

Solar Thermal Markets in Europe

Trends and Market Statistics 2011

June 2012



European
Solar
Thermal
Industry
Federation

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Please note that all figures presented in this brochure reflect ESTIF knowledge at the time of publication.
For some countries, the data provided are only ESTIF estimations.
Picture courtesy of: TISUN GmbH

Editorial



Overall, there was little development in the European solar thermal market in 2011. The market, consisting of the 27 EU member states plus Switzerland, did not show either real decline or growth compared with the previous year. It is challenging to comment on such a market situation after two consecutive years of decrease! Is this the start of a market turnaround or can further decrease be expected? Should we consider that

we did not take full advantage of increasing fossil fuel prices and further progress in the implementation of the Renewable Energy Sources Directive? Or should we be relieved that the stop-go incentive policies, combined with weak new-build and retrofit sectors, did not have the anticipated negative impact?

We must all believe in a future solar thermal market deployment. The latest market surveys in Europe and Germany show that solar thermal has a very good image; according to a recent opinion poll by the European Commission (Eurobarometer, February 2011): 94% of the respondents want more 'solar energy' in their country. This is backed by a public consultation, also launched by the Commission, on the European Union's future renewable energy policy. Among all renewable heating sources, solar thermal was ranked top and seen by 44% people surveyed as the heat source to play a bigger role in years to come.

To build up on this positive image and return to a real growth, our industry should focus on the following points:

- Our systems need to be more price competitive in several markets since financial incentives will not support our industry forever. We also need to be competitive with any form of energy in the future to ensure stable growth. We must start to simplify our systems to avoid 'safety add-ons' to installation costs.
- We need urgently to explore new market segments such as multiple dwellings, district heating, industrial process heat and solar cooling. This requires stronger public and industry R&D funding in the next few years. New business models may be successful to tap into this promising market.
- Finally, we need to find tools to stimulate the potential in building stock refurbishment; Solar Thermal can be of great importance to achieve the energy efficiency objectives in this market segment.

This year's edition of our annual market statistics will offer some innovations such as the NREAP Barometer and a Business Climate Indicator. Let's make this year a better one!

Good reading and best regards,

Robin M. Welling
President of ESTIF

What have we achieved for the European solar thermal industry in 2011?

Members of the solar thermal community, whether panel/systems or component manufacturers, certification bodies, test labs or service providers, ESTIF has fought for you in 2011!

ESTIF organised a very successful ESTEC 2011 conference attracting high level experts from industry, academia and public authorities, and providing a positive visibility for the solar thermal industry.

ESTIF intensified its efforts in support of the implementation of the CE marking in both the Construction Product Directive and the Pressure Equipment Directive for our products, which should reduce considerably the need for specific testing and certification in several European markets.

ESTIF followed closely the last stage of the elaboration process for the energy labelling of space and water heating appliances so that solar thermal can reap the full benefit of this new regulation.

ESTIF supported the work of the solar thermal panel of the RHC-Platform, which will result in the publication of the Solar Thermal Strategic Research Priorities in 2012.

ESTIF maintained its commitment to several European projects of great value for the solar thermal industry such as the **QAIST project dealing with standardisation**, the **QualiCert project in connection with the certification of installers** and, of course, the **European Solar Days**, the **reference grassroots campaign now involving 20 European countries**.

ESTIF entered into collaboration with the IEA Solar Heating and Cooling Programme to participate in the elaboration of the **International Energy Agency Solar Heating and Cooling Roadmap** which should greatly contribute to establishing the global role and potential of solar thermal.

ESTIF actively contributed, in close collaboration with the IEA SHC programme, to the development and publication of the **area to energy model for converting the installed solar thermal collector area into energy actually produced**. This model will greatly facilitate the process for highlighting the contribution and potential of solar thermal in energy scenarios and analyses in Europe and worldwide.

ESTIF collaborated with the Global Solar Water Heating Development Programme of the United Nations Environment Programme as a regional partner for Europe. This programme aims at developing solar thermal in target countries worldwide.

ESTIF organised or participated in several events, conferences and workshops involving the European Institutions, to promote solar thermal.

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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.

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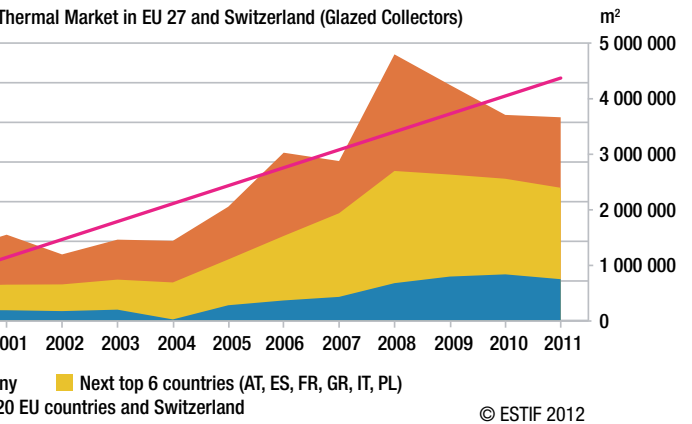
Solar Thermal Markets in EU 27 and Switzerland (glazed collectors)

2011 was a year of mixed messages. While the newly installed capacity in 2011 remained close to the 2.6 GW_{th} installed in 2010, evolution in the different national markets has been very diverse. Some important markets continue on the growth path, including the biggest European market, Germany, and also Poland, which is now joining the select group of markets above 140 MW_{th} (200 000 m²) of newly installed capacity. Nevertheless, some markets have been going through a very difficult time, especially in Southern European countries, such as Italy, Spain and Portugal. Interestingly enough, Greece has bucked this trend with a slight market growth, which is most certainly due to the high and rising costs of other energy sources.

Despite the impact of the economic and financial crisis, keenly felt during the last three years, the solar thermal industry still shows an average growth of 3.9% and 9.0% over the last five and ten years, respectively.

Large size systems (above 35 kW_{th} or 50 m²) for commercial heating and cooling applications have shown a positive development, as have very large systems (above 350 kW_{th} / 500 m²), used in solar assisted district heating or for industrial process heat.

However, although the number of these applications is increasing, they cannot make up for the downturn experienced in most traditional market segments such as domestic hot water

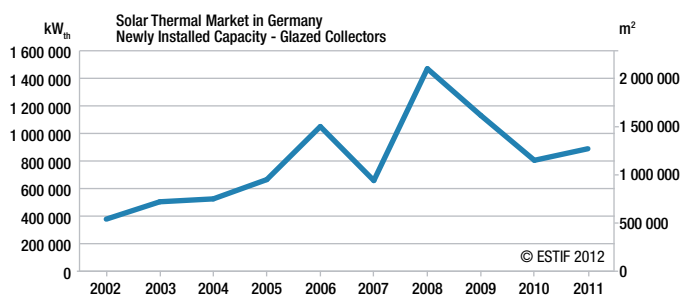


production for single family dwellings, as less retrofit and new-build projects have been initiated since the start of the financial and economic crisis.

Even under such difficult economic conditions, solar heating and cooling has proved to be a key player in the European energy policy framework, especially towards achieving the 2020 targets. With almost 2.6 GW_{th} installed in 2011, the total installed capacity in Europe is now 26.3 GW_{th}, generating 18.8 TWh of solar thermal energy while contributing to savings of 13 MMt CO₂. The economic importance of solar thermal cannot be ignored with a turnover of around 2.6 billion Euros in 2011 and 32 000 people employed full time by the industry.

