

GERMANY

Status

A brief description of the most important elements in German regulations and certification/subsidy schemes related to solar thermal products is given here below. The description is valid for November 2007.

Regulations

Building Regulation (general)

- There are no special rules/regulations for solar thermal systems/components in the building regulation. The general regulations for buildings and installations shall of course be followed. Some examples of these regulations are listed in the following:
 - Building aspects standardisation in DIN 1055 series (Einwirkungen auf Tragwerke)
 - Roof tightness (Regeln für Dacheindeckungen des deutschen Dachdeckerhandwerks)
 - Protection against lightning
 - regulations related to drinking water quality (e. g. DVGW-Arbeitsblätter)
 - regulations related to the protection of historical monuments
- Requirements related to the energy demand/use of the house: There is the Energieeinsparverordnung (EnEV) (Energy Saving Directive). This directive covers all kinds of energy consumed by the building. The EnEV was revised during the last years and the latest version came into force on October 1st, 2007. The most important new element is, that now energy labels for buildings are required. This change reflects the requirements based on the European directive on energy performance of buildings. It is intended to revise the EnEV again until 2009 in order to reduce the allowed energy consumption by approximately 30 %. In the EnEV benefits from solar thermal are taken into account as well. The standard used for the calculation of the energy efficiency of heating and ventilation systems in buildings is the DIN V 18599.
- With regard to water quality the requirements are given in the “Trinkwasserrichtlinie”
- Renewable heating directive: It is intended to establish a renewable heating directive in whole Germany. Draft versions of this directive are already available for discussion. In the Federal State of Baden-Württemberg (located in the south of Germany) such a directive will come into force by the beginning of next year. This directive requires for new buildings that 20 % of the total heat demand is supplied by renewable energy sources. For existing buildings a share of 10 % is required in case of major changes on the heating system. The requirements of 10 % or 20 % respectively can alternatively be fulfilled by using a much more advanced thermal insulation of the building than required by the EnEV.

Registration

- Registration of a solar thermal systems is not necessary, if the builder is not interested in any subsidies or similar advantages. In case of using subsidies, sometimes a registration is required (depending on the subsidy scheme)

Safety control

- General rules related to this kind of products such as pressure directive, electrical safety etc. (there is an ongoing discussion if the pressure directive has also be applied to the collector)

Subsidies

- There are different subsidy schemes, as well as on national level and on the level of the different federal states. The most attractive subsidy schemes is called “Marktanreizprogramm” and is administrated by BAFA. (An institution of the German Government) Internet: http://www.bafa.de/bafa/de/energie/erneuerbare_energien/index.html.
The amount that is paid per squaremeter collector area depends on the application and requires a certain collector efficiency. At present (November 2007) for domestic hot water systems 60 € are paid per squaremeter collector area but at minimum 412,50 € per solar domestic hot water system. For solar combisystems 105,- €/m² are paid. Additionally a bonus of 750 € is given in case a non-condensing boiler is replaced by a condensing one. Furthermore a so-called innovation bonus up to the threefold of the above mentioned rates per squaremeter collector can be given for very innovative systems such as large-scale solar thermal systems or solar cooling systems.
- The requirement for the payment by BAFA (see above) is an annual solar energy yield of at least 525 kWh/m². Furthermore it is necessary, that the requirements according to the “Blauer Engel” (RAL-UZ 73) have to be fulfilled (Note: It is not required that the collector is marked with the “Blauer Engel”). For collectors tested after 01.01.2007 Solar Keymark certification is already required. From 2009 onwards Solar Keymark certification will be required for all collectors in order to benefit from the BAFA subsidies.
- Contact points for subsidy applications: Internet: http://www.bafa.de/bafa/de/energie/erneuerbare_energien/index.html (see above)

Testing

- Five test institutes are accredited to perform EN testing (of solar thermal products). These institutions are ITW/TZS, ISFH, TÜV Rheinland, FhG-ISE, IZES

Certification

- The following certification schemes are available:
 - 2. Solar Keymark
 - 3. Blauer Engel (RAL UZ 73)
 - 4. Labels from smaller organisations, such as from installers organisation (such as SHK/IHK-Zert)
- Installer certification: not very common

Insurance

- In most cases the solar collector is included in the insurance of the house
- Special insurances against breakage of glass for vacuum tubular collectors (e. g. offered by Paradigma)

Others

- Recommendation/guidelines for installation of solar thermal systems are given in several guidelines published by different associations.
- Large (solar) heating plants have the possibility to sell CO₂ emission allowances
- For hot water tanks a “Blauer Engel” certification scheme is available. Among others this labelling scheme also contains requires related to the maximum allowed heat losses. However, on the market the “Blauer Engel” for stores is without any relevance.

