



SHC Industry Trends 2019

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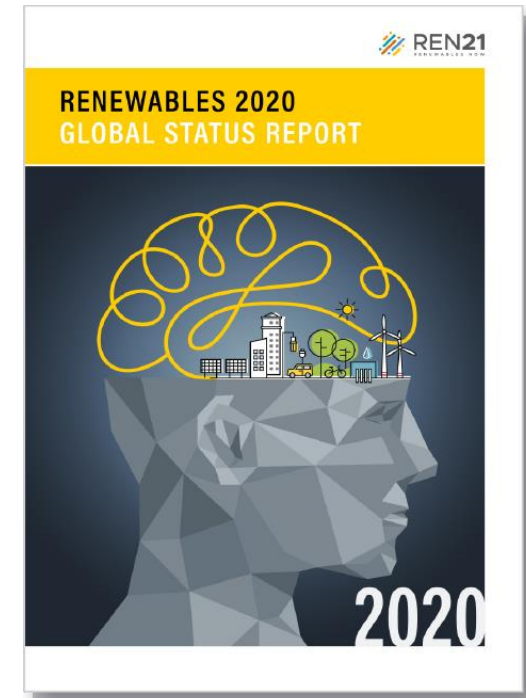
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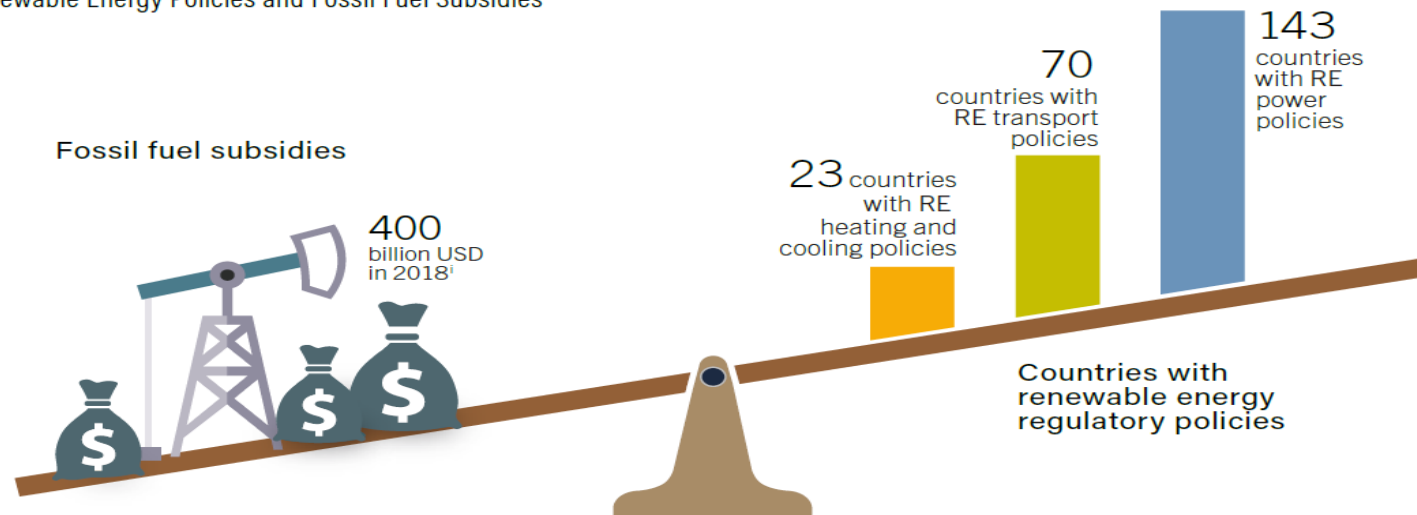


Alarming messages of the GSR 2020

- ▶ The total final energy demand increased 1.4 % annually from 2013 to 2018.
- ▶ The share of renewables in total final energy demand barely increased (9.6 % in 2013 to 11 % in 2018).
- ▶ In the heating, cooling and transport sector the barriers are nearly the same as 10 years ago.
- ▶ By the end of 2019, only 49 countries had renewable heating and cooling targets, compared to 166 countries with renewable power targets.