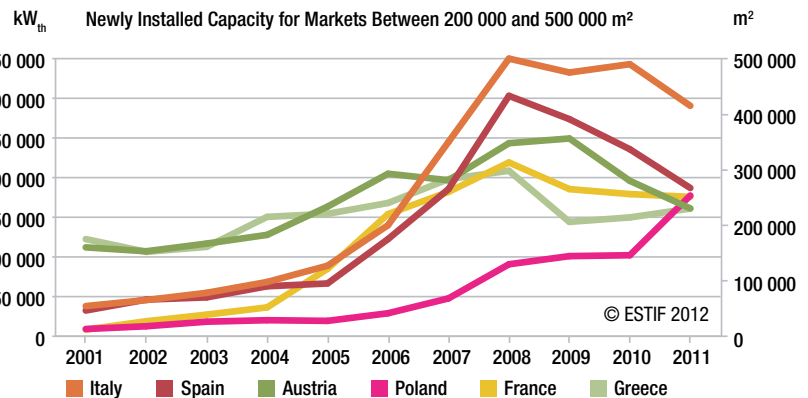
Germany

With an 11% increase it seems that in 2011 the giant has awakened. From being the main growth driver, the German market became the sick man of Europe. The financial crisis and uncertainties surrounding financial products have encouraged safe, though long-term, investments. In 2011, German consumers have, to some extent, opted to invest in energy savings and renewable energy. In all probability this was also influenced by the degressive structure of the financial incentive scheme introduced by the German authorities this year and coming into force in 2012. This resulted in lower subsidies allocated under the incentive programme for renewable heat (Marktanzreizprogramm) and consequently the market peaked towards the end of 2011; private investors wanting to benefit from the higher incentives before the December 2011 deadline.



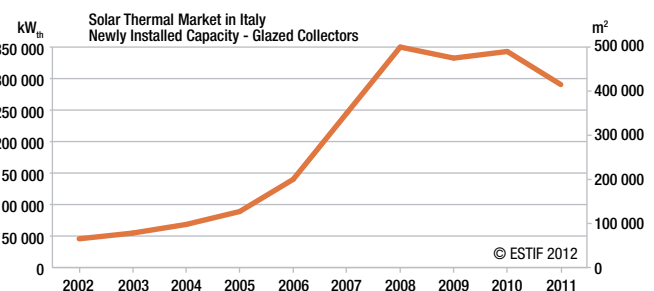
Solar Thermal Markets between 200 000 and 500 000 m²

The group of countries above 140 MW_{th} (200 000 m²) of newly installed capacity has now acquired a new member: Poland. With a growth of 70% in 2011, this market has 177.5 MW_{th} (253 500 m²) of newly installed capacity, making it the fourth European market in 2011, behind Germany (889 MW_{th}), Italy (290.5 MW_{th}) and Spain (187 MW_{th}), and on a par with France (176 MW_{th}). With this evolution, from the larger European countries in terms of population, only the United Kingdom remains well below its potential. On the other hand, Austria and Greece still remain the countries in continental Europe with the highest newly installed capacity per capita, respectively 27 and 20 m² per 1000 inhabitants installed during 2011. Total sales for this group of countries have come down from 1.2 GW_{th} in 2010 to 1.15 GW_{th} in 2011, representing a decrease of 4%.



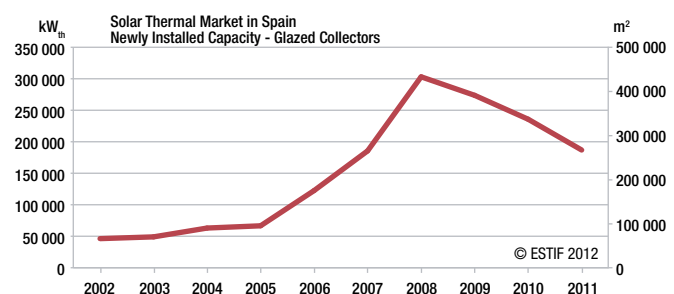
Italy

After some years when the Italian market experienced growth and became the second largest European market under difficult circumstances, Italy has been hit by the country's economic problems. "Unpredictability" is probably the key word here: over the 55% tax rebate; over the announcement of a feed in tariff for heat, over the economic future. Despite its strong solar thermal industrial base and ambitious objectives in the National Renewable Energy Action Plan, the Italian government is delaying the introduction of a clear, stable framework for the industry. The boom in the solar photovoltaic sector has definitely soaked up private and public investment as well as public funding. The 55% tax rebate (available until the end of 2012) is not attractive enough, since it is to be amortized over a ten-year period. In addition, it seems that installing solar thermal in listed buildings is becoming increasingly difficult with a huge amount of administrative red tape. As a result, the market shrank by 15%, reaching approximately 290 MW_{th} of newly installed capacity (415 000 m²).



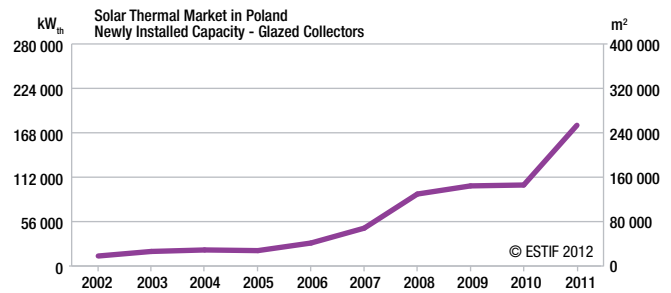
Spain

Not surprisingly, the Spanish market has contracted once again. This decrease, for the third year in a row in the third largest European solar thermal market, poses additional difficulties to the sector and particularly to Spanish companies. The market contracted by 20%, to approximately 187 MW_{th} (267 000 m²) of newly installed capacity. As the crisis in the construction sector is expected to continue, the best prospects for this market lie with the strong development of the large systems segment, backed by the introduction of an incentive scheme for energy production. This has been put on hold, together with other measures included in the Renewable Energy Plan (PER), following budget cuts announced by the new Spanish Government, casting a shadow over the short-term future of this sector in Spain.



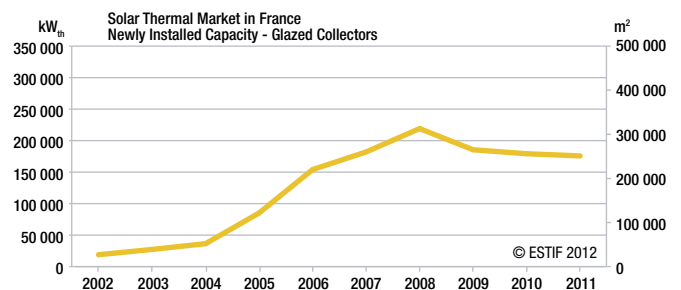
Poland

Solar thermal has experienced an impressive growth in Poland. In the past, this was already a steadily growing market before strong support measures were put in place, in line with the ambitious 2020 targets set by Poland for solar thermal – 10 GW_{th} (14 mio m²) to be installed by 2020. These measures have had a very positive impact, with 177,5 MW_{th} (253 500 m²) installed in 2011. The main support programme is run by the National Fund for Environmental Protection and Water Management. Up to May 2012, 126 000 m² of solar collectors were sold under this programme which started in August 2010. There are also other popular support programmes and subsidies, such as Voivodships Funds for Environmental Protection and Water Management, Regional Operating Programmes and a Swiss fund backing investment in renewable energy sources.



