

PRESS RELEASE

Greening the Heat Supply

22 June 2021. *Solar Heat Worldwide 2021*, with data from 68 countries, is the most comprehensive evaluation of solar heating and cooling markets. The 2021 edition plus key messages are available for free on the IEA SHC [website](#).

"Solar heating and cooling systems with **501 GW_{th}** were in operation at the end of 2020 and **saved 43.8 million tons of oil** and **141.3 million tons of CO₂**. The standout application is once again solar district heating plants and their important contribution in decarbonizing the heating sector. With Germany, Denmark and China leading the way and generating interest in other parts of the world," states Tomas Olejniczak, Chair of the IEA SHC Programme.



Market Leaders

Solar thermal heating and cooling systems serve millions of residential, commercial, and industrial clients worldwide with a wide variety of technologies. Below are the top three countries for different market segments.

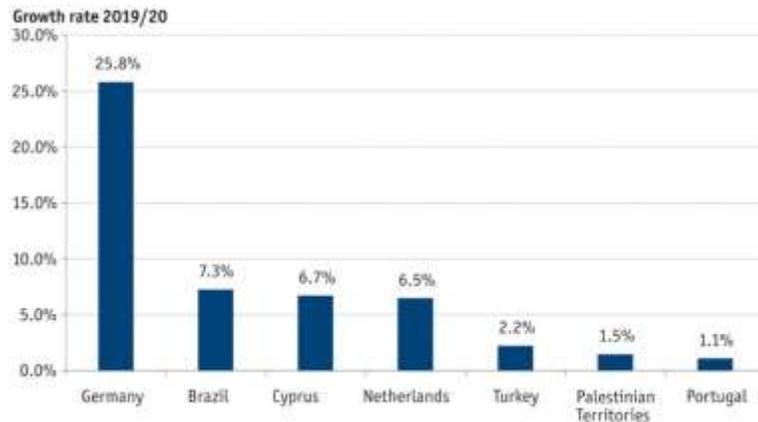
| Top Three Markets | | 1 | 2 | 3 |
|--|---|---------|-------------|-----------|
| Solar district heating new additions in 2020 |  | Germany | Denmark | China |
| Solar industrial heat new additions in 2020 |  | China | Mexico | Germany |
| Swimming pool heating new additions in 2019 |  | USA | Brazil | Australia |
| Solar air heating systems total in operation at end of 2019 |  | Canada | Australia | Japan |
| Hybrid systems for heat and electricity (PVT) total in operation at the end of 2020 |  | France | South Korea | China |

Photos: SOLID Solar Energy Systems, Solareast Holding Company, SolarWall, PA-TD Process, Sunbather

Growth Despite COVID-19

Despite the pandemic taking a heavy toll on most national economies in 2020, some large solar thermal markets grew due to increased policy support, like in Germany and the Netherlands. In Turkey and Brazil, demand for solar water heaters increased as homeowners spent more time at home and made improvements around the house.

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Positive trend: Increasing sales in major solar thermal markets in 2020. Source: *Solar Heat Worldwide 2021*

Number of Multi-MW Solar District Heating Systems Keeps Growing

The leading markets for solar district heating are Denmark (124 systems), Germany (43), Sweden (22), Austria (19), China (18), and Poland (8). This cost-effective way of greening the heat supply of neighborhoods, towns, and even cities sparks new interest in markets like France, Switzerland, Russia, and South Africa.

Targeted Energy Policies Drive Solar Heating Growth

Germany's solar thermal market confirms the impact that targeted energy policies can have. About 10 years ago, Germany was by far Europe's largest solar thermal market with 1.5 GWth of new capacity, but by 2019 it was hovering around 0.36 GWth of new capacity. But times have changed, and in 2020 Germany's solar thermal market increased by approximately 26% compared to 2019 to around 650,000m², corresponding to nearly 0.5 GWth of newly installed capacity. The dramatic increase in demand is largely due to the new federal subsidy for efficient buildings.

Market Trends to Follow

The combination of solar **Photovoltaic (PV) and Thermal (T)** in one collector, referred to as PVT, leads the trend towards hybrid solar heat solutions, experiencing a steady growth of 9% on average from 2018 to 2020 and 8% in the dominant European market. Tibet and Ghana are some of the new markets emerging outside of Europe.

PV2heat (using PV to heat water) is a new take on hot water heating that is emerging in South Africa. These systems consist of PV modules directly connected to an electrical element that heats the water with DC power without the need for inverters. By the end of 2020, there were 11,700 PV2heat systems installed in South Africa.

Solar heat for industrial processes (SHIP) continues its steady growth, with at least 74 plants added in 2020. The SHIP plants are used for many applications, with the largest at an oil production plant in Oman (300MWth), followed by a greenhouse application in Australia (36.6 MWth) and copper mine in Chile (27.5 MWth)

Solar cooling is trending toward hybrid solutions to improve efficiency and an investment advantage up to 40% to conventional solar cooling systems.

Solar Heat Worldwide

First published in 2005, Solar Heat Worldwide 2021 has a solid reputation as a reference for solar heating and cooling data among international organizations, including REN21 and International Renewable Energy Agency (IRENA).

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