



European
Solar
Thermal
Industry
Federation



Solar Thermal Markets in Europe Trends and Market Statistics 2009

June 2010

European Solar Thermal Industry Federation (ESTIF)
Renewable Energy House • Rue d'Arlon 63-67
B-1040 Brussels • Belgium
Tel: +32 2 546 19 38 • Fax: +32 2 546 19 39
Email: info@estif.org • Web: www.estif.org

www.estif.org

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Disclaimer:
Please note that all figures presented in this brochure reflects ESTIF knowledge at the time of publication.
For some countries, the data provided are only ESTIF estimations.

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Editorial 2009: A Challenging Year for Solar Thermal



During the past twenty years, solar thermal markets have shown an extremely positive evolution. Often however, periods of strong growth are followed by sharp downturns, a trend which was also visible in the past two years, where an outstanding growth of 60% in 2008 was followed by a contraction of 10% in 2009.

With more than 4 million square meters of solar collectors sold in Europe in 2009 for the second year in a row, the solar thermal sector however still outperformed a market environment distinguished by struggling building industries in many European countries and the global economic crisis.

Although there is an obvious correlation between solar thermal markets, fuel prices and economic activity, the market stability in our sector remains highly affected by the diversified and inconsistent landscape that support policies for solar thermal technologies show across Europe.

The business in 2010 will hence be influenced by the effect that the financial and economic crisis have on public support and incentive policies. In this context, we should bear in mind that renewables are today an integral part of the energy policy agenda in most European countries which is primarily owed to the RES directive and its coming implementation into national legislations.

ESTIF will continue to influence the policy-making to improve the mid and long term framework conditions for the solar thermal sector.

The 2010 edition shows on the next pages detailed charts and analyses on single markets and trends in the European solar thermal sector. Note that we included more country background information and details on solar cooling and large solar thermal applications.

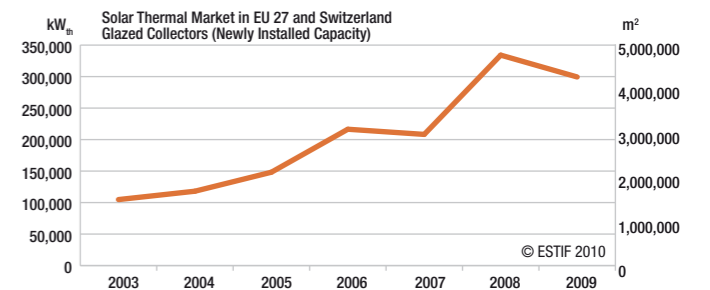
Good reading and sunny regards,

Olivier Drücke, President of ESTIF

Solar Thermal Markets in EU 27 and Switzerland (Glazed Collectors)

Following an outstanding growth in 2008, the European solar thermal market decreased by 10% in 2009. Our initial forecast reflected the alarming news on the economic front as well as the concomitant recession in the building industry, and had prepared us for the worst. Finally, the market performed better than expected and for the second year in a row, over 4 million m² of solar panels were sold in Europe.

The outlook for 2010 remains uncertain while the financial and economic crisis continues to have a negative impact on both public spending and incentive policies. It is anticipated that the main markets may be adversely affected by lack of government incentive programmes and stagnation in the construction sector. However, this is likely to be offset by the effect on national policies of the RES directive (2009/28/EC) implementation and also because renewable heat incentives are already firmly on the agenda in several European countries. Interestingly enough, and surely another positive sign, large solar installations seem to be unaffected by the market downturn and are gradually consolidating their market share.



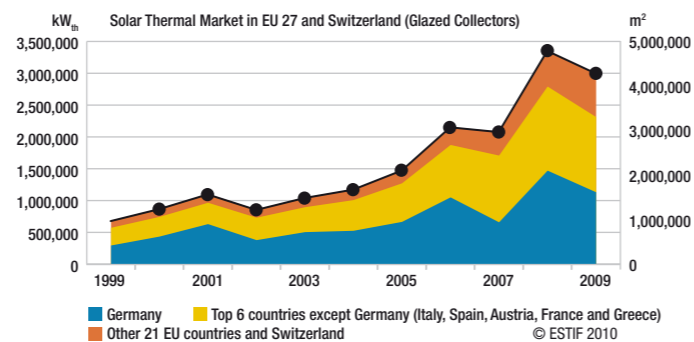
The Dynamic Evolution of the European Solar Thermal Market

In terms of solar thermal markets, Europe can be divided into three zones: markets above 400,000 m², between 200,000 and 400,000 m², and below 200,000 m² of newly installed capacity (glazed collectors). Interestingly, the solar thermal markets grouped in these categories present similar trends.

The overall European market reliance on Germany (38% of the EU 27+CH) is decreasing with Austria, France, Greece, Italy and Spain together accounting for 39%; the other countries now representing 23% of the market and becoming increasingly relevant, showing a clear trend for fast growth. The effects of the current economic and financial downturn have been felt acutely in recently booming countries such as France, Spain and Greece.

The smaller markets (below 200,000 m²) have in certain cases posted up to double digit growths (Denmark, the Netherlands, Switzerland and the United Kingdom) or even a two-fold increase, as has been the case in Portugal or Hungary thanks to a new financial incentive scheme.