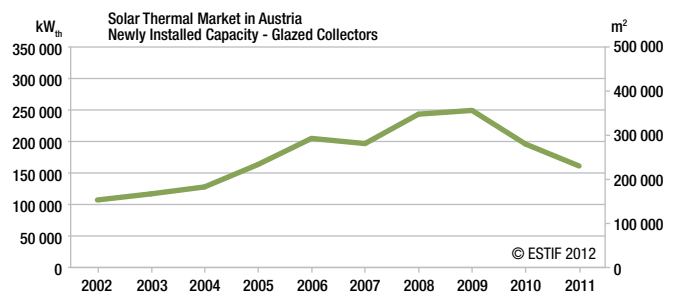
France

In 2011, the French solar thermal market decreased by 2% in terms of installed collector area compared with 2010. Large installations (collective housing) increased by 30%, offsetting the decline in individual systems. For the first time, in 2011, over 70 MW_{th} (100 000 m²) of collectors were installed in collective housing under the “Fonds Chaleur”. The previous years’ negative trend continued for individual dwellings: hot water and combi systems decreasing respectively by 15% and 24 %. With 250 000 m² installed in 2011 in Metropolitan France, the one million square meters set as an objective in the multi annual public investment plan in renewable heat so-called “Programmation Pluriannuelle d’Investissement dans la chaleur renouvelable” will definitively not be reached.



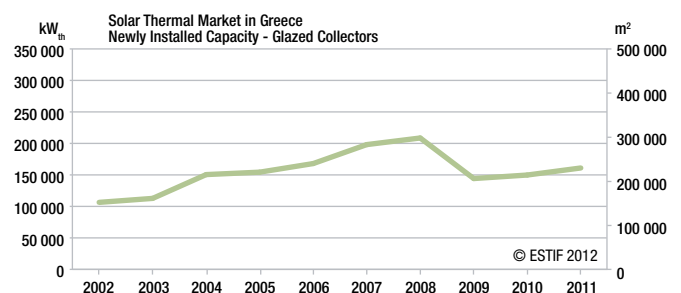
Austria

The largest European market per capita in Continental Europe is slowing down. Consumers have not experienced the expected dramatic fossil fuel price increases and this solar thermal country is also discovering solar photovoltaic which, as usual, competes directly with solar thermal when it comes to private investment. There was no major solar promotion campaign and the “Land” of Lower Austria stopped all financial incentives for solar heat, causing sales to collapse in this region. This accounts for most of the drop at national level. Incentive schemes are maintained in all other regions. All in all, this market underwent a downturn with only 161 MW_{th} newly installed (230 000 m²), representing a decrease of almost 18% in comparison with the previous year.



Greece

The Greek solar thermal market has shown great resilience and has grown under extremely difficult conditions in the country. The 161 000 kW_{th} of newly installed capacity (230 000 m²) represented a growth of 7.5% compared with the previous year. This is a remarkable example of the solar thermal energy potential in a mature market, where people know and trust the technology, and see it as one of the main options for savings in fuel and electricity, particularly in a scenario of unstable and rising costs.

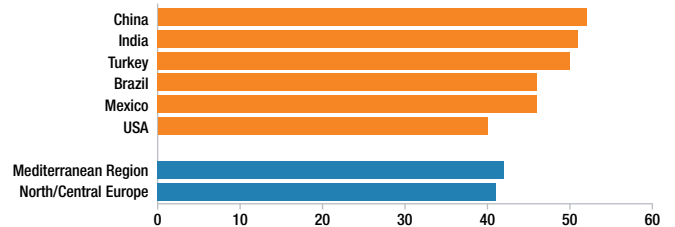


Major markets outside Europe

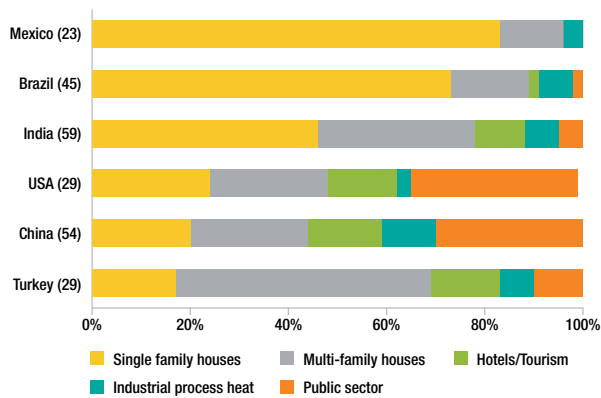
Analyses of solrico, Author: Bärbel Epp

The Asian countries China and India reach an outstanding high average of over 50 points on the ISOL Index, ranking 10 points above the long-term ISOL Index of the Mediterranean Region (42) and North/Central Europe (41). With only 40 points, the industry in the US shows the least satisfying result. The ISOL Index is a point-based business climate index, which measures the satisfaction of industry players in 16 key solar thermal markets worldwide, including their present and future business opportunities.

Long-term average ISOL Index



What is the fastest-growing segment in your national solar thermal market?



Attractive market segments in different countries

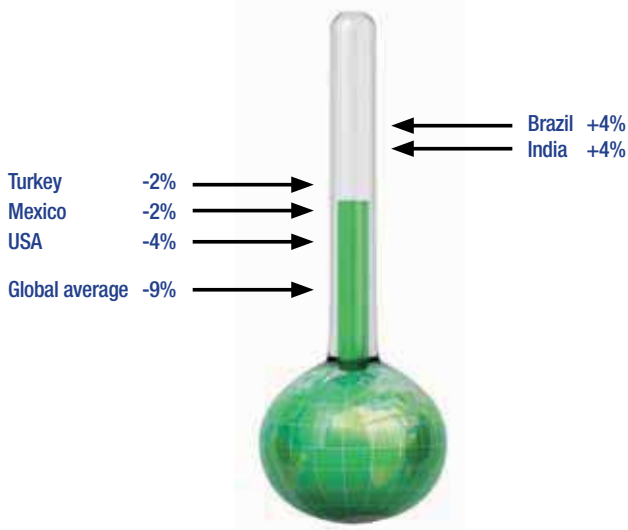
The chart to the left is based on two surveys of solar thermal collector and system manufacturers (December 2011 and June 2012). Participating companies ticked one multiple-choice answer to the question: "What is the fastest growing segment in your national solar thermal market?" The figure in brackets behind the country shows the number of questionnaires which were averaged to calculate the score.

- Single-family houses are still the dominating customer group in Mexico and Brazil. The other markets seem far more diverse.
- China is the frontrunner when it comes to the development of the commercial and public sector. One third of the companies expect the public sector to grow at fast rates.
- The majority of Turkish collector manufacturers and system suppliers see the multi-family building sector as the most attractive one.
- Besides the strong public sector, every third US company also ticked multi-family houses

Country	Newly installed collector area 2011	Newly installed capacity 2011	Growth rate 2011/2010
Brazil	517 517 m ²	362 MW _{th}	9%
China	57 000 000 m ²	29 900 MW _{th}	16%
India	600 000 m ²	364 MW _{th}	n/a
Mexico	180 000 m ²	126 MW _{th}	0%
Turkey	1 805 675 m ²	1 264 MW _{th}	9%

Figures for major solar heating and cooling markets outside Europe. The official figure of the Ministry of New and Renewable Energy (MNRE) in India for the fiscal year 2001-2012 is based on the subsidized collector area. Insiders expect the "grey" market volume to be almost as large as the officially registered part. The official market figures of the USA were not available before printing deadline. Source: ABRAVA/Dasol, The Sun's Vision, MNRE, Ezinc, industry estimations.

Forecast Index June 2012



The “temperature” shows if the industry in a particular country is more (plus) or less (minus) optimistic about the business development over the next six months compared to the June surveys of previous years.

