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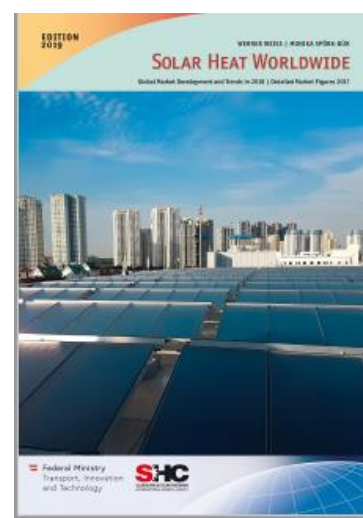
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Solar Heat Worldwide – Global market data and trends

Solar thermal – a major driver for climate protection

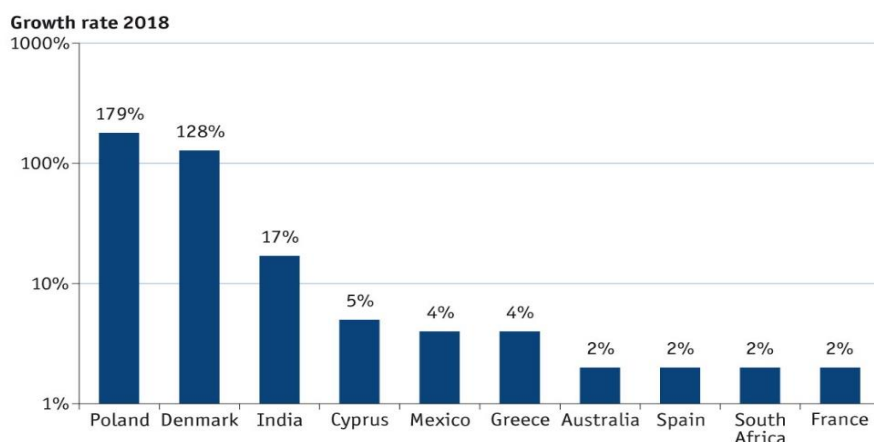
June 2019. The solar heating and cooling markets show a reversing trend. The majority of the largest markets outside of China saw demand increase for the first time since 2015. This trend change is due to several factors – improved cost-competitiveness of solar thermal systems, rising interest among commercial and industrial clients, and clean air policies. These are some of the key findings of the report *Solar Heat Worldwide 2019* published by the International Energy Agency’s Solar Heating and Cooling Programme (IEA SHC) at the beginning of June.



“The report highlights the significant impact that solar heating and cooling technologies have on climate protection,” said Daniel Mugnier, Chairman of the IEA SHC Programme. SHC systems in operation globally in 2018 totaled 480 GW_{th} (686 million square meters) and saved 43 million tons of oil equivalent and avoided 138 million tons of CO₂ emissions. “Solar heating and cooling is a global business with 672,000 people working in this sector and a turnover of around USD 16.9 billion in 2017,” added Mugnier.

Strong growth rates in 2018

While China’s market continued to contract in 2018, ten of the top 20 countries reported growing sales (see following chart). Poland broke all records with its 179% increase in solar thermal installations due to clean air support policies in many cities. Denmark is still the leading country for solar district heating, reporting a significant increase in installed capacity in 2018 (128%). India ranked third with a growth rate of 17%. If these positive trends continue, global market growth can be expected again in 2019.



Positive trend: The majority of the large solar heating and cooling markets outside China reported growing sales in 2018. Source: *Solar Heat Worldwide*

Solar district heating

Megawatt installations are on the rise. At least 37 new large-scale (>350 kW_{th}) systems were commissioned in 2018 to provide heat for district networks and large buildings, a significant increase compared to 17 systems a year earlier. In total, at least 339 large solar thermal systems were in operation at the end of 2018 with a total capacity equal to 1.35 GW_{th} (1.93 million m² including concentrating systems).

More than one million PV-Thermal units

The combined generation of solar heat and solar electricity from the same collector – called PV-Thermal – is becoming increasingly popular. For the first time, Solar Heat Worldwide includes this technology using data from 26 manufacturers in 11 countries as a starting point. Their sales added up to more than 1 million m² of PVT collector area. France is the market leader in installed PVT area followed by South Korea, China and Germany. Unglazed water collectors (57%) and air collectors (41%) are the dominating hybrid collector technologies on the market, according to the survey.



90 PVT collectors provide heat and electricity to a hotel in Spain.

Photo: Endef

Key Global Figures for Solar Heating and Cooling

Total capacity in operation end of 2018 ¹	480 GW _{th}
Growth in total capacity in operation 2017/2018	+2%
Climate protection contribution in 2018	396 terawatt hours of solar energy 43 million tons of oil 138 million tons of CO ₂
Top five countries: new capacity 2017 ²	China, Turkey, India, Brazil, and United States
Top five countries: total capacity in operation 2017 ²	China, United States, Turkey, Germany, and Brazil
Top five countries: total capacity per capita 2017 ²	Barbados, Cyprus, Austria, Israel, and Greece

1 Unglazed, glazed flat-plate and evacuated tube collectors with water as the energy carrier as well as glazed and unglazed air collectors are considered.

2 Glazed and unglazed water collectors are considered.

Solar Heat Worldwide

First published in 2005, *Solar Heat Worldwide 2019* provides market data on installed capacities, costs and share of applications from 68 countries. The 84-page report includes chapters on commercial applications and Levelized Cost of Heat. *Solar Heat Worldwide* has a solid reputation as a reference source for solar heating and cooling data among international organizations including REN21 and International Renewable Energy Agency (IRENA). The study was again the main contributor for the solar heating and cooling chapters of REN21's Renewable 2019 Global Status Report (GSR), which is one of the key policy adviser reports on renewables.

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 400 experts from 20 countries, the European Commission and four international organizations conduct collaborative research on a wide range of topics from solar envelope solutions to future storage tank concepts and the integration of large-scale solar fields in district heating and cooling networks. SHC is one of the oldest Technology Collaboration Programmes of the IEA founded in 1977 and one of ten in the field of renewable energies.

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