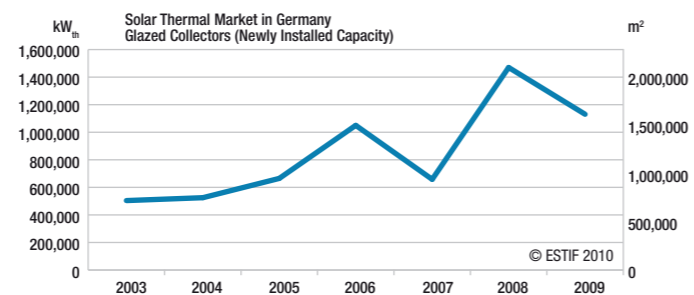
Finally new markets are emerging with Poland leading the way, despite the absence of incentives for individual consumers. This trend should continue throughout Europe with the implementation of the National Renewable Energy Action Plans (NREAPs) aimed at achieving the European 20/20/20 goals.



Germany, the European Solar Thermal Market Leader

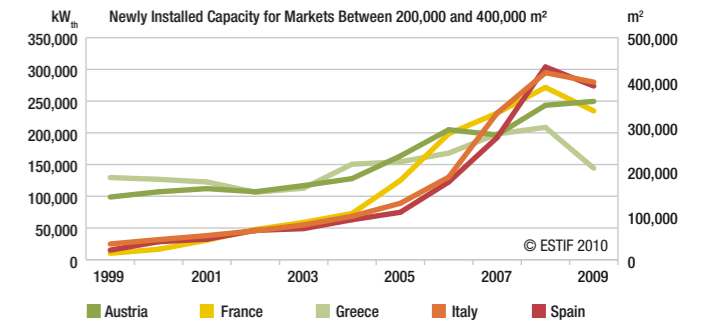
The impact of the crisis was felt more sharply in Germany as the largest European market that continues to be volatile with wide fluctuations over the past three years – major decrease in 2007 followed by an outstanding growth in 2008. In 2009 the market decreased by 23%, remaining at 1,13 GW_{th} (1,61 million m² of collector area). Overall however, there has been a clear growth trend over the past five years, with the market more than doubling since 2004 (0,75 to 1,61 million m²). In 2009, the market development has been affected by both lower fossil fuel prices and declining end-user investments.

Even though the legislative framework conditions are favourable to solar thermal with a minimum share of 20% renewable energy sources required for every new building (“Wärmegesetz”), the immediate scenario is not yet clear since the subsidies available within the main incentive scheme (“Marktanzreizprogramm”) may be withdrawn for the remainder of 2010, affecting the market severely.



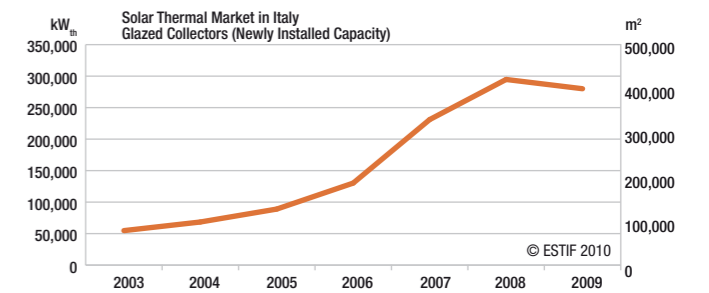
Solar Thermal Markets between 200,000 and 400,000 m² Newly Installed Capacity in 2009

The Italian, Spanish, Austrian, French and Greek markets have experienced a steady growth over the past few years which cumulatively represents a five-fold increase and, for the larger South European markets such as Italy, Spain and France, the annual growth recorded has been multiplied by a factor of between 11 and 23. These markets are still above the 2007 level (42% in Spain). However, compared with 2007, the Greek market faced a substantial reduction in national sales, dipping even below the newly installed capacity in 2004.



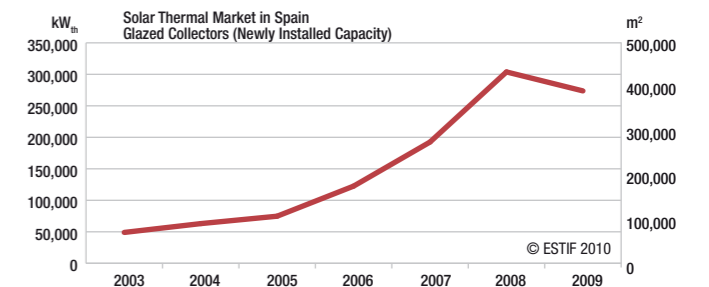
Italy

Italy is now the second largest market in Europe, and much more stable than other emerging European markets. Compared with 2008, the Italian market has decreased by 5% in 2009, with 280 MW_{th} of newly installed capacity (400,000 m² of solar thermal collectors). Due to its geographical location and to its high-energy dependency (86,8% in Italy compared with a European average of 53,8%), this market still represents a very strong potential for solar thermal. The major growth in recent years can be credited to a 55% tax rebate covering various energy efficiency measures in existing buildings, including solar thermal installations. These provisions will remain in place until the end of 2010 and the experts predict a steady performance for this year. In the event that this measure is not maintained in the next years, this emerging and important market could face though an important slow down.