Forecast 2012: no great changes expected

All of the countries in the chart to the left show a “temperature” close to zero. This means that no great changes are expected for this year. Strong markets, such as Brazil and India, keep their high rates in 2012. Mexico’s industry players are unsure because of the elections and the slowly developing building sector. They estimate nothing more than a flat market, as was the case in 2011. The USA did well in 2011 (plus 10 %, according to industry estimates). The drop in natural gas prices, however, is worrying the national industry.

The presented results are taken from the latest ISOL Navigator study published in June 2012.
Further information: www.solrico.com

RHC Renewable Heating & Cooling

European Technology Platform

The European Technology Platform on Renewable Heating & Cooling (RHC-Platform) brings together stakeholders from the solar thermal, biomass and geothermal sector. The objective of the RHC-Platform is to encourage the use of renewable energy technologies for heating and cooling by maximizing synergies and strengthening efforts towards research, development and technological innovation to consolidate Europe’s leading position in the sector. In May 2011, the RHC-Platform published its “Common Vision” which is now complemented by the “Strategic Research Priorities for Solar Thermal Technology”.

This new publication describes the potential of solar thermal, as well as the technological requirements and R&D priorities needed to facilitate the greater deployment of solar thermal in multiple market segments.

Membership is free! Join the Platform today and become part of the community!

www.rhc-platform.org

You want more information on the RHC-Platform? Check page 17 of this brochure!

Strategic Research Priorities for Solar Thermal Technology

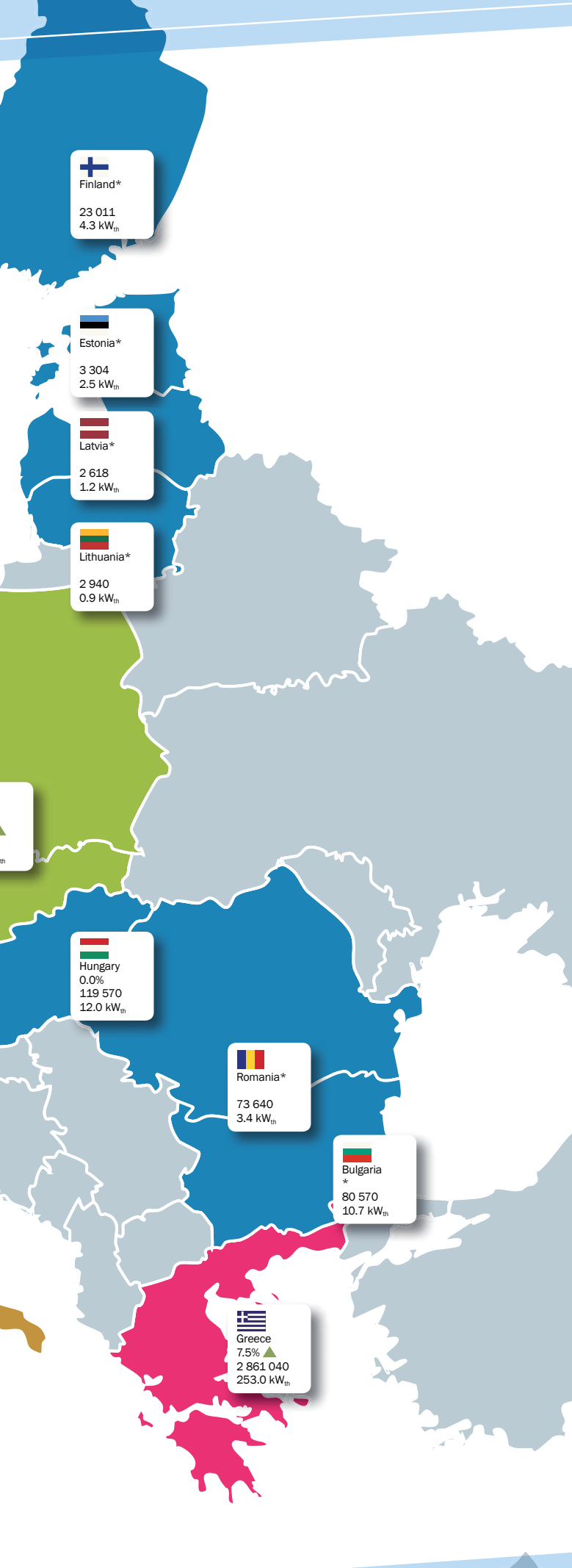


The Secretariat of the European Technology Platform on Renewable Heating and Cooling is financially supported by the 7th Framework Programme of the European Commission (GA n. 268205).

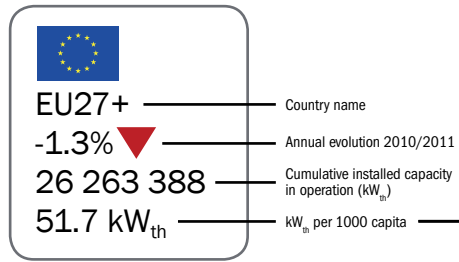
Solar Thermal Markets at a Glance

Data for 2011



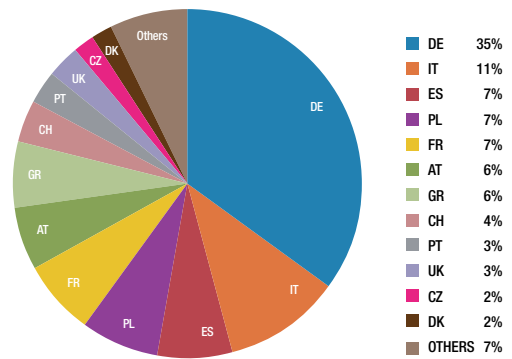


Key

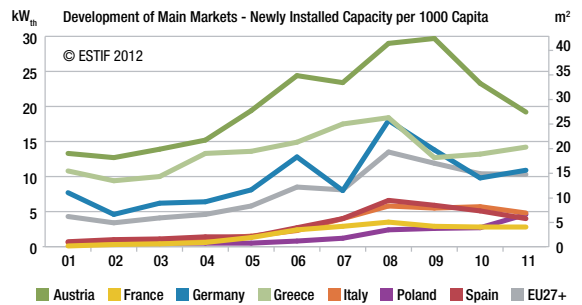
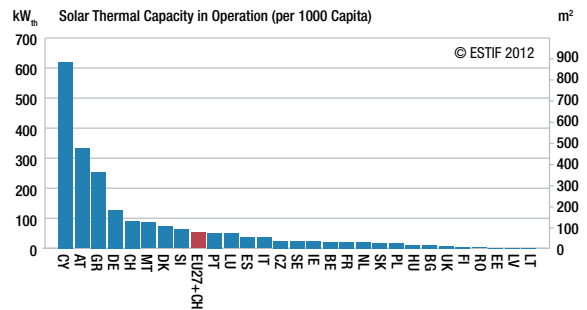


Note:
 The data are usually provided by national solar thermal associations or other national sources. Countries marked with an * are ESTIF estimations and are therefore not sufficient to set a percentage variation in the market.