Renewable Energy Policies and Fossil Fuel Subsidies



¹ not including externalities

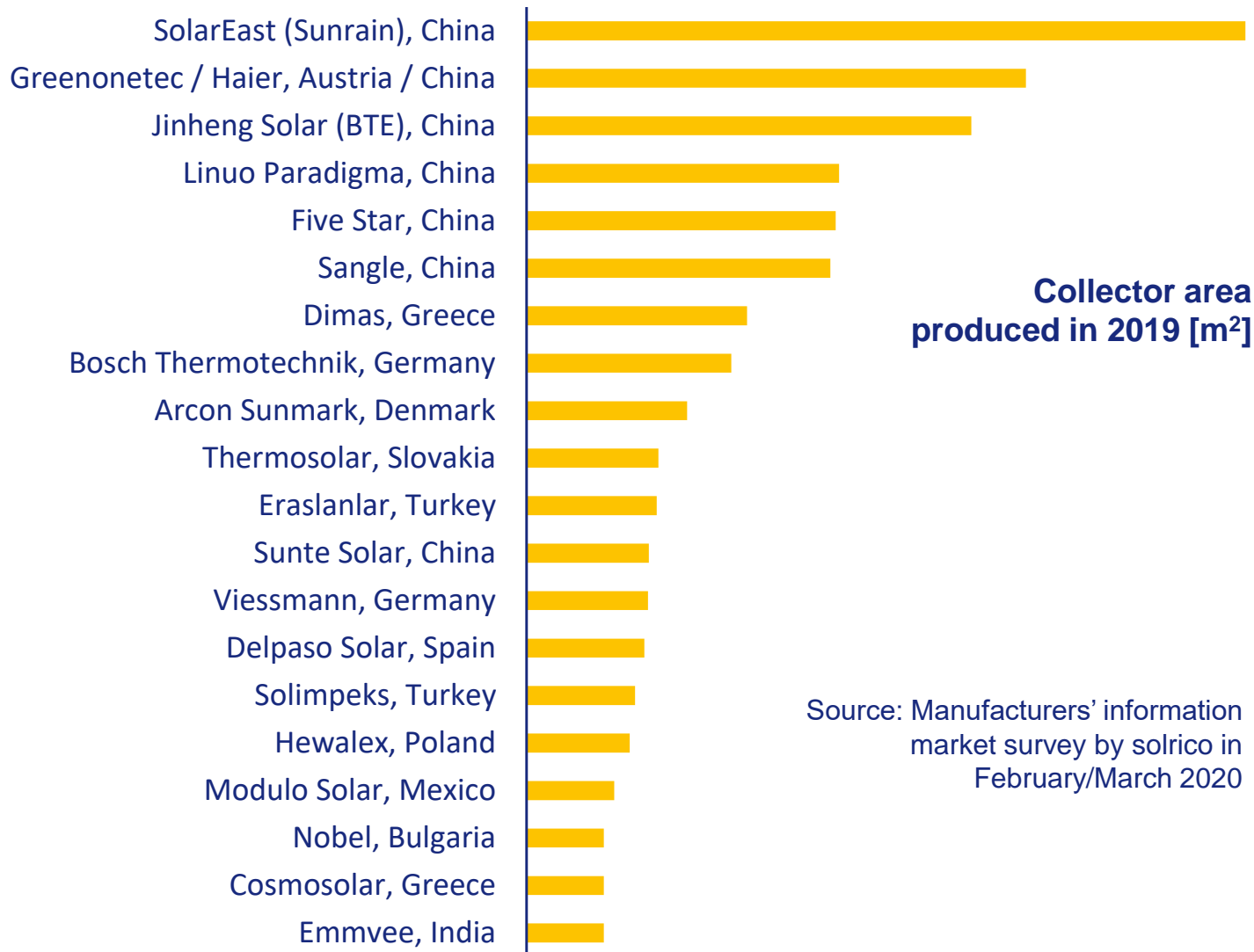
Source: GSR 2020

240+ articles and 1,000+ mentions in social media in just one week after the launch and 50,000 downloads over the year

Download report, summary, all figures and key charts: www.ren21.net/gsr



Ranking of the largest flat plate collector manufacturers worldwide



Plus 9 % production volume overall due to increasing demand for flat plates in high rise buildings in China

