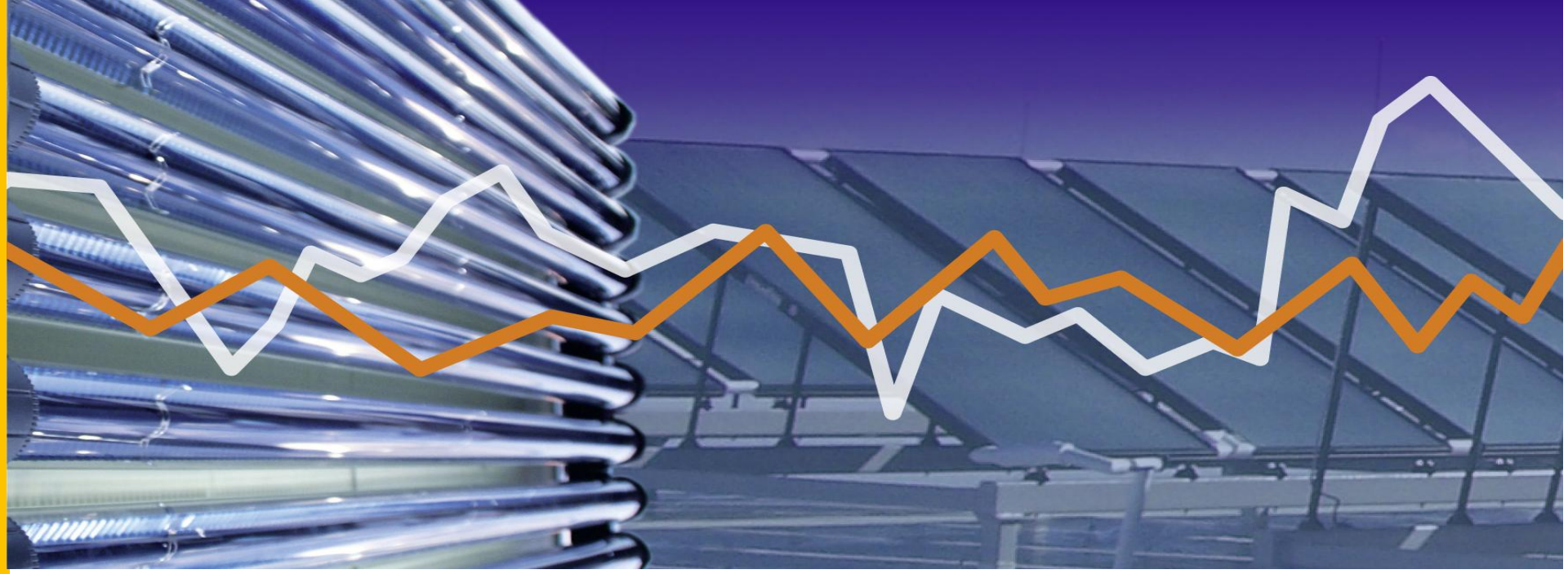


Industry and Market Trends 2017

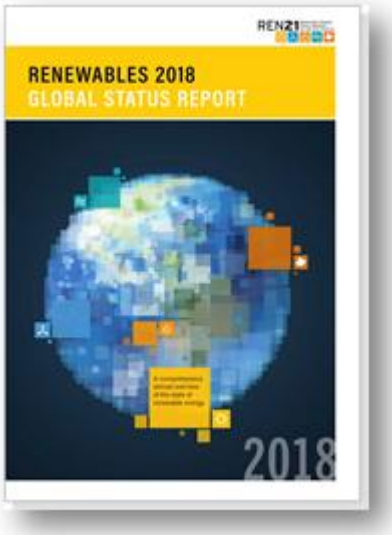
Author: Bärbel Epp, solrico

Email: epp@solrico.com, www.solrico.com

Solrico – global solar market research network focusing on the solar thermal sector

What is the Global Status Report?