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



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For a bright Future

European Solar Days

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The number of events and participants
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Want to know more?
Contact ESTIF, the project coordinator:

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* Countries in dark grey have already organized Solar Days events

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	
	2011		2009	2010	2011			2011/2010	
	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	m ²	kW(th)	%
Austria	3 988 088	2 791 662	356 166	279 898	230 189	221 495	8 694	161 132	-17.8%
Belgium	323 283	226 298	50 700	42 500	45 500	35 500	10 000	31 850	7.1%
Bulgaria*	115 100	80 570	8 000	8 400	10 800	10 000	800	7 560	-
Cyprus	713 359	499 351	34 709	30 713	28 437	26 794	1 643	19 906	-7.4%
Czech Republic	378 066	264 647	51 669	91 717	65 000	49 000	16 000	45 500	-29.1%
Denmark	583 605	408 524	54 496	64 651	62 401	61 897	504	43 681	-3.5%
Estonia*	4 720	3 304	450	500	1 800	900	900	1 260	-
Finland*	32 873	23 011	3 400	3 700	4 000	3 000	1 000	2 800	-
France ⁴	1 824 900	1 277 430	265 000	256 000	251 000	242 200	8 800	175 700	-2.0%
Germany	14 994 000	10 495 800	1 615 000	1 150 000	1 270 000	1 152 000	118 000	889 000	10.4%
Greece	4 087 200	2 861 040	206 000	214 000	230 000	228 500	1 500	161 000	7.5%
Hungary	170 814	119 570	22 000	21 000	21 000	14 900	6 100	14 700	0.0%
Ireland	158 429	110 900	32 221	24 918	27 000	16 200	10 800	18 900	8.4%
Italy	3 073 930	2 151 751	475 000	490 000	415 000	373 500	41 500	290 500	-15.3%
Latvia*	3 740	2 618	180	200	1 800	1 000	800	1 260	-
Lithuania*	4 200	2 940	200	200	1 800	600	1 200	1 260	-
Luxembourg*	35 850	25 095	4 700	4 500	4 500	3 500	1 000	3 150	-
Malta*	51 360	35 952	5 500	5 000	5 500	5 500	0	3 850	-
Netherlands	474 595	332 217	45 260	40 834	33 000	33 000	0	23 100	-19.2%
Poland	909 390	636 573	144 308	145 906	253 500	187 000	66 500	177 450	73.7%
Portugal	781 295	546 906	173 762	182 271	127 198	126 308	890	89 039	-30.2%
Romania*	105 200	73 640	14 900	15 500	15 500	8 500	7 000	10 850	-
Slovakia	142 250	99 575	13 500	15 000	23 000	19 320	3 680	16 100	53.3%
Slovenia	175 300	122 710	22 000	11 000	12 000	9 000	3 000	8 400	9.1%
Spain	2 369 861	1 658 903	391 000	336 800	266 979	249 728	17 251	186 885	-20.7%
Sweden	337 022	235 915	21 309	20 699	20 807	15 654	5 153	14 565	0.5%
Switzerland	1 023 698	716 589	145 640	144 772	140 000	130 000	10 000	98 000	-3.3%
United Kingdom	656 998	459 899	89 100	105 200	91 778	72 953	18 826	64 245	-12.8%
EU27 + Switzerland	37 519 126	26 263 388	4 246 170	3 705 879	3 659 489	-	-	2 561 643	-1.3%

ESTIF is grateful to the solar thermal associations or other national sources that provide the data for these statistics, including:

AEE INTEC, ATTB/Belsolar, Cyprus Institute of Energy, Czech Ministry of Industry and Trade, Danish Solar Heating Association, Association Professionnelle de l'Énergie Solaire (ENERPLAN), Bundesverband Solarwirtschaft (BSW), Greek Solar Industry Association (EBHE), Solar Thermal Association of Hungarian Building Engineers (MEGNAP), Sustainable Energy Authority of Ireland (SEIA), Associazione Italiana Solare Termico (Assolterm), Holland Solar, EC BREC Institute for Renewable Energy (IEO), Associação Portuguesa da Indústria Solar (APISOLAR), University of Ljubljana, Asociación Solar de la Industria Térmica (ASIT), Svensk solenergi; CHALMERS University of Technology, SWISSOLAR, Solar Trade Association (STA).

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

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

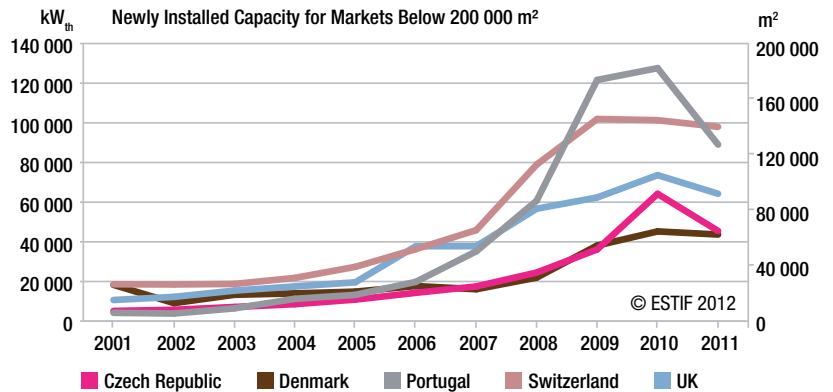
2) Capacity "in operation" refers to the solar thermal capacity built in the past and deemed to be still in use. ESTIF assumes a time of use of 20 years for all systems installed since 1990. Most products today would last considerably longer, but they often cease to be used earlier, e.g. because the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

3) The figures presented are the latest available information at the end of May 2012. In some cases there may be later updates, which means that the figures for one given year may be subsequently revised.

4) The figures shown here relate to Metropolitan France (mainland). In previous years this information has also included an estimate for the overseas departments, which were not taken into account in this year's statistics. As a reference, in 2010 it was considered that the overseas departments amounted to 49 MW_{th} (70,000 m²).

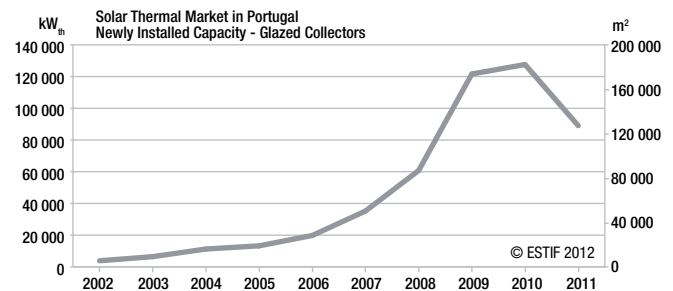
Solar Thermal Markets Below 200 000 m²

During 2011 several markets were seriously affected by political indecision. Within the group of markets between 50 000 and 200 000 m² this negative impact was even more obvious. In particular, Portugal and the Czech Republic are clear examples of the adverse effects of “stop-go” measures. After the growth observed over recent years, these markets have contracted significantly – around 30% resulting in businesses closing down and job losses. On the other hand, the United Kingdom is a clear example of negative impact on the market when expectations are raised, causing the market to stall while customers and agents wait for the promised measures to come into effect. In the case of Switzerland, the situation is more stable, even if some regions (cantons) have revised their policies.



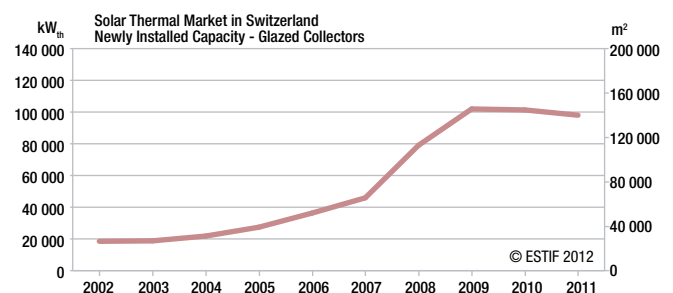
Portugal

Following impressive growth in 2009 and 2010, the support level for solar thermal was lowered in 2011. A new support mechanism for large installations, launched in 2010, had a positive, albeit small, impact on this type of applications in 2011. The residential market was affected by the financial crisis faced by the country. The VAT rate increase foreseen for the beginning of 2012 affected the end of year sales results. Consequently, the market behaved better than expected, but still experienced a reduction of 30%, down to 89 000 kW_{th} (127 000 m²).