Minus 8% for Central European manufacturers

Arcon Sunmark (Denmark) climbed and Hewalex (Poland) dropped in the listing

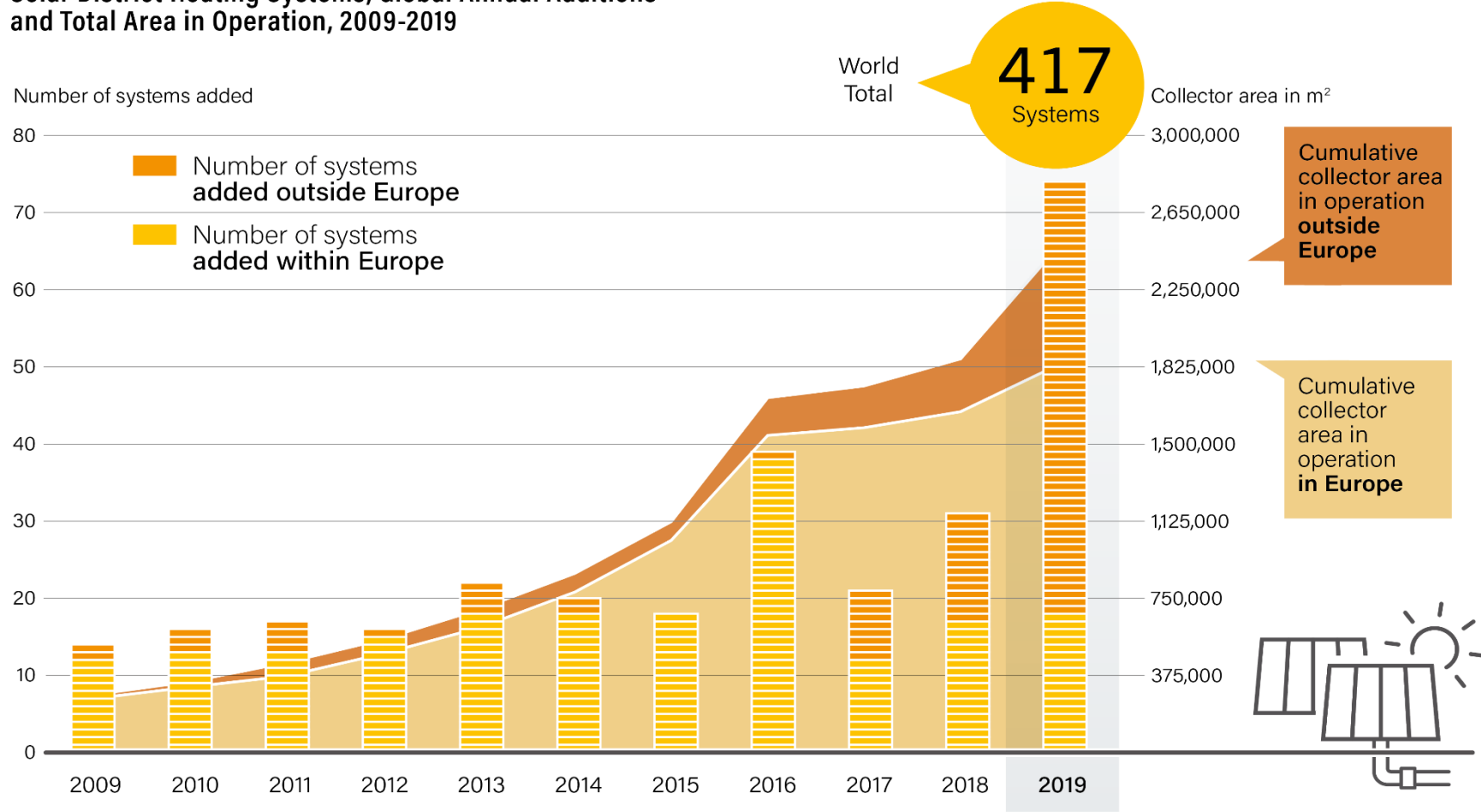
Source: Manufacturers' information market survey by solrico in February/March 2020



Large-scale solar thermal systems on the rise



Solar District Heating Systems, Global Annual Additions and Total Area in Operation, 2009-2019



Note: Includes large-scale solar thermal installations for residential, commercial and public buildings. Data are for solar water collectors and concentrating collectors.

Source: IEA SHC.