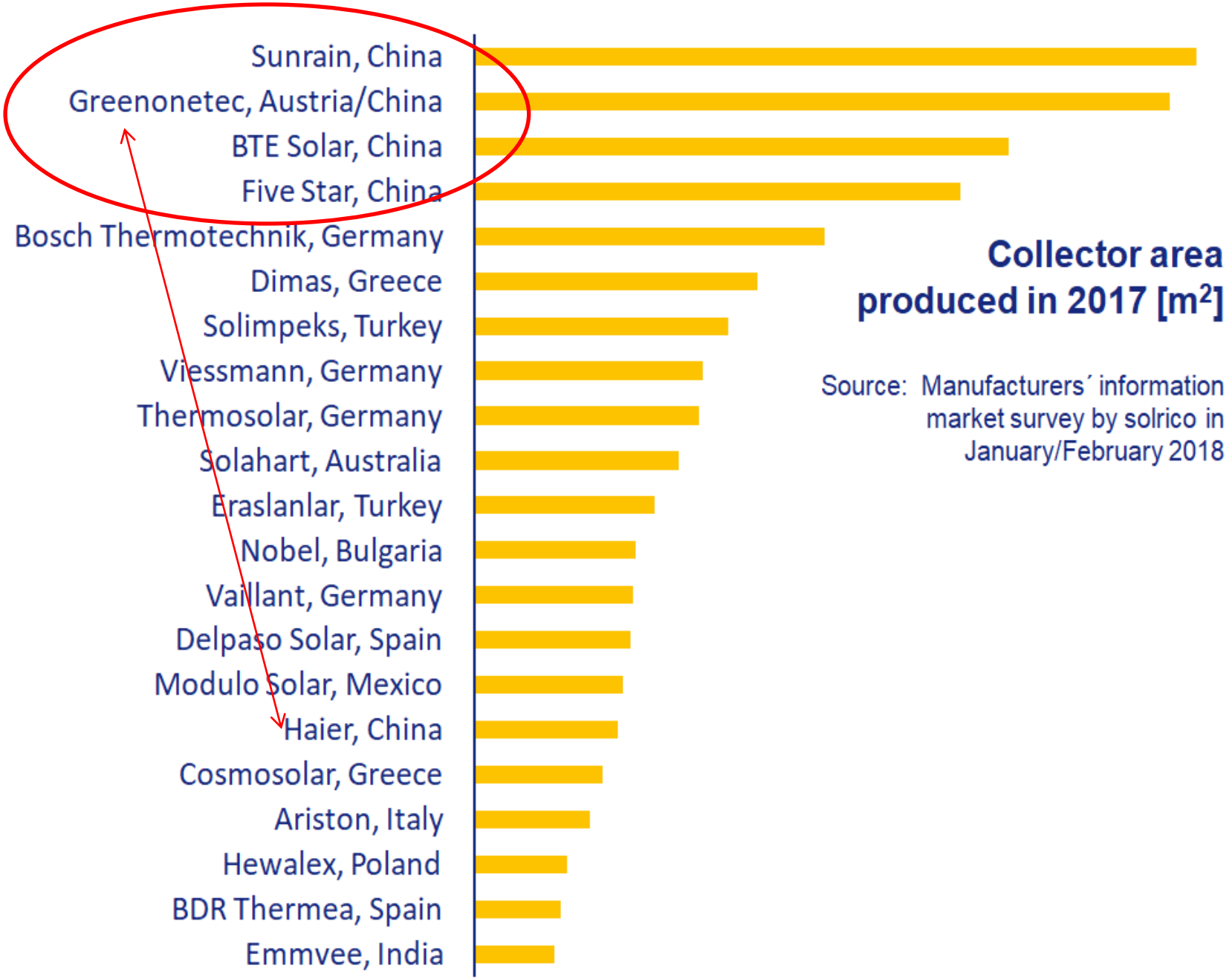
- Annual policy advocacy report about the status of all renewable energies including efficiency on 325 pages (including 80 pages endnotes)
- Launch around the world in several events plus press releases in 12 languages with the key message: **Transformation is picking up speed in the power sector, but urgent action is required in heating, cooling and transport**
- 70,000 downloads over the year



What is worth reading in the GSR?