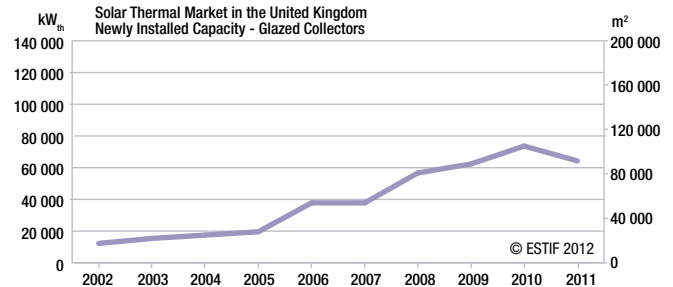
Switzerland

As in 2010, the Swiss market again faced a small reduction of around 3.5%. There were no significant changes in the support framework. Although in some cantons there were some modifications or uncertainty regarding support schemes, but these should not have a major effect on the overall market. Sales in the Swiss market totalled 98 000 kW_{th} of newly installed capacity in 2011 (140 000 m²) and the outlook for 2012 is more of the same, i.e., business as usual.



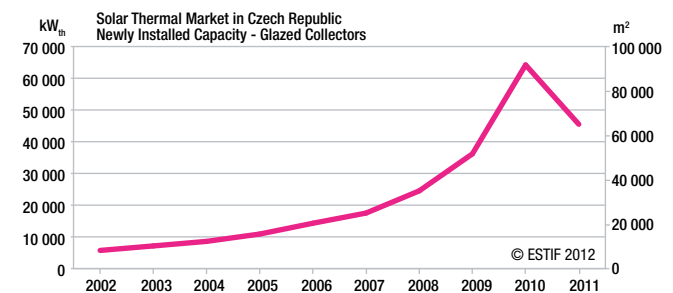
United Kingdom

In 2011, the uncertainty surrounding the Renewable Heat Incentive (RHI) scheme had a negative impact on the UK market. Overall it shrank by almost 13%, with less than 65 MW_{th} installed (91 800 m²). Difficult economic conditions and the recession in the building sector delayed the launch of the tariff for domestic users. Instead, a Renewable Heat Premium Payment (RHPP) was introduced in August 2011 and the Renewable Heat Incentive in October but limited to non-domestic (commercial) applications (£300 per system). It is probably only in 2012 that we will be able to assess the effects of this tariff on the commercial sector. The small scale solar thermal will have to contend with the vagaries of the market, since the government has announced a broad consultation prior to launching the second phase of the RHI, now unlikely before mid 2013.



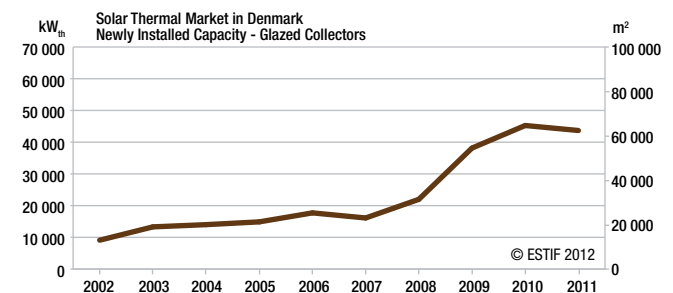
Czech Republic

As expected, the end of the support programme “Green savings” had a strong negative impact on the Czech market. The newly installed capacity in 2011 only reached 45 500 kW_{th} (65 000 m²); representing a 30% decrease compared with 2010, even taking into account some of the final installations which were carried out in 2011. However, in spite of this significant decrease, the market is still 26% above the 2009 level.



Denmark

Results from the Danish market did not meet the initial forecast for large solar thermal plants used for pre-heating and integrated into district heating networks. The impact of these projects will only be felt in 2012 because some of these large projects, commissioned in 2011 are only being installed in 2012. These large systems represented over two-thirds of the market, with 43 000 m² newly installed in 2011, close to the 2010 figures. Therefore, the market decrease (- 3.5%) is the result of a contraction in the small systems sector (residential, commercial). Overall, the newly installed capacity in the Danish market represented approximately 43.6 MW_{th} (62 400 m²).





The Solar Keymark CEN Keymark Scheme

The Quality Label for Solar Thermal



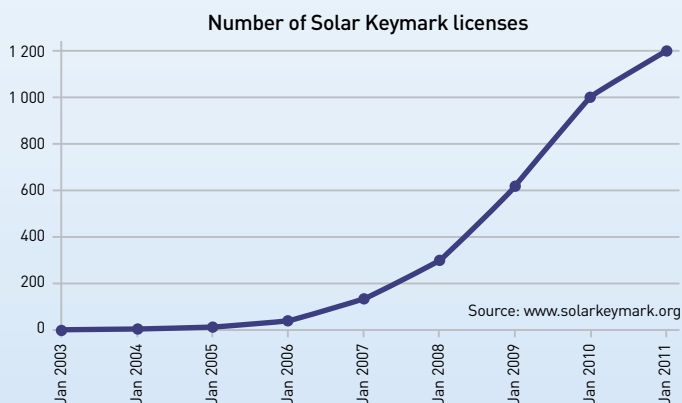
Benefits:

- **Simple test procedure**
- **One test valid across Europe**
- **Licensed products**
- **Access to subsidies**
- **Reliable quality and performance**



The Solar Keymark is a voluntary third-party certification mark for solar thermal products, showing that a product conforms to relevant European standards and fulfils additional requirements. It is used in Europe and increasingly recognized worldwide.

It was developed by the European Solar Thermal Industry Federation (ESTIF) and CEN (European Committee for Standardisation) in close co-operation with leading European test labs and with the support of the European Commission. It is the European quality label for solar thermal products, aiming to reduce trade barriers and promote the use of high quality solar thermal products in the European market and beyond.



Paving the way towards sustainable heating and cooling in Europe

Today, it is a well known fact that almost 50% of the total energy consumed each year in Europe is used for heat production. Therefore, it is critical to address the challenges faced by the heating and cooling sector if we are to implement successful strategies to mitigate the greenhouse gases emissions, to reduce the consumption of ever more expensive fossil fuels as well as our dependency on imported energy sources.

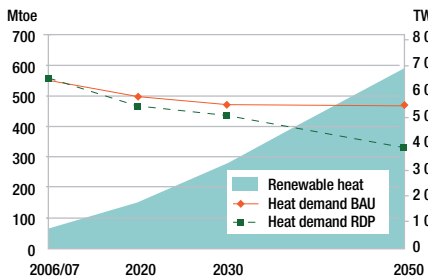


Figure 1: Heating supply from renewable energy sources in EU, RHC-Platform Common Vision, 2011.

This does not only concern the future but also very much the present. The socio-economic and environmental costs of our current energy mix are not sustainable and it is now urgent to move towards a new energy paradigm.

In 2009, stakeholders from the renewable heating and cooling sectors (solar thermal, biomass and geothermal) realized that a shift towards renewable energy sources was crucial and came together to create the European Technology Platform on Renewable Heating and Cooling (RHC-Platform).