Strong growth in central hot water systems



Linuo Paradigma from China reported 27 projects with more than 5,000 m² collector area (blocks of flats, offices, hospitals and schools)



Turkey: 50 systems in prisons in three years

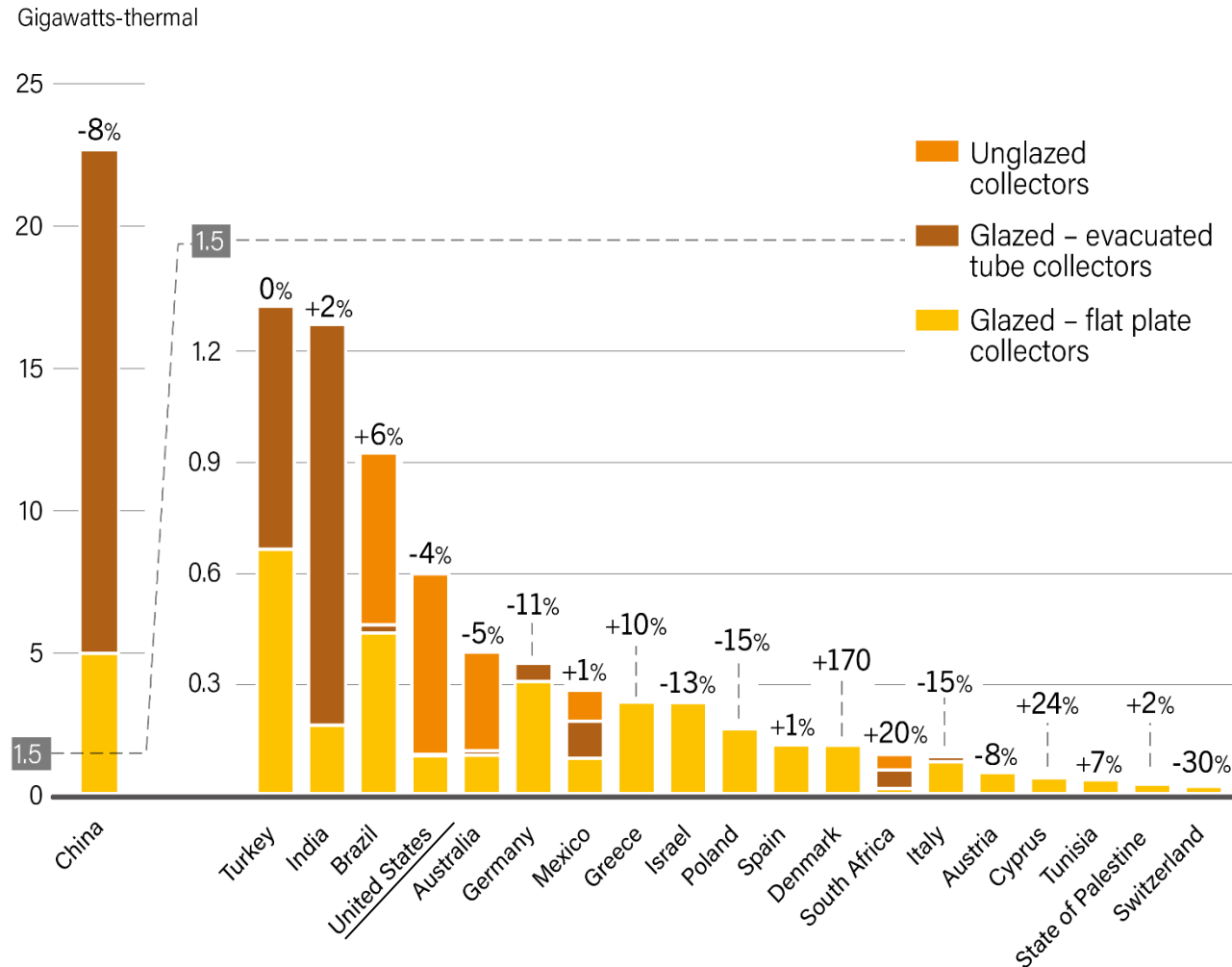
Photos: Linuo Paradigma and Eraslanlar



Increasing market pressure in Europe



Solar Water Heating Collector Additions, Top 20 Countries for Capacity Added, 2019



Outside China, new additions were stable with growth in some markets balancing decline in others

Minus 1.8 % for Europe in total after +8 % in 2018 (first estimates of Solar Heat Europe)

Major European markets declined again significantly

Absolute figures of additions in the 20 key markets available in table R18 on page 239 in GSR

Note: Additions represent gross capacity added. New additions in China were based on produced collector area, and included export volumes in the national statistics for 2019 and earlier years.



