

ProSTO

”Best practice implementation of Solar Thermal Obligation”

<h3>MAPPING THE LOCAL SITUATION FOR DEVELOPING STOs</h3>
--

Filled in by:

Institution.....

Country.....

A Legal and economic framework

1. National/regional /local thermal building regulations and/or building energy certification (please provide only the key messages or the paragraphs concerning ST)

- ENEC is the national regulation for energy efficiency in buildings. It includes the requirement for energy certification of buildings. It accounts also for solar thermal plants.

2. Existing national/regional/ local solar thermal/renewable ordinances

- EWärmeG is the national law requiring the use of renewable energies for heating of **new residential and non-residential** buildings. It explicitly foresees solar thermal as a priority option. (for details see soon in the ProSTO data base)
- EEWärmeG BW is the regional law of the state Baden-Württemberg requiring the use of renewable energies for heating of **new and existing but only residential** buildings. (for details see the ProSTO data base)
- The City of Stuttgart requires high energy saving standards (approx. 40 % better than the national standard) for all building projects, which the city can influence.

3. Please describe the political process for developing a STO has your community all the necessary rights to introduce a STO? Otherwise: at which administrative level would a STO be decided and managed? What and how can be influenced by the community How much time does such a process last?

- A STO needs approval by the city council. Such a proposal needs to pass several rounds of coordination between the involved authorities and approvals by the city council subcommittees. The administrative instrument of the City of Stuttgart for implementing a STO is the so called 'Energieerlass'. It fixes energy requirements for the city's own buildings, but also all building projects which can be influenced by the city by means of:
 - ground selling
 - development plans
 - urban development contracts

4. Did you have tentative start-ups of similar experience (any type of ordinance) in the past?

- E.g. in summer 2008 the City of Stuttgart succeeded in enacting its ordinance on very strict energy efficiency of buildings ordinance.

5. Are there current information and/or training campaigns/activities going on by which STO could be promoted and communicated?

- Continuous and regular information and training campaigns / activities on solar thermal do exist.
- It is felt, that for promoting the STO additional and more specific information and training activities are needed.

6. Is your personnel enough to manage a STO? Would a specific training be needed?

- Personnel for handling a STO is sufficient.
- The need for training would be limited to an introduction of new administrative procedures related to the STO.

7. Would you face problems with large exemption categories, e.g. historical buildings or landscape protected areas?

- Technically motivated exemptions would be very limited for new-built buildings. Exemptions could be introduced for political reasons. For the last ordinances, however, this was rarely the case.

8. Available subsidies at national/local level

- The German Marktanzreizprogramm (MAP) gives contributions for solar heating systems. A higher funding rate is given for solar combisystems and large scale solar heating systems.
- The State of Baden-Württemberg gives subsidies for energy efficiency measures in particular to small and medium enterprises. The program can be used for solar thermal systems.
- The City of Stuttgart gives additional subsidies for integrated energy efficiency measures for private buildings. Solar thermal systems can be realised only in a package of measures.

9. Financing mechanisms (please specify which mechanisms are available and towards whom and towards which types of systems they are targeted)

- The KfW-Bank provides a variety of subsidised loans for private investors and enterprises, which can be used for realising solar thermal systems, preferably within a package of energy efficiency measures.

10. Means for monitoring/controlling the STO

- House builder are obliged to present their calculations according the ENEC calculations. In this occasion the fulfilling of a STO could be checked. ENEC calculations are spot-checked regarding their correctness. On-site inspections are not possible.
- The STO impact can be monitored at a macro (city) level by recording the development of the local solar thermal market data.

B Technical framework

1. Existing standards for solar thermal systems and components

- Systems and components are tested and certified according to CEN standards.
- Solar Keymark is implemented as quality label.
- A national regulation for large solar preheat systems exists with the VDI 6002.

2. Certification and other quality systems for solar thermal products

- see question 1.

3. National/regional /local standards/regulations/guidelines for heating systems design (please mention only the key issues addressing solar thermal systems)

- see question 1.

4. Common systems and fuels for DHW and space heating

- heating oil, natural gas, el. heat pumps, pellets/wood, district heating

5. Existing certification schemes for installers and planners

- Installation quality is maintained by the regular vocational system of the HVAC, roofer and window construction sector.
- Planners are either qualified technicians or engineers.
- There were some attempts of implementing additional certification schemes like the 'Solarteur', however, their success was limited. Today, solar thermal is considered as a 'normal' skill of installers and planners, therefore additional schemes are blocked by the associations. This does not mean that the quality of training on solar thermal within the vocational training cannot be improved.

C Market

Market

1. Installed solar thermal collector capacity at local level

No of plants: 1630
 Capacity: 18.000 kWth
 Capacity per capita: 30 kWth / 1000 inhabitants
 (comparison: EU 31, DE 78, Munich 18, Crailsheim 245)

Plants operated by the City of Stuttgart

No of plants: 6
 Capacity: 284 kWth
 plus 4000 m² of uncovered solar collectors for the public open air pools

2. Technical/economical potential at national/local level

National goals for solar thermal:

2020: 1.6 % of the national heat demand
 long term: 14 % of the national heat demand

3. Voluntary/mandatory national certification systems for installers/planners

see question C.5

4. Are there renewable technologies (apart from solar thermal) which are widely diffused in your city and that can therefore contribute in a renewable heat obligation?

The EEWärmeG BW allows for solar thermal, heat pumps, biooils, biogas, wood. The underlined technologies can be considered as diffused.

5. Medium and large scale solar thermal plants

- presence of companies able to design, install and manage large scale plants
- companies able to supply large amount of collectors

Technology supply capacities are no problem. Qualified and specialized professionals are available, however, there role as multipliers of solar thermal must be consolidated. In particular, there is a significant potential to increase the number of solar active installing enterprises.

Market potential

1. Reachable installed capacity

ESTIF assumes the long term potential of solar thermal to 2.600 kWth of installed capacity per 1000 inhabitants, assuming that solar thermal is used wherever technically reasonable. Downscaled for Stuttgart this leads to a long term potential for the installed capacity of 1.553 MWth.

2. Job creation if such capacity would be reached

A market reaching such capacity approximately offers 5.000 jobs in Stuttgart related directly or indirectly to solar thermal.

3. Percentage of energy demand to be covered if such capacity would be reached

An installed capacity of 1.5 GWth leads to an annual heat production of 1000 GWh covering between 10 and 20 % of the total heat demand.

4. Refurbishment activities: please quantify the refurbishment activities in your region/municipality with as much detail as possible (e.g. refurbishment rate, costs of refurbishment...)

Data for Stuttgart 2006:

No. of residential buildings:	72040
No. of apartments:	294288
New built apartments:	1494
Refurbishment rate:	5.1 %

STO players

1. Which are the stakeholders involved in STOs and what is their attitude towards renewables (e.g. are building companies used to renewables)?

- House owners
- Housing sector
- Installers
- Planners
- Architects
- Energy advisors
- Agencies and service providers
- Sector associations and chambers or the above mentioned groups

The active share is estimated to 5 %. The share of stakeholders with a positive attitude is estimated to 30 %, rapidly growing in this period.

2. Which networks are available?

- Network of the City of Stuttgart including relevant sector associations.
- Network of Stuttgart's energy advice center EBZ mainly linked to the professionals