This common platform evolved from a previous initiative focusing on solar thermal. Nearly ten years ago, the solar thermal sector identified the need to establish a European technology platform dedicated to solar thermal technology: the European Solar Thermal Technology Platform (ESTTP). Established in 2005, the aim of the ESTTP was to address the political challenges facing the renewable energy sector and to respond to a changing and fast developing market. As early as 2006, the ESTTP formulated its 2030 vision for low-temperature solar thermal applications. Subsequently, with the objectives of increasing R&D activities, accelerating technological development and creating conditions for a broad dissemination of advanced solar thermal technologies, the ESTTP developed its Strategic Research Agenda "Solar Heating and Cooling for a Sustainable Energy Future in Europe".

Currently, within the enlarged structure of the RHC-Platform, solar thermal has become one of the technology panels. The ESTTP consists of more than two hundred experts from industry, research, services in the field of solar thermal energy and related sectors. These experts contribute to the work of the RHC-Platform. The panel is managed by a steering committee of 15 people, selected from the Panel members.

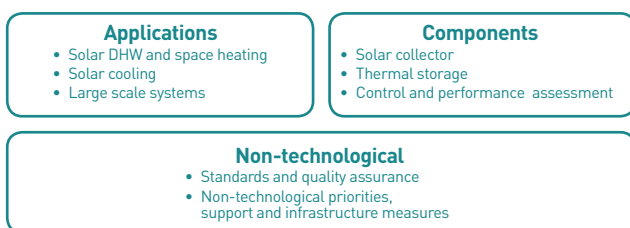


Figure 2: Contents of the "Solar thermal strategic research priorities", RHC-Platform, 2012

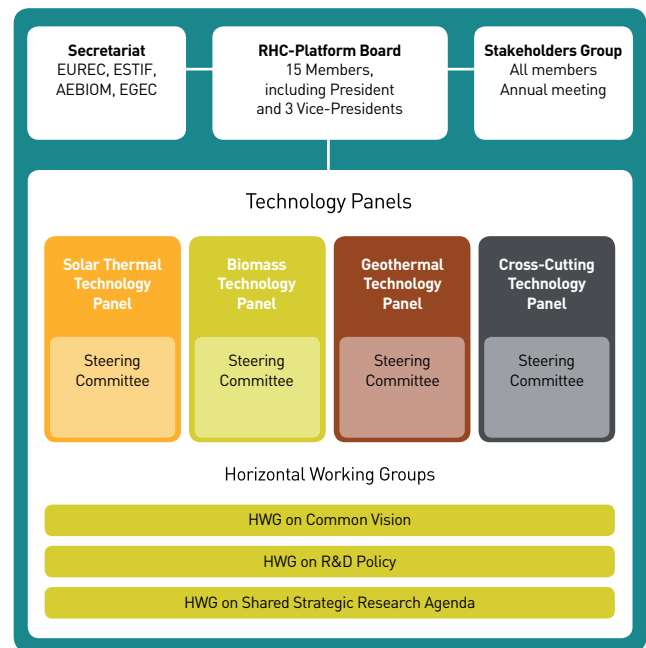


Figure 3: Heating supply from renewable energy sources in EU, RHC-Platform Common Vision, 2011

The ESTTP aims to:

- Promote and inform about the huge potential of solar thermal technology to address the European energy challenges of 2020 and beyond;
- Foster R&D activities in the solar thermal sector to reduce costs, while improving performance and increasing the scope of applications;
- Join forces and seek synergies with other renewable heating and cooling technologies;
- Contribute to the Common Vision and Common Strategic Research Agenda within the RHC-Platform, aiming at putting renewable heating and cooling at the heart of the European energy policy.

As a result of the evolution of the solar thermal industry and the renewable energy sector, boosted by the support of different policy instruments, there was a strong call for an update of the previous SRA into a new "Strategic research priorities of the solar thermal sector". This document is the outcome of the joint effort of ESTTP members. Building on the original SRA, complemented by ideas and input from recent national SRAs developed in countries such as Germany and Austria; it was bolstered by the contributions from experts under the guidance of the Steering Committee ESTTP. This document addresses some of the main requirements for the sector to develop further.

Register as member to participate in a process such as the development of the strategic research priorities, have access to the documents produced by the RHC-Platform and latest information. The participation in the RHC-Platform panels (including the ESTTP) is free and open to all interested professionals. It offers a unique forum to debate and network with experts from the industrial, research and political (or public administration) fields in the different renewable heating and cooling sectors. More information can be found on the RHC platform website: www.rhc-platform.org.

Solar thermal matters!

The perfect solution to fight climate change at global level or to produce clean renewable energy in Europe.

While biomass is the major decentralized renewable energy source both for power and/or heat production, it is not emission free. And the distribution of electricity produced by other important renewable energy sources, such as hydro and wind power, is mainly centrally managed:

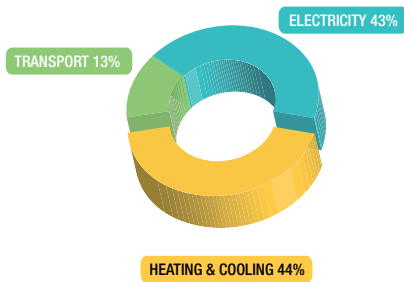
Solar thermal is the main fully zero emission decentralized renewable energy source worldwide.

The renewable energy mix in Europe in 2020

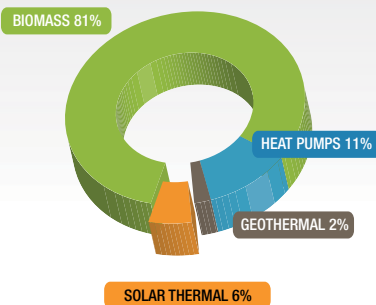
According to the 27 National Renewable Energy Action Plans

Source: www.ecn.nl/nreap - 1 February 2011 (EU 27)

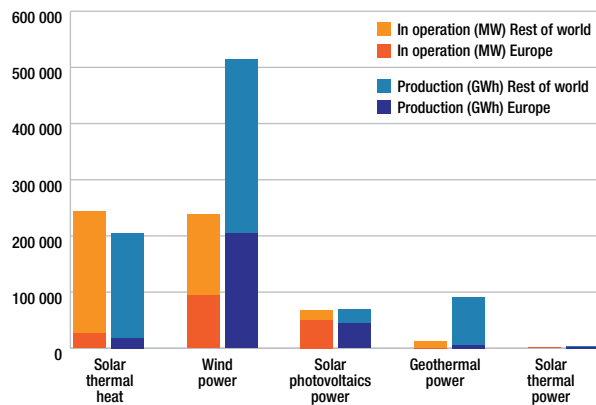
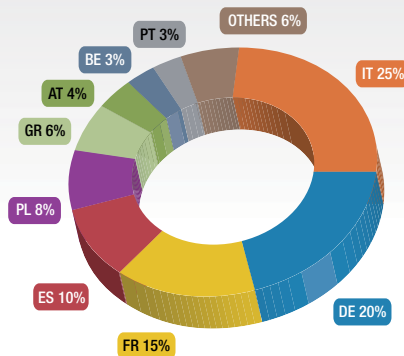
2020 renewable energy targets per sector



2020 targets for renewable heating and cooling per technology



2020: Share of renewable heating and cooling from solar thermal per country



Also in Europe the leading renewable energy sources are by far hydro electricity and biomass for heating; they both were already in a strong position prior to the renewable energy boom. Solar photovoltaic comes third followed by solar thermal. However, it is important to note that while the vast majority of solar photovoltaic systems are installed in Europe (70%), this is not the case for solar thermal (only 10%).