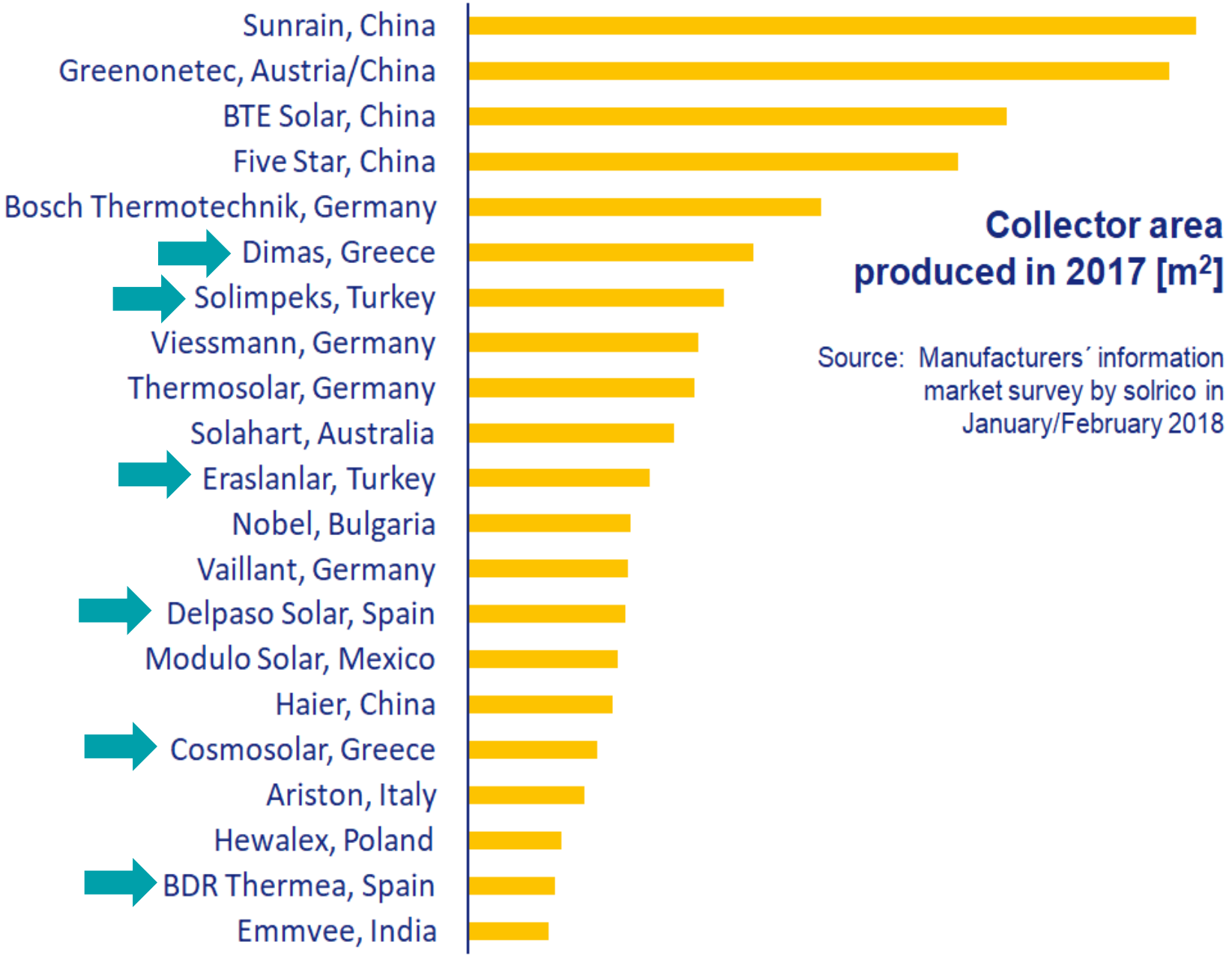
RANKING OF THE LARGEST FLAT PLATE COLLECTOR MANUFACTURERS

Ranking of the largest flat plate collector manufacturers worldwide



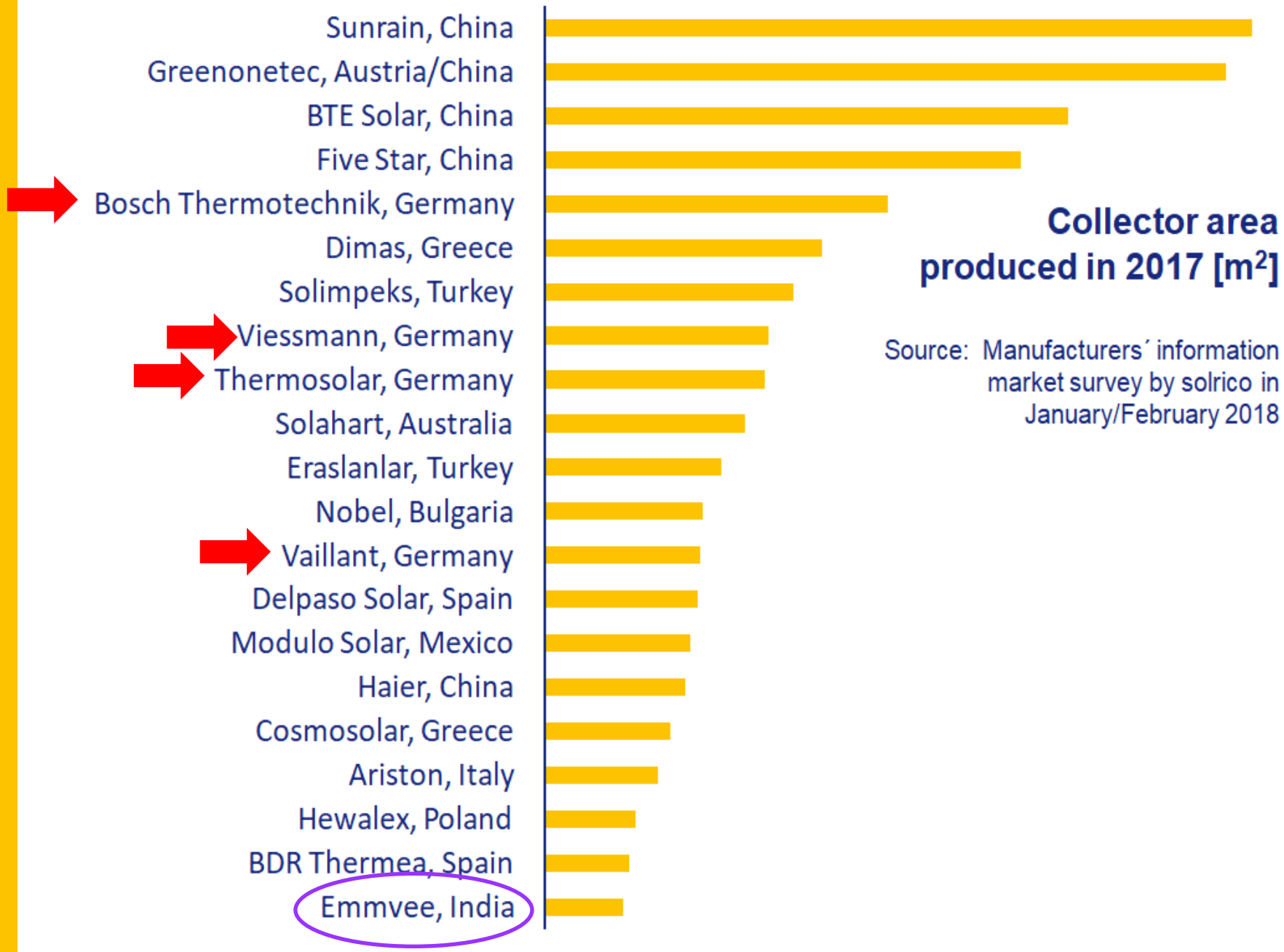
Source: Manufacturers´ information market survey by solrico in January/February 2018