Stop of production and insolvencies of small and medium-size manufacturers in Europe

- ▶ Two long-time European solar brands, KBB Kollektorbau (Germany) und Kingspan Renewables (Ireland) closed collector factories.
- ▶ The insolvencies of manufacturers Aventa Solar (Norway), Fresnex (Austria) and Solarus (Netherlands) were caused by their inability to secure the necessary funding to increase business volumes.



- ▶ Decision of closing Arcon Sunmarks (Denmark) project development and collector production in April 2020

“The financial development with heavy losses is intolerable,” Thomas Karst, CEO of Arcon-Sunmark.

- ▶ Insolvency of Glasspoint (USA) in May 2020 due to a halt in additional funding by the investors

Project	Customer	Location	Size (MW)	Status
Miraah	Petroleum Development Oman	South Oman	1,000	360 MW online since March 2020
Belridge	Aera Energy	California	850	Solar Heat Delivery Contract signed



- ▶ The first two SHIP systems were realised as ESCO models: Condat Paper Mill in France and a Chemical factory in Belgium
- ▶ ESCO SHIP Malteries Franco-Suisses in France (10 MW) under construction. Kyotherm announces 11 further solar heat supply contracts with clients (mostly SHIP) outside France together with solar project developers
- ▶ First heat supply contracts under negotiations by Sunti (France) and Millennium Energy Industries (Jordan)
- ▶ Linuo Paradigma`s newly founded subsidiary for ESCO project development (China) realised two first renewable heat projects with heat pumps
- ▶ SWA Solar Wärme (Austria) completed one ESCO project in 2019



World map of Turnkey SHIP Suppliers

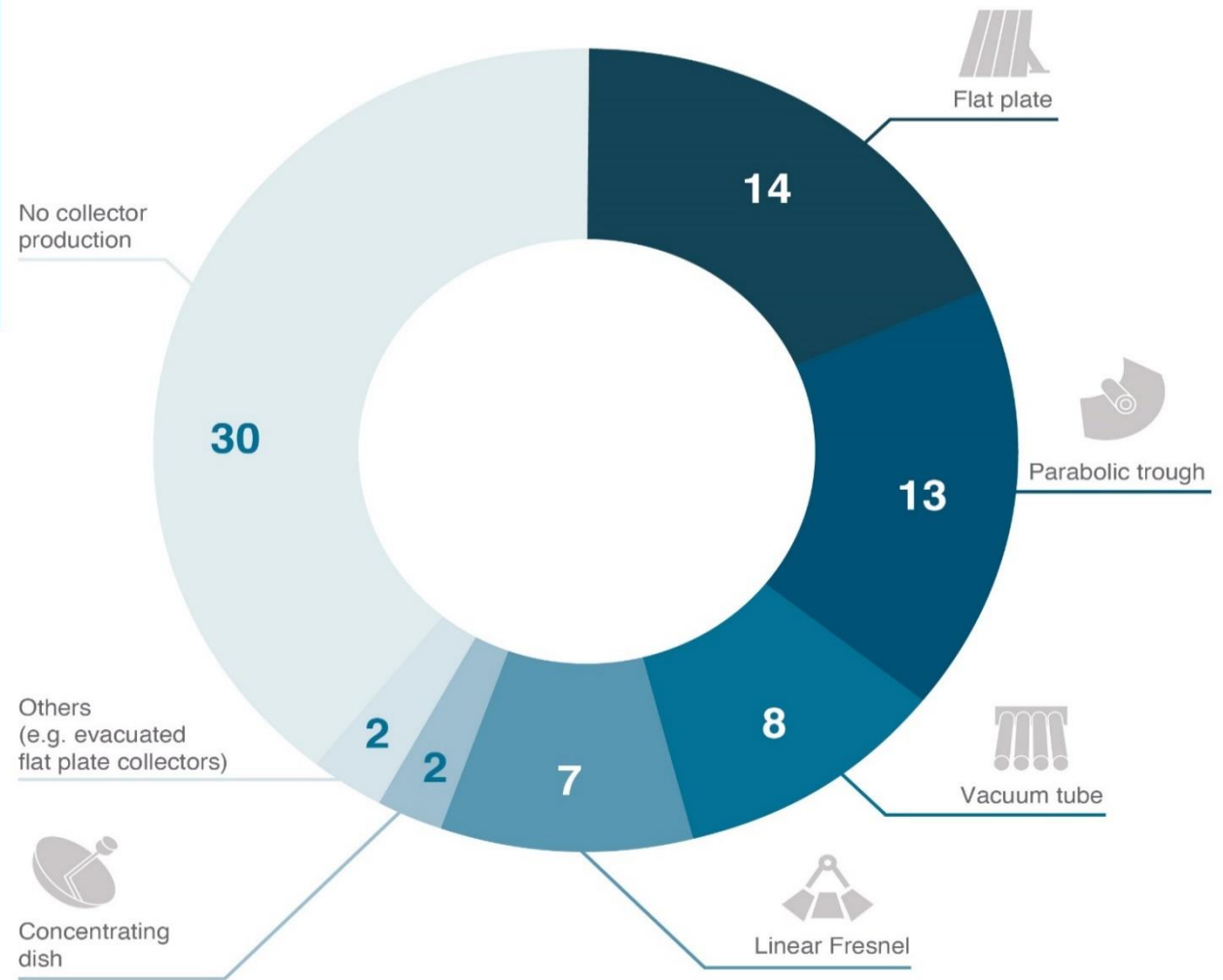
Solar supplier without references	11
Solar supplier with collector production and without references	4
Solar supplier with references	19
Solar supplier with collector production and references	42