Spain

After several years of strong and steady growth, at an annual average of 50%, the Spanish market has undergone a downturn of 10% in the newly installed capacity, compared with the previous year. In 2009, 274 MW_{th} were newly installed, corresponding to 391,000 m². The positive effect of the Spanish building code introduction has been negated by the collapse of the Spanish building sector. In addition, the reduced take-up rate of public subsidies available at national and regional levels led to this decline. Although the Spanish building code (CTE - Código Técnico de la Edificación) also covers other renewable energies and public support programmes did not contribute to market growth, the eventual introduction of a “feed-in” tariff for energy applicable to larger systems may have a positive impact on the market in the forthcoming years.

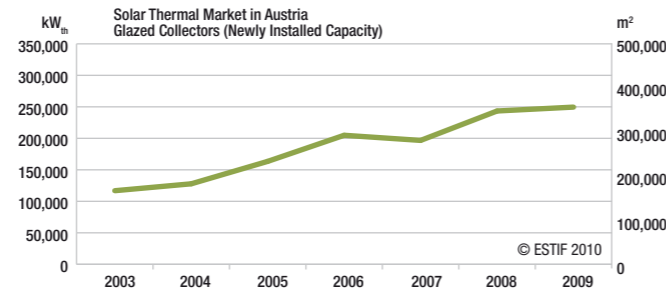




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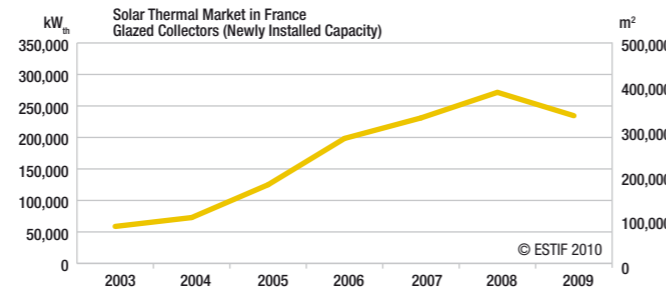
Austria

Austria can be considered as the most mature market in Europe. Known for its steady growth, this market has not faltered during the difficult year of 2009, showing a small growth of 3%; hence, the newly installed capacity increased to 250 MW_{th} (approximately 356,500 m²). Austria consolidates thus its lead in terms of newly installed area per capita, with 43 m² per 1,000 inhabitants, while the total area in operation is now of 433 m² per 1,000 inhabitants. A large spectrum of solar thermal applications are available in Austria, ranging from domestic hot water systems, combisystems, district heating and systems in hotels and the industrial sector.



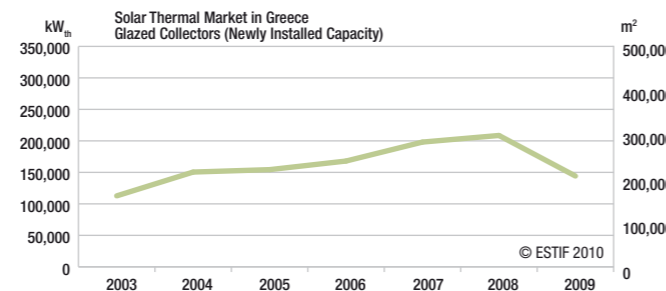
France

After 10 years' uninterrupted growth, in 2009, the newly installed capacity in Metropolitan France decreased by 15% compared with 2008 representing 185 MW_{th}, i.e. 265,000 m² of glazed collectors. Although large installations increased by 19%, due to the implementation of the "fonds chaleur" and the support from regional authorities, the residential sector suffered from the economic crisis and a "cannibalisation effect" from other technologies, in particular photovoltaics. The domestic hot water systems installations decreased by 14% and combi-systems by 56%, compared with the previous year. This is particularly significant in view of the ambitious goals set by the national government of 1 million m² of collector area installed per annum by 2012.



Greece

During 2009, the Greek market has contracted dramatically – by almost one third, from approximately 300,000 m² to 206,000 m² and reverted to the 2004 level. Following several years of strong growth, the market was expected to undergo some form of adjustment; however, this was much more drastic than anticipated, intensified by the financial and economic crisis. The support schemes available, covering energy efficiency measures and replacement of older heating equipments, proved to be poorly funded and rather ineffective for the solar thermal sector. In view of Greece instability, the market is expected to further decline in 2010, albeit not to the extent of 2009, remaining at a much more stable level.



Solar Thermal Markets in Europe
Solar thermal has a good position in the market today – our solutions help consumers and society reduce our carbon footprint and our dependence on scarce, imported fuels. That is why we believe that our sector will be less affected by the current economic turmoil.

The map overleaf shows, at a glance, how European markets are developing thanks to the economic and environmental benefits of solar thermal.