Ranking of the largest flat plate collector manufacturers worldwide



Source: Manufacturers´ information market survey by solrico in January/February 2018

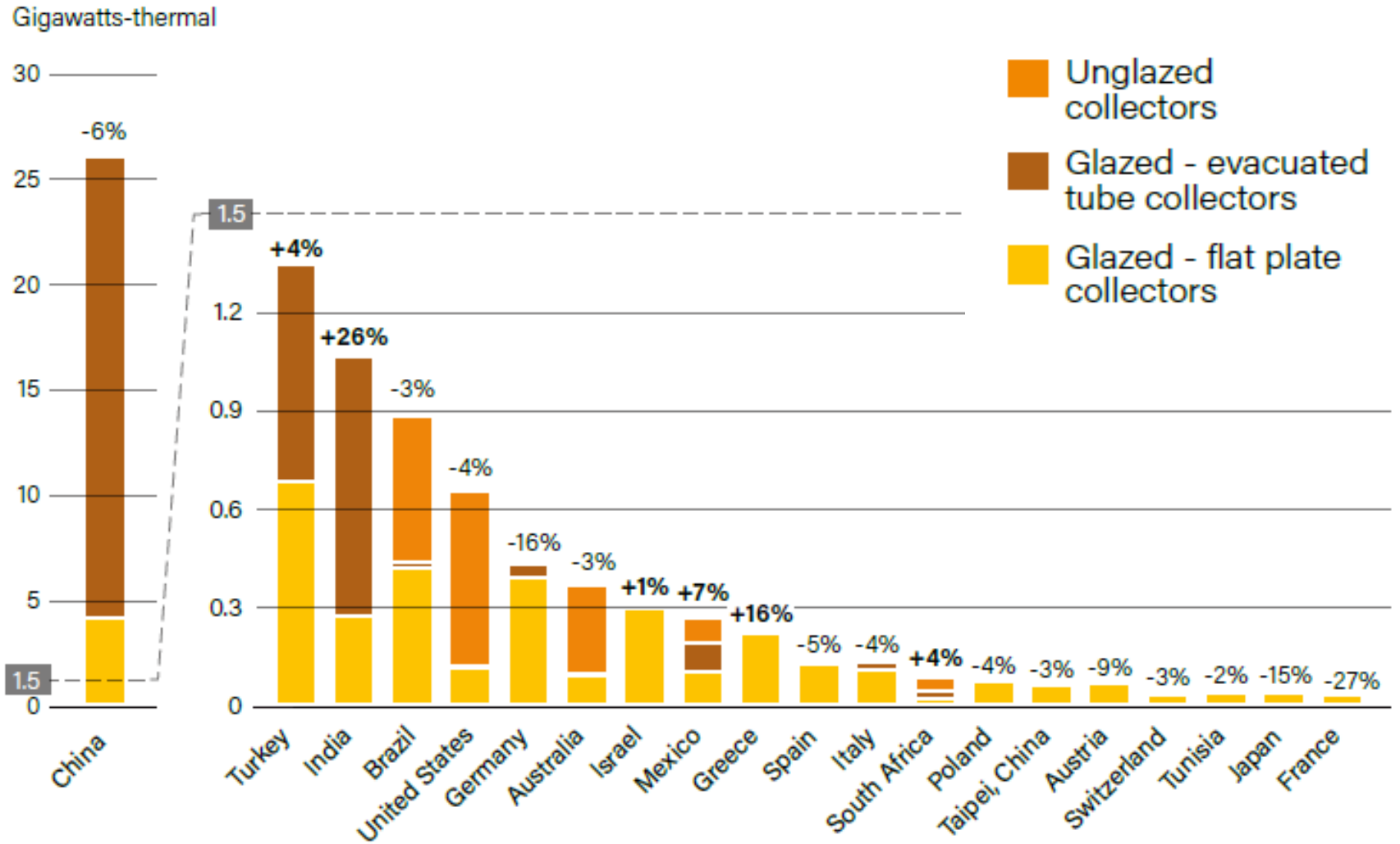
Ranking of the largest flat plate collector manufacturers worldwide



