swimming pool)

Source: Swiss Travel Fund Cooperative (Reka)

## Heating system

31 boreholes of 150 m  
Centralized heat pumps  
Heat recovery for pool and DHW  
672 m<sup>2</sup> PVT collector area

## Performance:

Thermal yield 400 kWh/m<sup>2</sup>  
Electric yield 130 kWh/m<sup>2</sup>  
Degree of GS regeneration 98 %

# Covered PVT collectors for hotels

Installed collector area 148 m<sup>2</sup>

Ibiza, Spain



## Performance:

Thermal yield 112.814 kWh/a

Electrical yield 34.600 kWh/a

CO2 saving: 41.639 kg/a

Source: EndeF

# Low concentration PVT collectors for industrial application

Installed capacity:  $110\text{kW}_{\text{th}}$  and  $22\text{kWp}_{\text{elect}}$   
Katwoude, Netherlands



**Performance:**  
54 MWh heat and 15 MWh electricity

Source: Solarus



**AEE INTEC**

**IDEA TO ACTION**

**Thank you  
for your Attention**