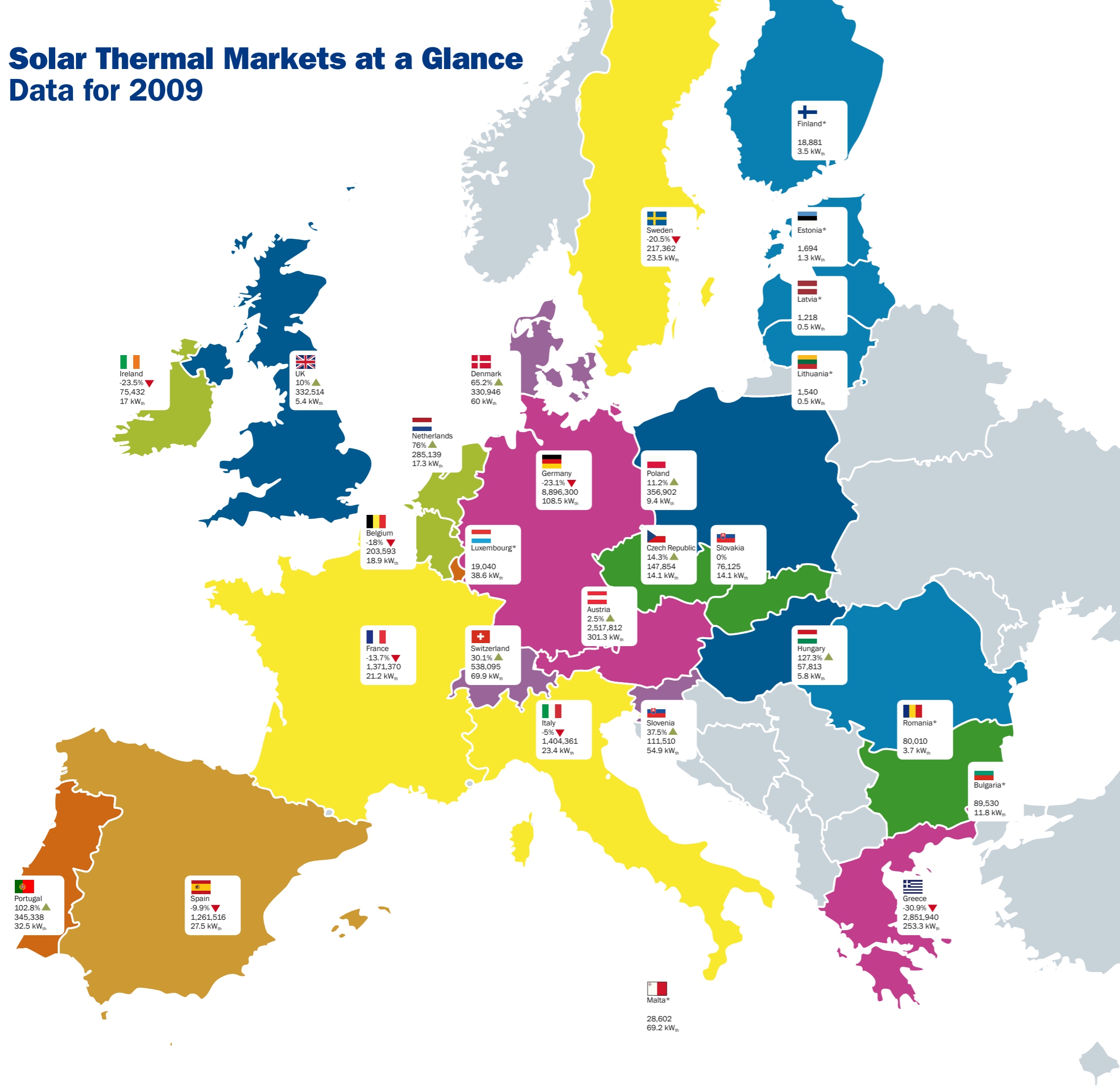
Study: Potential of Solar Thermal in Europe



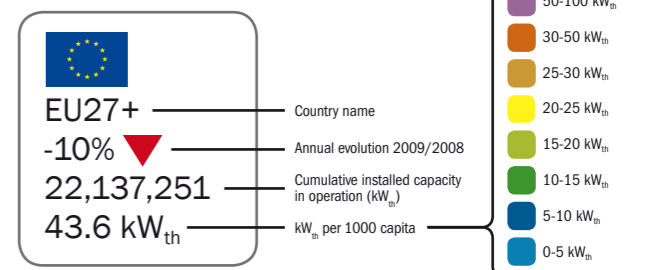
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Solar Thermal Markets at a Glance

