

## Monitoring of the STO impact

### ***Motivations***

Monitoring the effect of a STO on the solar thermal market at local level is of utmost importance, since:

- it allows to show the main stakeholders (policy makers, solar thermal industry, building companies, final users, etc.) that the STO has a real impact on the solar thermal market;
- it contributes to creating trust in the STO;
- it improves the STO scheme and operation through ideas coming from feedback signals;
- it gives an unambiguous reference to reply to the rumors about the STO not operating efficiently, not being helpful for the society, etc.
- it allows the comparison of the results with the targets set in the preparation phase and the preparation of possible correction measures.

A consistent STO should therefore foresee an exhaustive and constant monitoring of the whole process from the very beginning.

In spite of that, only a few quantifiable results are available from the existing STO, since:

- STO is a relatively new mechanism, therefore several of the analysed ordinances are quite recent;
- most of the analysed STOs do not foresee a monitoring of their effects;

In this sheet, the focus will be on the monitoring of the solar thermal market at local level, while tools 5.2 and 5.3 deal with the internal evaluation procedure and the supervision process.

### ***Key elements for a monitoring plan***

- clear roles of the actors involved in the monitoring process; a possible scheme is: an independent body at broader level (e.g. a regional body: the energy agency or the Regional Administration) is doing the monitoring on behalf of the Local Administration; the independent body reports to the LA, which then checks and publishes the results;
- data cross-checks (checking the results from different information sources and comparing them) are welcome! E.g. by interacting with the solar thermal association and/or with the main local solar thermal supplier; one could check if the figure of the installed m<sup>2</sup> of solar thermal, coming from the statistics on buildings, is confirmed also from the point of view of the equipment suppliers;
- clear and frequent (e.g. every six months) deadlines for presenting the results of the monitoring;
- the publication of the results should be:
  - o easily accessible (on line publication on several websites: Local Administration, energy agency, solar thermal association, etc.);
  - o easy to read and interpret; it is suggested to “translate” the results in terms of the advantages for the different groups of stakeholders.

## ***How to quantify the impact***

Below some of the possible indicators are reported, but any Local Administration could add the indicators that are most important for the specific situation.

### IMPACT ON THE DEVELOPMENT OF THE SOLAR THERMAL SECTOR

- installed solar thermal plants thanks to the STO (m<sup>2</sup>, kWth);
- m<sup>2</sup> of solar thermal installed in public buildings;
- growth of the local and the national ST market thanks to the implementation of the STO (compare the new growth rate with the rates before the STO was operating);
- number of new companies manufacturing solar collectors and/or plants in your Administration/Country;
- number of new jobs in your Administration/Country;
- number of new certificates issued for solar collectors in the local/national market
- number of people trained on solar thermal (designer, installers, etc.);
- effects on non-obliged segments of the solar thermal market, for instance buildings not included in the scope of the STO (e.g. industrial).
- growth of the annual turnover of the solar thermal sector at local level.

### IMPACTS ON THE LOCAL ENERGY SUPPLY

- heat produced by the installed solar thermal systems, quantified through the energy savings (final or primary) and/or the share on the total heat demand or the hot water consumption; the figures could be measured (when metering systems are installed in the plants) or estimated from the m<sup>2</sup> installed;
- CO<sub>2</sub> emissions avoided (calculated from the above parameters).

### ECONOMIC FACTORS

- surplus cost needed to install solar thermal in buildings in terms of % per m<sup>2</sup> living area (or similar);
- savings (€/year): figures for a family, a residential building, other kind of buildings.

## ***Some examples from existing STOs***

*Real figures for surplus cost in new/refurbished buildings:*

- a) Spain: 0.45-0.59% increase per m<sup>2</sup> built;
- b) Catalunya: 0,32-0,41% per m<sup>2</sup> built;
- c) Barcelona: 0.29-0.38% per m<sup>2</sup> built;
- d) Pamplona: 0.53-0.68% per m<sup>2</sup> built;
- e) Baden-Wuttenberg: 20 to 34 € per m<sup>2</sup> living area (<1% of the building cost).

*Installed solar thermal plants thanks to the STO:*

- a) Spain: 4,900,000 m<sup>2</sup> installed by 2010 (estimated);
- b) Barcelona: from 1999 to 2007, the total installed solar thermal surface goes from 1,350 m<sup>2</sup> to 51,436 m<sup>2</sup> (real);
- c) Ireland: 22,165 m<sup>2</sup> of solar thermal will be installed in the Counties involved (estimated).

*Number of people trained on solar thermal (designer, installers, etc.):*

a) Portugal: 1,000 certified installers and dozens of already planned courses.

*Heat produced by the installed solar thermal systems:*

a) Ireland: primary energy saving of about 270,000 MWh/year (estimated);

b) Spain: 1,536,500 kWh/year (estimated);

c) Catalunya: 84,000 kWh/year (estimated);

d) Barcelona: 32,076 MWh/year (summary 2002-2006, estimated).

*CO2 emissions avoided:*

a) Ireland: 27,000 t/year (estimated);

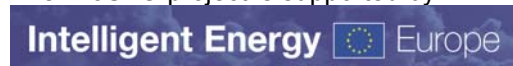
b) Barcelona: 5.640 t/year (summary 2002-2006, estimated).

## ***Imprint***

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See [www.solarordinances.eu](http://www.solarordinances.eu) for more information on solar thermal ordinances and the ProSTO project.

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