PRESS RELEASE

Solar Thermal Market Records Year of Growth

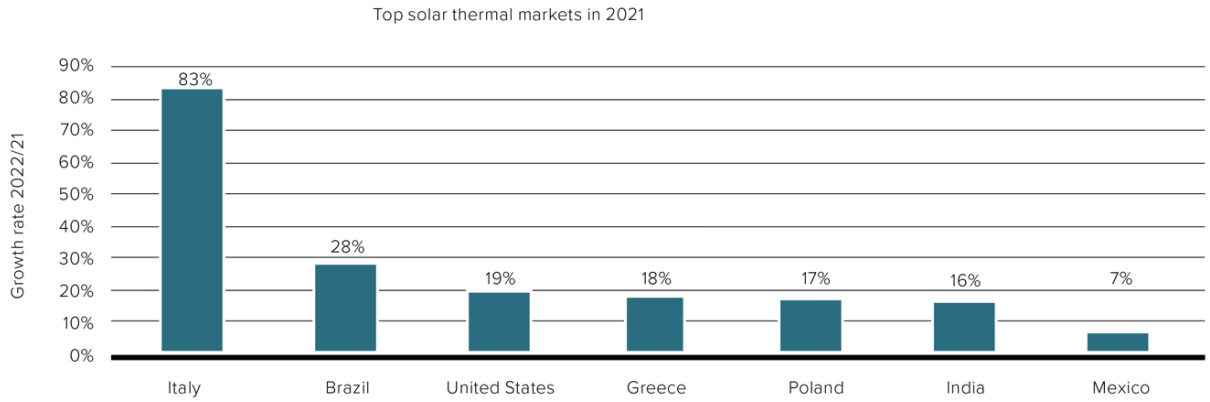
20 June 2022. The solar thermal market saw 3% growth in 2021 after seven years of decline. Noteworthy development was reported from some of the largest solar heat markets. Solar thermal capacity reached 522 GW_{th}, providing green heat to 109 million residential and commercial customers globally. With a turnover of USD 18.7 billion, the sector gives jobs to around 380,000 people worldwide.

These are some key figures from this year's report, *Solar Heat Worldwide 2022*, published by the International Energy Agency's Solar Heating and Cooling Technology Collaboration Programme (IEA SHC). The 18th edition has a completely new design. Data from now 70 country contributors creates the most comprehensive evaluation of solar heating and cooling markets worldwide. The full report and key findings are available for free on the IEA SHC website (www.iea-shc.org/solar-heat-worldwide).

"With 21 GW of new capacity installed in 2021, the solar thermal sector has again proven that it is a significant player in the move towards climate neutrality. Our flagship publication *Solar Heat Worldwide* shows the wide range of customers that can profit from zero-carbon heat produced onsite," states Tomas Olejniczak, Chair of the IEA SHC Programme.

Support policies and rising fossil fuel prices drive demand

Positive trends were observed in several large solar heat markets. Italy, for example, experienced a phenomenal 83% growth last year, driven by increased construction activities combined with a new tax reduction scheme, the "Superbonus" for energy-efficient buildings. Likewise, demand in Brazil (+29%) and the United States (+19%) rose as people spent more time at home during the pandemic and invested in solar pool heating solutions. Sales for commercial clients in Brazil also increased due to growth in the construction sector and rising electricity prices caused by power shortages.



Solar heat markets with the highest growth rates in 2021. *Source: Solar Heat Worldwide 2022*

Leading markets for solar thermal solutions

"Solar district heating is a well-established application with almost 300 systems worldwide. But demand depends heavily on policy support, as the example of Denmark shows," says Werner Weiss, one of the two authors of the report. Denmark was the leading market for new solar district heating additions for almost a decade. Then the market collapsed because of a shift in policy and funding in 2020. China and France overtook Denmark and reached top positions in the ranking of new solar district heating capacity in 2021.

Below are the **top three countries** for different market segments.