Data for 2009

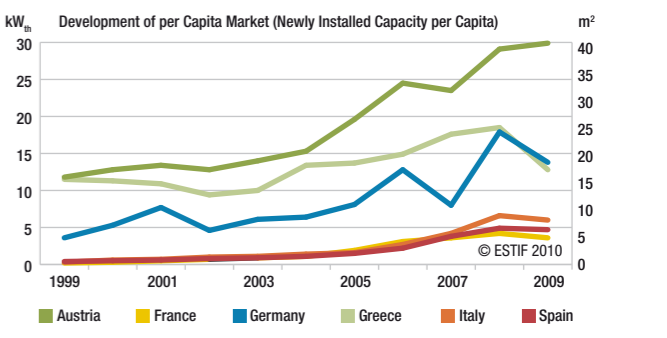
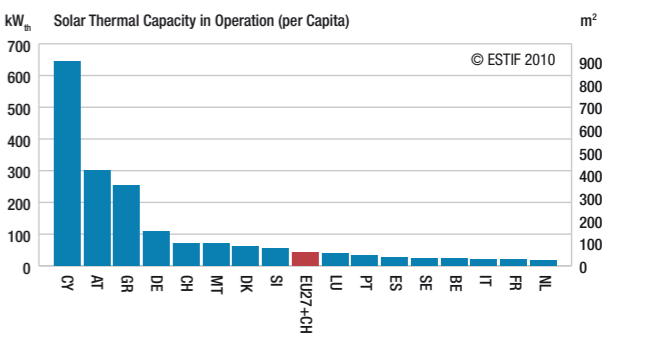
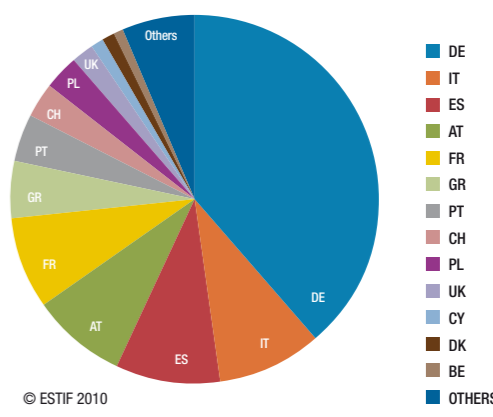


Key



Note:
The data are usually provided by the national solar thermal associations. Countries marked with an * are ESTIF estimations and the data are therefore not sufficient to set a percentual variation in the market.

Shares of the European Solar Thermal Market (Newly Installed Capacity)





www.solarthermalworld.org

Your Entry in the World of Solar Thermal Energy

The *solarthermalworld.org* is a global knowledge-based web portal offering the latest news and background information on the development of the international solar thermal sector.

The website includes different features:

Webinars News Background Information

Information by Region, Market Sector and Pillar

Directory of Companies

Monthly Newsletters



Calendar of Events

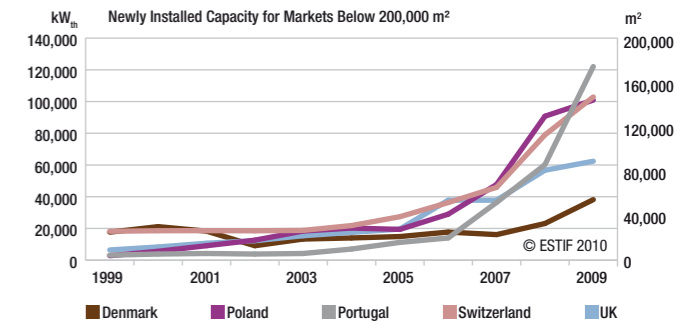
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Database of Incentive Programmes

Solar Thermal Markets Below 200,000 m² Newly Installed Capacity in 2009

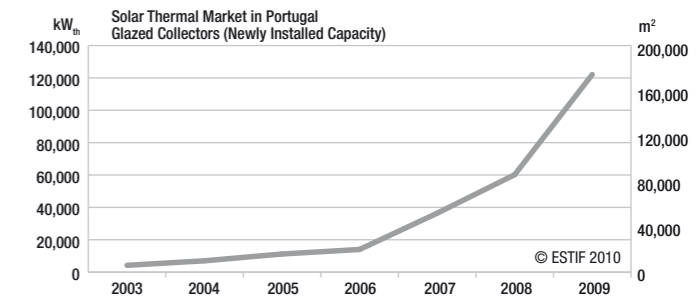
When considering “smaller” markets, in particular those above 50,000 m² of newly installed capacity but below the threshold of 200,000 m², a strong growth can be observed, in particular since 2005.



Portugal

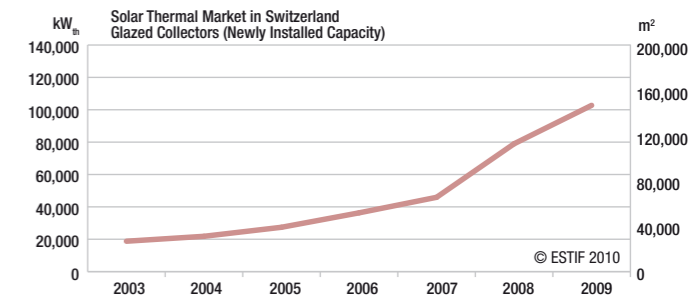
In 2009, the most impressive growth occurred in Portugal, making it the largest market in this category below 200,000 m². This growth was driven by a new and aggressive financial incentive programme. Launched in March 2009, it had very ambitious goals and offered an interesting combination of different mechanisms (direct support up to 50% of the total investment, VAT and income tax reductions, and loans at reduced rates). This programme was initially controversial as many companies were unable to participate in this scheme. Once these teething problems ironed out, it had a strong impact on the market, with an estimated 90,000 m² installed in 2009 (equivalent to the total market growth) and a similar amount to be installed in the first half of 2010.

Unfortunately, the extension of this programme into 2010 has not been confirmed, raising some concerns about the negative effect of this stop-go policy on the Portuguese solar thermal market.