Source: Manufacturers´ information market survey by solrico in January/February 2018

Market development 2017 in the largest markets

FIGURE 31. Solar Water Heating Collector Additions, Top 20 Countries for Capacity Added, 2017



Source: Global Status Report 2018

Strategic industry cooperations

Sources: Greenonetec, Absolicon, Arcon-Sunmark gazeta.uz

RECORD YEAR OF NEW SHIP INSTALLATIONS

Record year of new SHIP plants 2017

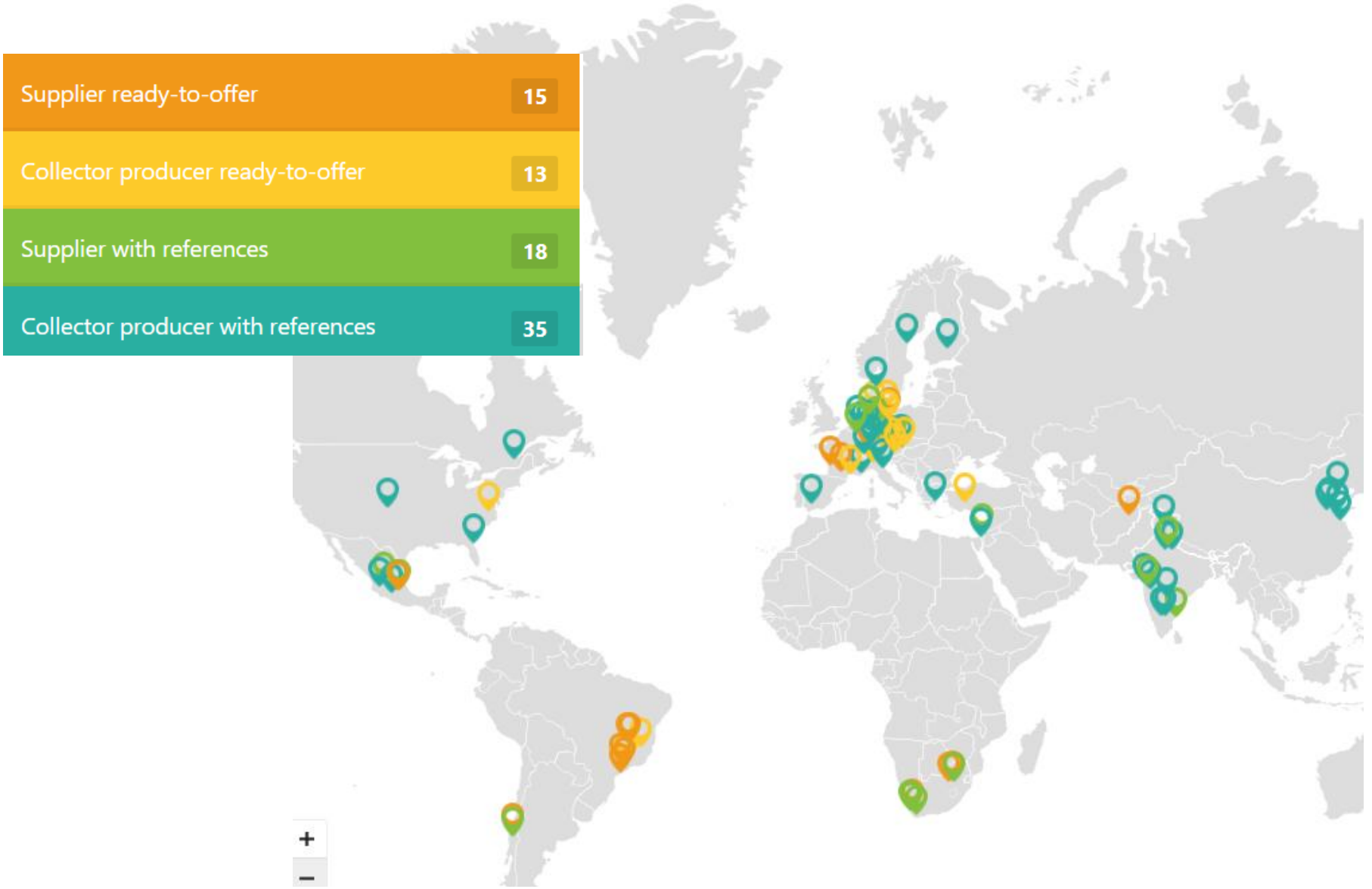
➢635 SHIP systems
(end of 2017)