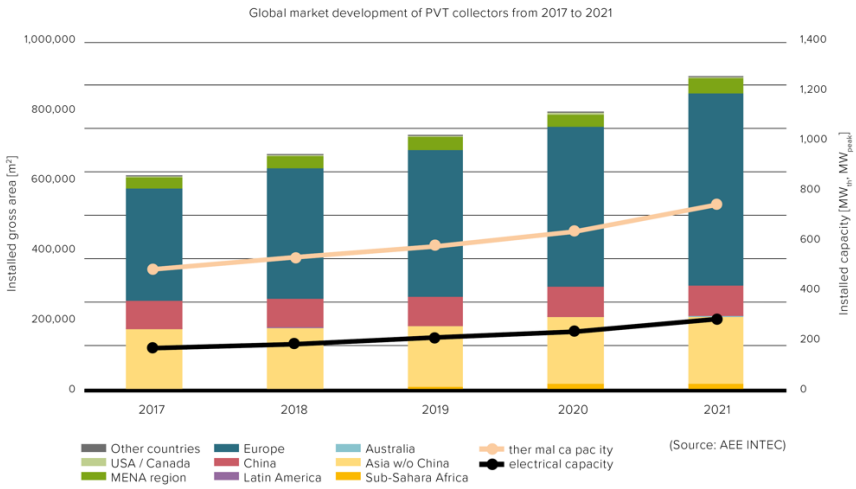
Three top markets		1	2	3
Solar district heating New additions **2021** [MW_{th}]		China	France	Denmark
Solar industrial heat New additions **2021** [MW_{th}]		China	France	Mexico
PVT systems Total in operation **2021** [MW_{th} / MW_{peak}]		France	South Korea	China
Solar air heating systems Total in operation at the end of **2020** [MW_{th}]		Canada	Australia	Japan
Swimming pool heating Total in operation **2020** [MW_{th}]		USA	Brazil	Australia

Photos: GRENoneTEC, TVP Solar; AST Eis- und Solartechnik GmbH, DualSun, SolarWall Conserval Engineering Inc.

PV-Thermal market on the rise

A highlight of this year's report is the comprehensive chapter on PV-Thermal systems (PVT) – generating both solar heat and solar electricity. Thirty-eight manufacturers around the world provided detailed sales data giving a country-specific view on PVT deployment. France is the leading market with air-based PVT collectors used for heating. However, unglazed PVT collectors gained popularity as a heat source for brine heat pumps in residential and commercial buildings in the other leading countries, South Korea and China.

Today, 1.4 million m^2 of PVT collector area is in operation. In 2021, the global PVT capacity in operation grew 13% after steady 9% growth between 2017 and 2020.



Cumulated PVT capacity for the years 2007 to 2021. *Source: Solar Heat Worldwide*

Multi-MW solar industrial heat plants

Industrial companies around the world increasingly ask for a CO_2-free heat supply. The largest solar industrial heat (SHIP) plants are listed in the report with a 300 MW plant in an oil field in Oman, followed by a 37 MW system in Australia for a tomato producer and a 28 MW system for a copper mine in Chile.

The number of solar industrial heat (SHIP) plants increased to at least 975 documented plants with an overall installed collector area of 1.23 million m². Mexico leads in the number of SHIP systems installed due to the cost-competitiveness with fossil fuels, particularly liquefied petroleum gas.

Parabolic trough collectors at Comercial Forrajera de Lagos (COMFOSA) in Mexico. Photo: COMFOSA

Solar thermal technologies are suitable for supplying heat to many processes, such as drying, boiling, sterilizing, or bleaching with temperature needs up to 400 °C. This is important, considering that industry is among the most challenging economic sectors to decarbonize, given the long investment cycles for new energy infrastructure.

Solar Heat Worldwide

First published in 2005, this year's *Solar Heat Worldwide* provides market data on installed capacities and share of applications from 70 countries. The 85-page report includes a special focus on China, the world's largest solar thermal market. *Solar Heat Worldwide* has a solid reputation as a reference source for solar heating and cooling data among international organizations, including REN21 and IRENA. The report was again the main contributor to the solar heating and cooling chapters of REN21's Renewable 2022 Global Status Report (GSR), one of the key policy adviser reports on renewables. *Solar Heat Worldwide* was again written by Werner Weiss and Monika Spörk-Dür from the Austrian research institute AEE INTEC and supported by the Federal Ministry for Climate Action of the Republic of Austria and solar heat experts worldwide.

About IEA SHC

The International Energy Agency, Solar Heating and Cooling Technology Collaboration Programme (IEA SHC) is an international research and information program on solar heating and cooling technologies. Over 200 experts from 19 countries, the European Commission, and eight international organizations conduct collaborative research on a wide range of topics, https://www.iea-shc.org/tasks.

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