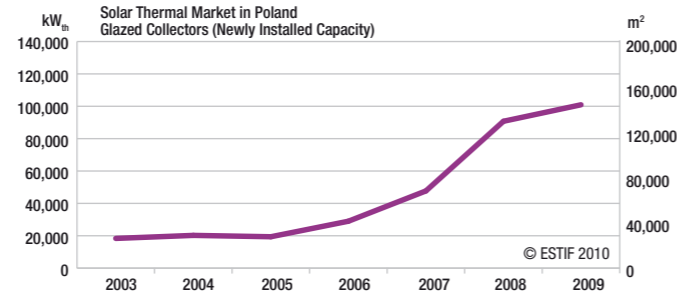
Switzerland

In 2008, the Swiss market grew by 70% and has increased again in 2009 by 30% (34,000 m²), reaching an annual newly installed capacity of 103 MW (147,000 m²) in 2009. This is due to the fact that 23 out of the 26 cantons offered subsidies for solar thermal. These vary widely, the average being around 15% of the investment. Furthermore, in almost all cantons, the investment is tax deductible. The total amount of subsidies and tax deductions represents a contribution of 30-40% to the whole investment. In 2009, some cantons doubled temporarily their contribution in the frame of a national economic recovery programme. And for the first time in 2010, all cantons will provide subsidies for solar thermal. The positive trend on the Swiss solar thermal market is therefore likely to be confirmed this year.



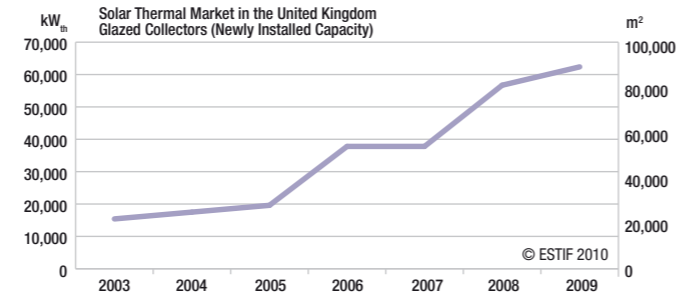
Poland

The Polish solar thermal market represents a special case, as it has been growing steadily even without any financial incentive schemes in place for end-users. Nonetheless, in 2009 this market represented 101 MW of newly installed capacity (144,000 m²), an increase of 11% over the previous year, having almost doubled in size in 2008. In 2010, the market is expected to grow, although sales may be deferred as a new incentive scheme is scheduled to become operative in Autumn 2010. This new programme will support the implementation of the Polish Renewable Action Plan offering a subsidy for individuals of up to 45% of the total investment costs.



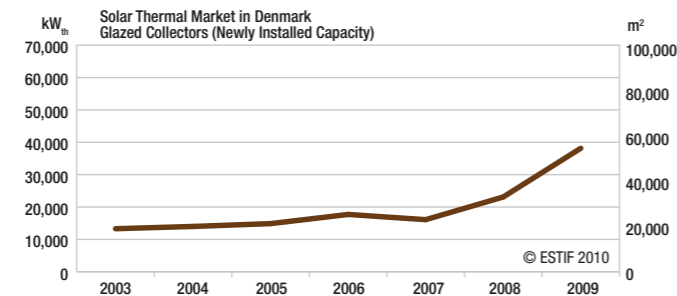
United Kingdom

In 2009, the UK solar thermal market grew by 10% reaching 62 MW_{th} i.e. 89,100 m² newly installed capacity. Although some market share has been lost to PV as a result of the new electrical Feed-in-Tariff announced in July 2009, the market remained stable in 2009. A new support mechanism, the Renewable Heat Incentive (RHI) is under development and will be most likely launched in April 2011, depending however on the decisions made by the new British government.



Denmark

Denmark is a unique market in Europe, as most of the newly installed capacity in 2009 stems from large systems i.e. pre-heating solar thermal plants integrated into district heating networks. The estimated sales for such large systems represented 35,000 m², i.e. 64% of the overall Danish solar thermal market, where the residential sector is still relatively small and has been virtually stagnant over the past years because of limited public incentives for solar thermal (or even energy efficiency) in Denmark.



Market Size in terms of Solar Thermal Capacity (KW_{th}) and in terms of Collector Area (m²)