125 SHIP systems
(end of 2012)

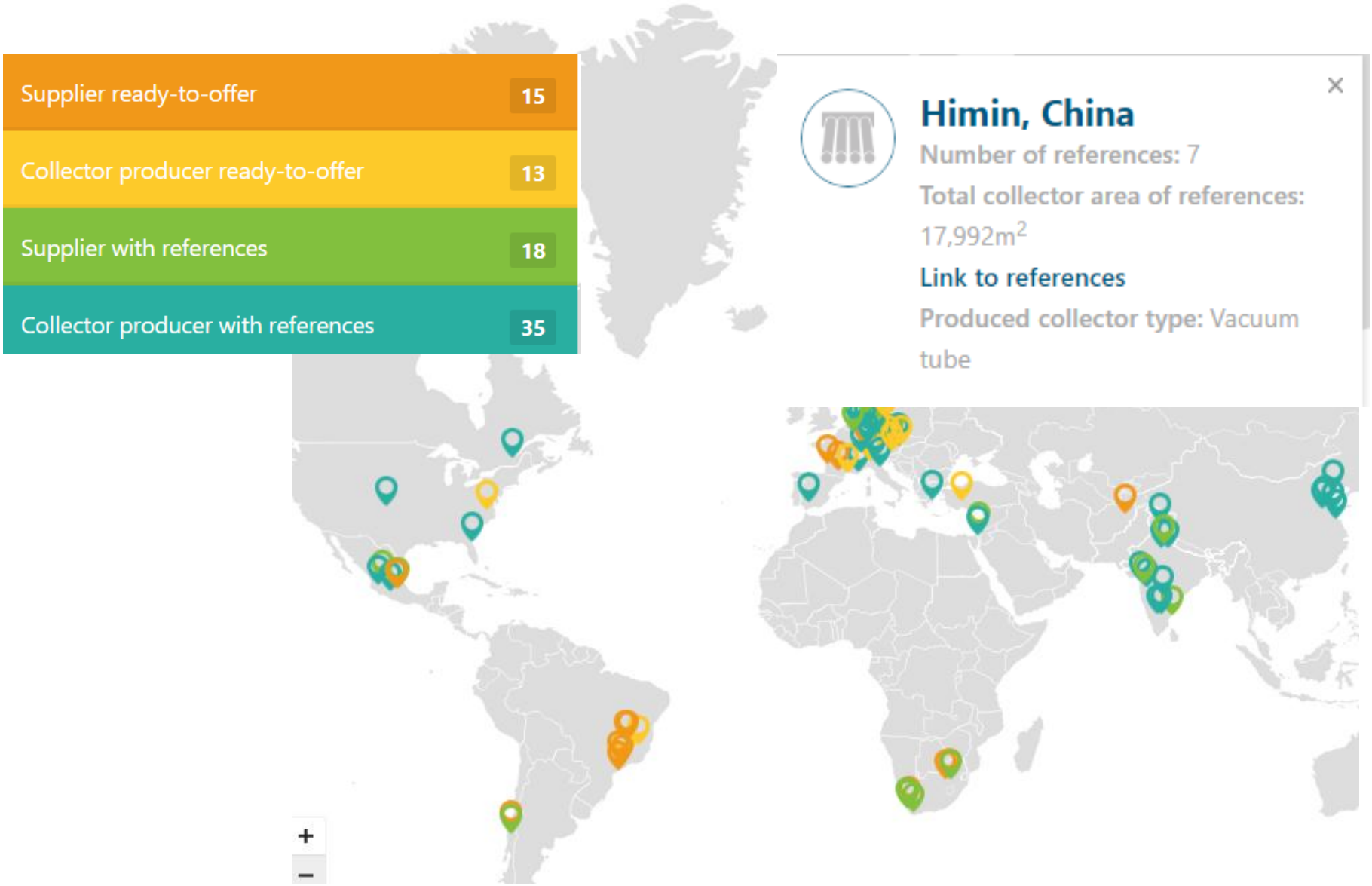
+110 SHIP systems
in 19 countries in 2017 from 35 different SHIP suppliers