Actions taken in the project period

Certification and labelling

- During the duration of the project the German Team succeeded in changing the BAFA-subsidy scheme in such a way that Solar Keymark certification is considered. For collectors tested after 01.01.2007 Solar Keymark certification is already required. From 2009 onwards Solar Keymark certification will be required for all collectors in order to benefit from the BAFA subsidies.
- The energy labelling of buildings required by the European directive on energy performance of buildings is implemented by means of the new version of the Energieeinsparverordnung (EnEV) (Energy Saving Directive). that came into force on October 1st, 2007.

Regulation

- The procedure for the calculation of the energy performance of buildings was changed from DIN V 4701 to DIN V 18599. The DIN V 18599 allows for a much more realistic calculation since e.g. gains from solar combisystems are taken into account in more detail.

Subsidies

- Subsidies are still predominantly based on squaremeter collector area and not on the overall energy savings of the system. The so-called innovation bonus which allows for up to the threefold of the standard subsidy rates is a nice instrument to promote innovative systems such as large-scale solar thermal systems or solar cooling systems

Testing

- Testing of solar thermal collectors according to the European standard EN 12975 is fully accepted.
- Testing of solar systems according to EN 12976 and ENV 12977 is done, but only a minority of the systems on the German market are system tested.
- Mutual acceptance of test results from accredited labs e. g. for certification or subsidies is implemented in most European counties but not in all. This is especially important with regard to France and Spain.

Certification

- Solar Keymark is the most relevant certification scheme in Germany.

Insurance

- No barriers to trade related to insurance aspects.

R&D

- No barriers to trade related to R&D aspects.

Others

- It is considered as an important achievement of the project that a procedure for the calculation of the energy performance of collectors will be part of the revised version of the Solar Keymark scheme rules.

Remaining trade barriers at the end of the project

Regulation

- The final European standard EN 15316 for calculation the influence of solar thermal systems on the energy performance of the buildings is still not implemented in the national procedures.
- With regard to already existing (e.g. in Baden-Württemberg) and future (e.g. in whole Germany) renewable heating directives it is a disadvantage that the requirements related to the share of renewables can also be fulfilled by means of more advanced thermal insulation of the building

Subsidies

- No barriers to trade related to subsidies.

Testing

- No barriers to trade related to testing.

Certification

Solar Keymark should be THE only German certification scheme.

Insurance

- No barriers to trade related to insurance.

Others

- No other barriers to trade identified

Action needed to overcome remaining trade barriers

Note: Not all topic listed in the following are directly related to trade barriers. However they are relevant for the development of a sustainable and innovative solar thermal market. This is why they are mentioned here

Regulation

- Implementation of European Standard Series EN 15316 for calculating the energy performance of buildings.

Subsidies

- Get inspiration from other countries concerning effective subsidy schemes.

- For standardised system concepts future subsidies should be based on the energy savings of the system.
- Investigate possibilities for implementing a “green heat certificate” scheme allowing also small solar heating systems to sell CO2 emission allowances. This certification should make use of the European standards and the Solar Keymark.
- Subsidies should not be based on the public household. Therefore a tax reduction or similar approaches are preferable. There should be a strategic plan describing the subsidy scheme for the next decade(s) and maybe leading to zero subsidies in the end.

Testing

- Acceptance of test results from accredited labs e. g. with regard to certification or subsidies in France and Spain.
- Getting the Solar Keymark should be less expensive due to a reduction of the effort required for (re)testing and auditing

Certification

- Only **one** national certification scheme based on European Standards and on the Solar Keymark for solar collectors, solar stores and solar thermal systems.
- Getting the Solar Keymark should be less expensive due to a reduction of the effort required for (re)testing and auditing
- It should be avoided to include the work carried out by installers into the product certification process
- CE marking of collectors would give additional advantages

Insurance

- No barriers to trade related to insurance aspects.

R&D

- Establish attractive R&D-program for the further development of solar thermal. Further development of the technology, especially with regard to advanced storage technology such as phase change materials or sorption and advanced controllers.
Further enlargement of the field of applications e. g. with regard to solar cooling and solar process heat

Others

- Participate more actively in the work on the (energy) labelling scheme for (solar) energy appliances based on the eco design directive.
- It might be worth thinking about the aspect of taking the primary energy that is saved by the system during its lifetime into account with regard to subsidies. Such an approach would require methods for the determination of the energy that is embodied in the system as well as for the expected lifetime of the system.