	In Operation ²		Market (=Newly Installed)					Annual Evolution of the Market	
	2009		2007	2008	2009			2009/2008	
	Total Glazed	Total Glazed	Total Glazed	Total Glazed	Flat Plate	Vacuum Collectors	Total Glazed	Total Glazed	%
	m ²	kW(th)	m ²	m ²	m ²	m ²	kW(th)	%	%
Austria	3,596,874	2,517,812	281,000	347,703	356,544	348,786	7,758	249,581	3%
Belgium	290,847	203,593	65,000	62,200	50,700	45,500	5,200	35,490	-18%
Bulgaria	127,900	89,530	2,500	25,500	25,000	23,750	1,250	17,500	-2%
Switzerland	768,707	538,095	65,576	112,833	146,750	136,500	10,250	102,725	30%
Cyprus	735,200	514,640	60,000	60,000	55,000	53,000	2,000	38,500	-8%
Czech Republic	211,220	147,854	25,000	35,000	40,000	30,000	10,000	28,000	14%
Germany	12,709,000	8,896,300	940,000	2,100,000	1,615,000	1,430,000	185,000	1,130,500	-23%
Denmark	472,780	330,946	23,000	33,000	54,500	52,000	2,500	38,150	65%
Estonia*	2,420	1,694	350	500	450	60	390	315	-10%
Spain	1,802,166	1,261,516	275,000	434,000	391,000	375,000	16,000	273,700	-10%
Finland*	26,973	18,881	2,500	4,100	4,000	2,800	1,200	2,800	-2%
France ³	1,959,100	1,371,370	330,000	388,000	335,000	324,000	11,000	234,500	-14%
Greece	4,074,200	2,851,940	283,000	298,000	206,000	204,500	1,500	144,200	-31%
Hungary	82,590	57,813	20,648	11,000	25,000	17,000	8,000	17,500	127%
Ireland	107,760	75,432	15,000	43,610	33,360	20,740	12,620	23,352	-24%
Italy	2,006,230	1,404,361	330,000	421,000	400,000	350,000	50,000	280,000	-5%
Lithuania	2,200	1,540	300	300	200	50	150	140	-33%
Luxembourg*	27,200	19,040	3,000	3,600	4,700	3,650	1,050	3,290	31%
Latvia*	1,740	1,218	210	210	180	40	140	126	-14%
Malta*	40,860	28,602	5,500	6,000	5,500	5,500	0	3,850	-8%
Netherlands	407,341	285,139	19,900	25,000	44,000	44,000	0	30,800	76%
Poland	509,860	356,902	68,147	129,632	144,184	106,514	37,670	100,929	11%
Portugal	493,340	345,338	52,000	86,000	174,390	173,040	1,350	122,073	103%
Romania*	114,300	80,010	6,500	8,000	20,000	11,000	9,000	14,000	150%
Sweden	310,517	217,362	25,465	26,813	21,310	13,125	8,185	14,917	-21%
Slovenia	159,300	111,510	12,000	16,000	22,000	17,000	5,000	15,400	38%
Slovakia	108,750	76,125	9,000	13,500	13,500	11,600	1,900	9,450	0%
United Kingdom	475,020	332,514	54,000	81,000	89,100	51,975	37,125	62,370	10%
EU27 + Switzerland	31,624,644	22,137,251	2,974,596	4,772,501	4,277,618	-	-	2,994,333	-10%

Notes:

The data are usually provided by the national solar thermal associations.

Countries marked with an * are ESTIF estimations and the data are therefore not sufficient to set a percentual variation in the market.

1) The relation between collector area and capacity is 1m² = 0.7kW_{th} (kilowatt-thermal)

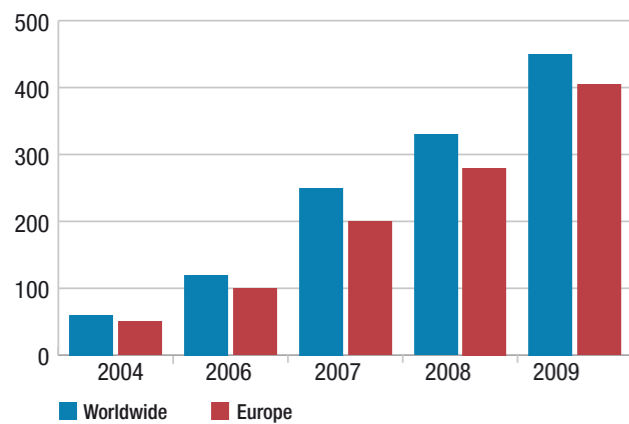
2) Capacity "in operation" refers to the solar thermal capacity built in the past and deemed to be still in use. ESTIF assumes a time of use of 20 years for all systems installed since 1990. Most products today would last considerably longer, but they often cease to be used earlier, e.g. because the building is torn down, or the use of the building has changed.

3) The figures shown here relate to France as a whole. 185,5 MW_{th} (265,000 m²) of this were newly installed in Metropolitan France. The remainder is an estimate for the overseas departments (DOM), amounting to 49 MW_{th} (70,000 m²).

Solar Cooling

Solar cooling is a sustainable alternative to conventional electrically driven split-units (compressor chillers), combining solar collectors as heat source and sorption chillers to produce cold from solar collectors' hot water. The sorption chillers use environmentally friendly refrigerants (water or ammonia) and have only very low electricity demand. Therefore these chillers' operating costs are very low and the CO₂ balance achieved is much better than with split-units. The main advantage of solar cooling is the coincidence of solar irradiation and cooling demand.

Total Amount of Installed Solar Cooling Systems in Europe and the World



The main technologies used for solar cooling with small and medium scale cooling capacity (< 200 kW) are closed systems such as absorption and adsorption chillers, which provide cold water. Open systems, i.e. DEC systems (Desiccant and Evaporative Cooling) or LDAC systems (Liquid Desiccant Air-Conditioning) have been developed. Open systems usually involve a combination of sorptive air dehumidification and evaporative cooling, which is used in ventilation systems for air treatment. The current market share of solar driven absorption chillers is 71%, adsorption chillers 13%, DEC systems 14% and LDAC systems 2%.

The Figure shows the solar cooling market development since 2004. Over the last three years the market for solar cooling has increased by 40 to 70% per annum. In 2009, a total of 450 solar cooling systems were installed worldwide. The first standard solar cooling kits are now on the market and available from system suppliers which will bring costs down and simplify systems' design and installation. The Berlin-based Green Chiller Association for Sorption Cooling e.V. was founded in March 2009 with the mission to promote and develop the solar cooling market in Europe. More information is available on www.greenchiller.eu.