Source: Solar-payback.com

SHIP Supplier World Map on **solar-payback.com**



SHIP Supplier World Map on **solar-payback.com**



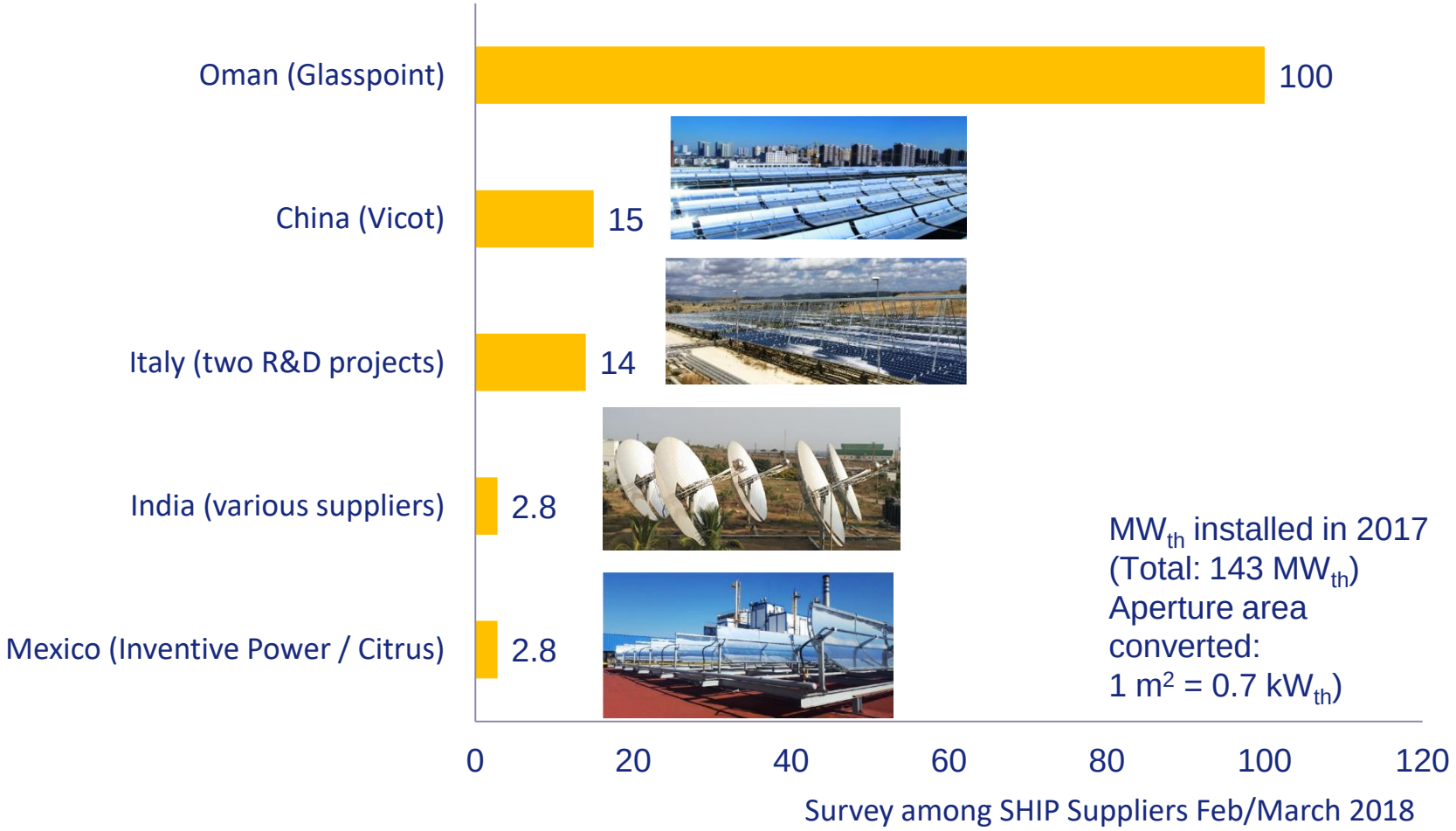
Drivers and barriers for the SHIP markets

Drivers for SHP market	Barriers for SHIP market
Economic competitiveness (India, Mexico)	Low awareness for SHIP among industry
Large and committed supply chain	Little visibility of existing systems
Direct subsidies (India, France, Germany)	Low fossil fuel prices
Clainer air by compensation of steam coal boilers	Industrial customer ask for short payback times
“The market is huge. More SHIP plants should be installed to replace the coal and gas boilers to reduce the carbon emissions”	“Every project is a customer education process and requires project specific engineering”

Survey among SHIP Suppliers Feb/March 2018

CONCENTRATING TECHNOLOGIES INCREASINGLY USED FOR SOLAR HEAT

New capacity 2017 installed with solar concentrating collectors



INCENTIVES FOR SOLAR DISTRICT HEATING IN EUROPE

“Solar district heating is the most cost-effective way to decarbonise the building sector”

