

Worldwide capacity of solar thermal energy greatly underestimated

10 November 2004. The International Energy Agency's Solar Heating and Cooling Programme and major solar thermal trade associations publish new statistics on the use of solar thermal energy. The new data – expressed for the first time in GW_{th} , rather than in square meters of installed collector area – shows the global installed capacity to be 70 GW_{th} (70.000 MW_{th}).

“The worldwide contribution of solar thermal installations to meeting the thermal energy demand for applications such as hot water or space heating has been greatly underestimated in the past”, says Michael Rantil, Chairman of the International Energy Agency's Solar Heating and Cooling Programme (IEA SHC), “With an installed capacity of 70 GW_{th} solar thermal is one of the leading sources of renewable energy world wide. And its potential is much, much higher.”

The underestimation of the capacity of solar thermal was due largely to the fact that solar thermal installations have traditionally been counted in square meters of collector area, a unit not comparable with other energy sources. Making the installed capacity of solar thermal collectors comparable with that of other energy sources was a top priority at a joint meeting of the IEA-SHC Programme and major solar thermal trade associations, which was held in September 2004 in Austria.

At this meeting, solar thermal experts from 7 countries agreed on a methodology to convert installed collector area into solar thermal capacity. The represented associations from Austria, Canada, Germany, the Netherlands, Sweden and the USA as well as the European Solar Thermal Industry Federation (ESTIF) and the IEA SHC Programme agreed to use a factor of $0.7 \text{ kW}_{\text{th}}/\text{m}^2$ to derive the nominal capacity from the area of installed collectors. The groups called on all organisations publishing data on solar thermal markets and installations to use this conversion factor as well.

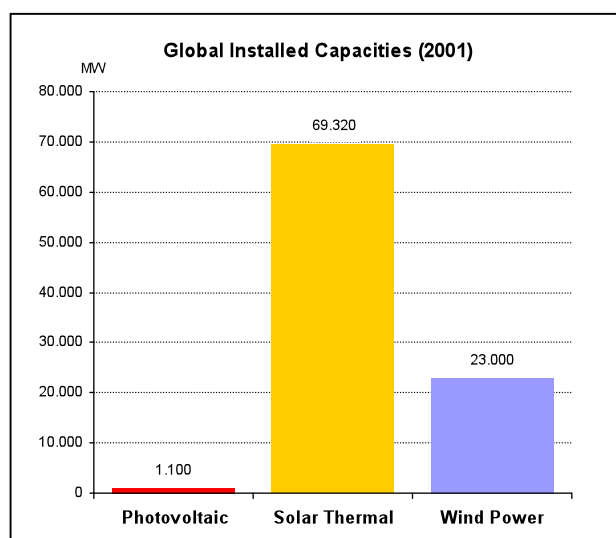
“Now the solar thermal capacity should show up in all statistics alongside the capacities of other renewable energies”, says ESTIF President Ole Pilgaard. “And seeing that the world wide capacity of solar thermal installations exceeds even that of wind power, people will realise that our technology can contribute tremendously to reducing greenhouse gas emissions and to making the global energy supply more sustainable.”

Global Installed Capacity of Solar Thermal Systems in 2001

Total Installed Capacity in Operation in the Year 2001 (MW _{th})				
Country	Water Collectors			TOTAL
	unglazed	glazed	evacuated tube	
Australia	1.400	839	-	2.239
Austria	407	1.217	20	1.644
Belgium	16	17	1	34
Canada	361	51	0	413
China	-	7.840	14.560	22.400
Denmark	15	189	0	205
Finland	-	8	0	8
France	69	356	-	425
Germany	466	2.204	379	3.049
Greece	-	2.093	-	2.093
India	-	420	-	420
Ireland	-	2	0	2
Israel	-	2.744	-	2.744
Italy	16	238	17	271
Japan	-	8.229	218	8.447
Mexico	224	77	-	301
The Netherlands	108	145	2	254
New Zealand	1	47	0	48
Norway	0	5	0	6
Portugal	1	171	0	172
Spain	4	316	4	323
Sweden	23	138	2	163
Switzerland	141	174	16	332
Turkey	-	5.691	-	5.691
United Kingdom	62	110	6	179
United States	16.061	1.012	386	17.459
TOTAL	19.375	34.332	15.613	69.320

Source: Data converted from *Solar Heating Worldwide: Markets and Contributions to the Energy Supply 2001*, IEA-SHC 2004

Global Installed Capacities of different Renewable Energies in 2001



Source: Solar Thermal from IEA-SHC, PV and Wind Power from UNDP's *World Energy Assessment: Overview 2004 Update*.

Further information:

The calculation methodology that led to the $0.7 \text{ kW}_{\text{th}}/\text{m}^2$ factor is largely based on parameters referred to in the European standards for the testing of solar thermal collectors (EN 12975). A more in-depth discussion of the conversion factor can be found at IEA-SHC website (http://www.iea-shc.org/welcome/Technical_note_solar_thermal_capacity.doc).

The following organisations participated in the Gleisdorf meeting where the conversion factor of $0.7 \text{ kW}_{\text{th}}/\text{m}^2$ was agreed:

Austria Solar – www.austriasolar.at

Bundesverband Solarindustrie, Germany (BSi) – www.bsi-solar.de

Canadian Solar Industries Association (CanSIA) – www.cansia.ca

European Solar Thermal Industry Federation (ESTIF) – www.estif.org

Holland Solar – www.hollandsolar.nl

International Energy Agency - Solar Heating and Cooling Programme (IEA-SHC) – www.iea-shc.org

Solar Energy Association of Sweden (SEAS) – www.solenergiforeningen.se

Solar Energy Industries Association, USA (SEIA) – www.seia.org

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