Dr. Uli Jakob, Green Chiller



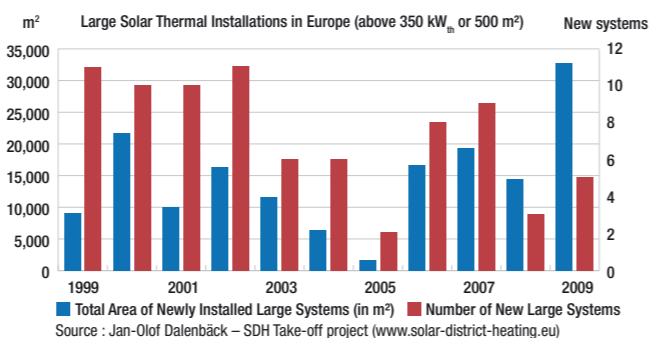
Solar Thermal Going Large

In Europe, the vast majority of solar thermal installations in Europe in individual or collective buildings remain small installations (below 50 m²). However the market for large installations (above 50 m² or even above 500 m²) has been growing. In a challenging year for our industry, the positive developments in connection with large solar thermal installations are promising and show great potential with, in 2009, 35,000 m² newly installed capacity in Denmark alone.

There are different levels of large installations and the terminology is not fully harmonised. In Denmark and Sweden large installations are installations above 350 kW_{th} of installed capacity (>500 m²) used in particular for solar district heating which has a strong tradition (the first plant was built in Sweden in 1979). In France, Germany, Spain, Italy the market for medium systems between 50 m² and 100 m² is increasing even in a recession year. In France where extremely reliable data is available, there has been a spectacular development triggered by the "fonds chaleur", an incentive programme specifically designed for this type of application. The social housing and hotel sectors have, in particular, benefited from this scheme which the French authorities intends to develop further in the coming years.

This application will become increasingly relevant with the implementation of the Energy Performance of Buildings Directive (EPBD) as Europe prepares for the "near-zero energy building" (a building where the reduced energy needs are provided by renewable energies on site or nearby).

The graph below, which illustrates the evolution of the "very large" installations, shows an interesting trend: while the number of installations is decreasing the total surface installed is increasing significantly.



The Economic Value of the Solar Thermal Industry

Solar Thermal Contribution to the Energy Supply and CO₂ Reduction

In 2009 the estimated solar yield was close to reaching 16 TW_{th}. This corresponds to an oil equivalent of 1,36 million metric tons. Taking this oil equivalent into account the annual contribution to the CO₂ reduction by solar thermal systems is 7 million metric tons.

Economic Impacts of Solar Thermal and Job Creations

The total annual turnover of the European solar thermal industry has recently exceeded the 3 billion Euros mark. Solar thermal creates economic benefits on two different levels: It reduces the costs associated with burning imported fossil fuels or using electricity for heating and cooling. And it creates job and economic wealth in the production, marketing, sales and maintenance of solar thermal systems.

Today, solar thermal already provides the equivalent of 37,500 full-time jobs in Europe (approximately 1 full-time job per 80 kW_{th} of newly installed capacity). A large share of this turnover supports local SMEs, which are selling, planning, installing and servicing solar thermal systems.

What Have We Achieved for the European Solar Thermal Industry in 2009?

Stakeholders active in the solar thermal industry - whether solar panel/systems component manufacturers, certification bodies, test labs or service providers - ESTIF has fought for you in 2009!

ESTIF has financed the development of the **Solar Keymark "Flexible system of testing & certification"**: A simplified system-based certification process, saving the whole industry time and money that can now be invested in Research and Development. Moreover, through the **QAIST project** (Quality Assurance in Solar Thermal) we are supporting a valuable cooperation between some of the major European standards & certification bodies.

ESTIF has closely cooperated with the European Commission to develop an **energy efficiency rating and labelling scheme for heating systems** that will better inform consumers and public authorities on solar thermal performance. This scheme protects small and medium business by avoiding unnecessary new testing while creating a real market incentive for solar thermal.

ESTIF is monitoring the development of renewable heating and cooling policies across Europe and in particular the outcome of consultations on **National Renewable Energy Action Plans**.

ESTIF is encouraging and **supporting the creation of solar thermal industry associations** in emerging markets such as Poland, cooperating in the development of national reports and workshops in several countries via projects such as **Trans-Solar**.

ESTIF has played a leading role in the successful launch of the **European Technology Platform on Renewable Heating and Cooling**. The "sleeping giant", accounting for nearly half of the European final energy demand, now has its own technology platform.

ESTIF has coordinated the **"European Solar Days"** campaign, THE major tool for promoting the use of solar energy, i.e. solar thermal, throughout Europe.

If you have any questions in connection with these topics, if you wish to learn more about our activities, or if you would like to join ESTIF please do not hesitate to contact us.

European Solar Thermal Industry Federation (ESTIF)

Renewable Energy House
Rue d'Arlon 63-67
B-1040 Brussels
Tel: +32 2 546 19 38
Fax: +32 2 546 19 39
Email: info@estif.org
Website : www.estif.org



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