An increasing number of countries support installation and modernisation of district heating networks with a high share of renewables:

- **Austria:** Since 2000 the Austrian Energy and Climate Fund large-scale solar district heating plants up to 10,000 m^2 with 20 to 40 % of the investment costs depending on the size of the plant. Climate Fund
- **France**: Since June 2015 Ademe offers tenders which subsidise collector fields above 500 m^2 for district heating when at least 50 % is covered by solar, biomass or waste heat. Ademe
- **Italy:** Since January 2016 the national subsidy scheme Conto Termico subsidises collector fields up to 2,500 m^2 (beforehand only up to 1,000 m^2). Conto Termico
- **Netherlands:** Since 2016 the SDE+ programme supports solar fields above 140 kW_{th} (200 m^2) with a solar heat tariff depending on the tender round to bridge the gap between market and production price**.** SDE+
- **Germany:** Since 1 July 2017, utilities and cooperatives receive grants covering up to 60 % of the cost of feasibility studies and up to 50 % of the investment in new district heating networks, when at least 50 % are covered by solar, biomass or waste heat. MAP
- **Slovenia**: Public tenders for co-financing district heating using renewable energy sources for the period 2017 to 2020. Solar collector fields are funded with 350 EUR/m2 for flat plates and 500 EUR/m2 for vacuum tube collectors up to a size of 10 MW_{th} (14,000 m^2) Co-funding

“Solar district heating is the most cost-effective way to decarbonise the building sector”

An increasing number of countries support installation and modernisation of district heating networks with a high share of renewables:

- **Austria:** Since 2000 the Austrian Energy and Climate Fund large-scale solar district heating pla… 000 m² with 20 to 40 % of the investment costs depending on the size of the plant. Climate F…
- **France**: Since June 2015 Ademe offers tenders which subsidise co… g when at least 50 % is covered by solar, biomass or waste heat…
- **Italy:** Since January 2016 the natio… 2,500 m² (beforehand only up to 1,0…
- **Neth…** …ve 140 kW_{th} (200 m²) with a solar heat tariff dep… …arket and production price**.** SDE+
- **Gern…** …ooperatives receive grants covering up to 60 % of the cost of feasibility studie… …vestment in new district heating networks, when at least 50 % are covered by solar, bioma… …t. MAP
- **Slovenia**: Public tenders for co-financing district heating using renewable energy sources for the period 2017 to 2020. Solar collector fields are funded with 350 EUR/m2 for flat plates and 500 EUR/m2 for vacuum tube collectors up to a size of 10 MW_{th} (14,000 m²) Co-funding

Next is Poland (NFOŚiGW, the National Fund for Environmental Protection and Water Management) and the Balkan countries (World Bank and European Bank of Reconstruction and Development).

Regular updates on the database of incentive programmes, check:
http://www.solarthermalworld.org/incentive

SOLAR THERMAL AIR-CONDITIONING STILL A NICHE MARKET

New commercial solar thermal cooling plants 2017/2018

Soft Loan to Fund EUR 4 Million project for air conditioning and warm water for a military hospital in Nicaragua (4,450 m^2 flat plate collectors and 1 MW cooling capacity).

Gujarat State Electricity Corporation cools his office (1,575 m^2 vacuum tube collectors, 150 tons of refrigeration) in western India (August 2017).

IKEA in Singapore cool is two sales floors, a small office and a warehouse partly with 2,475 m^2 flat plate collectors power 880-kW absorption chiller (250 RT) (February 2018)

A 700 kW Fresnel system provides solar steam for process heat and air conditioning to tobacco manufacturer Japan Tobacco International in Jordan since late 2017.

Photos: S.O.L.I.D., Industrial Solar, VSM Solar

Market stimulating factors

- Solar thermal cooling makes absolute sense when both hot water/heating and cooling demand is covered over the year
  - Yazaki, Italy, commissioned 9 systems in commercial buildings including solar hot water preparation in Italy and Spain)
- Potential to reduce electricity consumption and to avoid electricity peak loads
  - Fahrenheit, Germany: 10 kW sorption chiller at a waste heat recovery company in Dubai and TVP Solar, Switzerland: 34 TR chiller at headquarters of a logistic company in Kuwait with evacuated flat plate collecters).
- China´s ambitious target (13th Five-Year-Plan): solar thermal energy to cover 2% of the cooling load in buildings by 2020. Two huge solar thermal air conditioning systems announced.
  - 40,000 m2 of flat plate solar collectors working with lithium bromide absorption chillers cooling public buildings with a floor space of 200,000 m2
  - 10,000 m2 of collector area should heat and cool the Xiaoya office and industry complex in Jinan.

Source: Survey among technology suppliers March 2018

Thanks for your attention!

Bärbel Epp, epp@solrico.com

www.solrico.com, www.solarthermalworld.org