76 turnkey SHIP suppliers are currently depicted on the world map

61 % of the listed companies produce collectors in-house or on-site





2017

**107 SHIP systems
with 153 MW_{th}**

- 120 MW Miraah in Oman
- No agricultural applications
- 22 systems in India

2018

**99 SHIP systems with
39 MW_{th}**

- 0 MW Miraah
- 51 SHIP plants in Mexico

2019

**86 SHIP systems with
251 MW_{th}**

- 180 MW Miraah
- 26 plants in Mexico and 7 in India
- 10 agricultural systems



Turnkey suppliers with more than 10 reference projects at the end of 2019

89 Módulo Solar Mexico	22 Millennium Energy Industries Jordan
72 Sunrain China	21 Inter Solar Systems India
66 Inventive Power ←	20 Soliterm ← Germany
47 Linuo Paradigma China	16 Sunda China
32 Megawatt Solutions ← India	15 Himin China
29 Ritter XL Solar Germany	15 Solid Energy Systems Austria
28 SEA Sistemas de Ecotecnias Ambientales, Mexico	14 Casolar Mexico
24 Vicot Solar Technology ← China	Concentrating collectors ←

Industry hubs: China, Mexico, India and Germany

Established suppliers of concentrating collectors

Source: Solar Payback surveys



Small concentrating collector volumes (besides Glasspoint)



	Application	Newly installed collector area 2018 [m ² apertur]	Newly installed collector area 2019 [m ² apertur]
Parabolic trough	SHIP applications	11,367	7,539
	NON-SHIP applications	21,220	4,051
	Glasspoint (Miraah)	0	257,143
	Total	32,587	268,733
Dish	SHIP applications	1,075	1,962
	Commercial cooking	1,576	160
	Total	2,651	2,122
Linear Fresnel	SHIP applications	360	636
	Total	360	636
	Total across all three technologies	35,598	271,491



Photo Search

by Supplier	<input type="text"/>	by Year	-Please Select-	by Application	-Please Select-
by Country	<input type="text"/>	by Industry	-Please Select-	by Collector Type	-Please Select-



Thailand, Retanning Process, 2012



Mexico, Painting workshop, 2017



Mexico, Painting workshop, 2017



Mexico, Painting workshop, 2017



Mexico, Painting workshop, 2017



Austria, Steam for test lab, 2017

More than 100 photos with free copyright about SHIP plants around the world

https://www.solar-payback.com/gallery/gallone_en.php



Thanks for your attention!

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