The three pie charts on the left illustrate the renewable energy mix in 2020:

1. 2020 renewable energy targets per sector
2. 2020 targets for renewable heating and cooling per technology
3. 2020: Share of renewable heating and cooling from solar thermal per country

According to the National Renewable Energy Action Plans, in 2020 solar thermal will account for 5.56 % of the total heat supplied from Renewable energy sources in Europe. At first glance, this share might seem modest but it must be put into perspective. For example, when compared with heat pumps, e.g. air-source, hydrothermal and geothermal heat pumps combined; the share of solar thermal equals that for air-source heat pumps and is superior to the others. The solar thermal contribution is also above those from bio diesel or bio liquid for heating. To meet the European Union's objectives we must reach and even exceed our target.

Solar thermal: model for area to energy conversion

Traditionally, solar thermal energy production has not been represented in statistics in such a way that allowed comparison with other renewable energy sources. To remedy this situation, the International Energy Agency Solar Heating and Cooling Programme (IEA-SHC) and major solar thermal industry associations agreed on a common calculation method to estimate the annual solar collector energy output in kWh. The newly-developed methodology introduces very simple formulas, using easily accessible information, such as solar radiation on a horizontal plane at a given location and installed collector area in a country or region to estimate the respective annual solar collector output, i.e. the solar thermal energy production.

www.iea-shc.org/statistics/commoncalculation/index.htm

Is the EU on the right path to achieve the 2020 targets?

In 2011, for the first time, the 27 member states delivered an interim report on the implementation of the Action Plans submitted in 2010. Unfortunately, not all the reports were available as we prepared this publication. These reports were to provide information about the progress with indicative trajectory for each year between 2010 and 2020, as well as a breakdown by renewable energy source.

On this basis and comparing these data with the Action Plans submitted by each country, ESTIF will be able to monitor closely the progress made in the implementation of the solar thermal national objectives. The NREAP Barometer shows you where Europe stands on its way to meeting the solar thermal target for 2020 in terms of heat generation, expressed in TWh.

The cumulated trajectories of growth for solar heat resulting from the national Action Plans would indicate an average growth of over 15% for our industry in the ten years up to 2020. With an average 4% growth in the last five years, we are obviously lagging behind.

The solar thermal target at European level very much relies on a few major countries with real ambitious targets, such as Italy, Belgium, and France and to a lesser extent Germany, Greece, Austria and Spain. The difficult conditions this year and last year in all those markets easily explain the situation. On the other hand, several other countries such as the UK, Ireland, Denmark, Hungary, Bulgaria or Romania have no or very limited objectives. A solar thermal market emerging in those countries, with for example the Renewable Heat Incentive in the UK, could considerably improve our prospects at European level.

Overall, the EU 27 are on track to meet the 2020 target, however, the economic crisis has made the task easier. It was foreseen that the economic growth would result in a much larger increase in energy consumption than the actual figures. In terms of percentage, it is simpler for the member states to increase the share of renewable energy sources.

Our analysis of 20 (out of 27) of the above-mentioned "interim reports" does not reveal a significant increase in the number of European countries implementing measures to encourage the use of solar thermal. Countries with a more comprehensive policy framework in place are the same as before; they are also those with the most ambitious solar thermal objectives. However, there are positive signs for renewable heating and cooling in emerging markets such as Bulgaria or Romania, both listing solar thermal among their policy measures.

NREAP Barometer

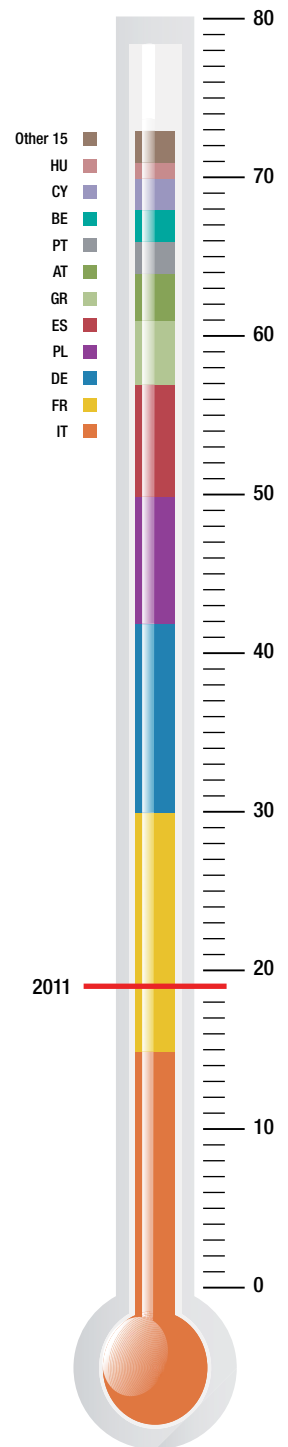


Figure 5: Estimated energy produced in 2011 in comparison with EU 2020 targets for annual solar thermal energy generation in TWh.

Solar heat generation in Europe

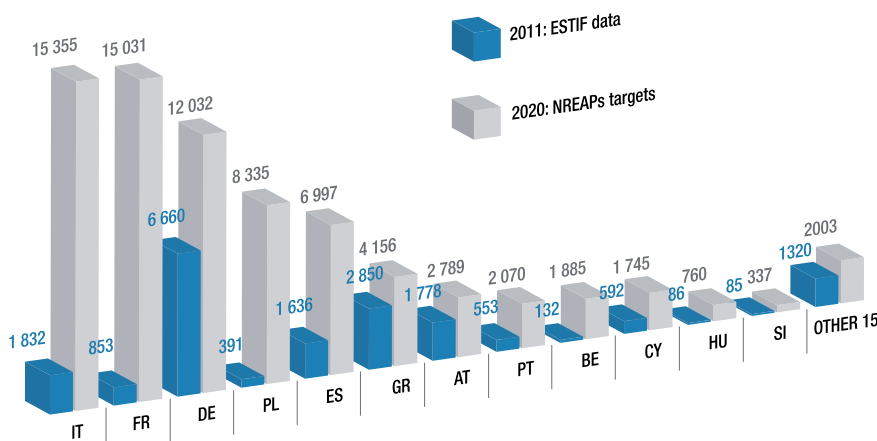


Figure 4: Estimated solar heat generation per country in comparison with national targets for annual heat generation using solar thermal systems by 2020, expressed in GWh.



International Conference on Solar Heating
and Cooling for Buildings and Industry

The **International Energy Agency Solar Heating and Cooling Programme (IEA SHC)** and the **European Solar Thermal Industry Federation (ESTIF)** have decided to combine forces to organise in 2013 what will be one of **the largest Solar Thermal Conferences worldwide.**

With **IEA SHC** and
ESTIF you get the
best of both worlds:

- **Solar Thermal Technology, Innovation and Standardisation**
- **Solar Thermal Markets, Industry and Policy**

The new annual SHC Conference series will take off on 9 July this year in San Francisco, USA, co-located with Intersolar North America. After a very successful ESTEC 2011 in Marseille, France, and ten years after the first edition of ESTEC in Freiburg in 2003, the cooperation between ESTIF and IEA SHC will give a new impetus to the solar thermal conferences in Europe and create a worldwide reference solar thermal event for all audiences:

- **SHC 2013 for Industry:** latest market updates and outlook, as well as state of the art innovations, product development, standards, technical regulations
- **SHC 2013 for Research:** high scientific standards for the presentation of project results, and first hand information on the European research policy framework and funding
- **SHC 2013 for representatives from public authorities, regulators, local authorities, energy agencies, Non Governmental Organisations:** the latest news on best practices, tools, policies and framework for promoting solar thermal
- **SHC 2013 for a global audience** because the European sector is leading the way in solar thermal developments

More information on SHC 2013 from SHC2013@estif.org

