Lisbon, 17 March 2010

The importance of Solar Thermal Ordinances in urban planning

Riccardo Battisti, Ambiente Italia

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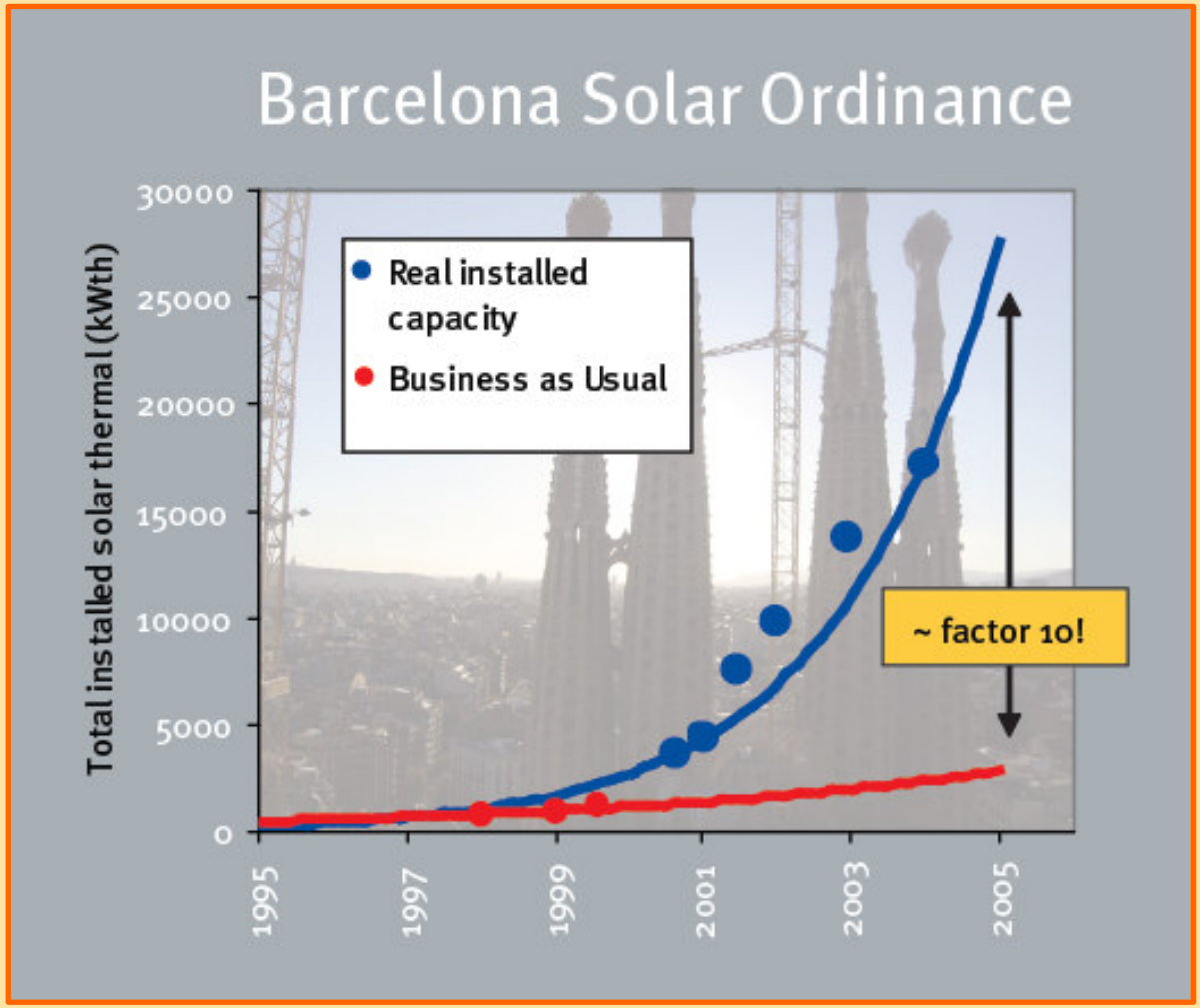
The framework

- Solar Thermal Ordinances or Obligations (STOs) are legal provisions which obliges the use of solar thermal in new and refurbished buildings

The Barcelona "boom"



The framework: the new EC Directive

- 1st: the existing STOs are not always working at their best, therefore needing substantial improvements
- 2nd: several new STOs will be developed in the next years basing on the new EC Directive

The framework: the new EC Directive

This good general framework needs now a remarkable effort in order to be implemented fruitfully at local level

…also since very often Local Authorities do not have the required skills and competencies to efficiently operate STOs

How to support Local Authorities in building up effective SBCs?

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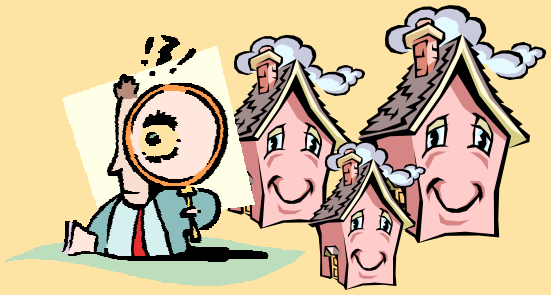
How to support Local Authorities

- ProSTO, “Promoting Solar Thermal Obligations” (Intelligent Energy Europe programme)
- Coordinator: Ambiente Italia (Italy)
- **5 Countries** (IT, DE, SP, PT, RO) and **13 partners** (**scientific/technical institutes and Local Authorities**)



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Building Code of Carugate
Italian national law
Portuguese Regulation
Building code Rome
Regional obligation in Lazio
Energy Standards in Ireland
Código Técnico Spain
Decret Catalunya
Barcelona Solar Ordinance
Pamplona Solar Ordinance

STO Database

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Renewable Heat Law Baden-Württemberg

Federal State of Baden-Württemberg

In November 2007 the parliament of the state of Baden-Württemberg approved its Erneuerbare-Wärme-Gesetz Baden-Württemberg (Renewable Heat Law Baden-Württemberg). Initially it effects only new residential buildings started after 1. April 2008, for which house builders are obliged to cover 20 % of the yearly heat demand with renewable heat sources. Beside the use of solar thermal, geothermal, biomass (including biooil and biogas) and ground coupled heat pumps the law also foresees alternative measures such as improved house insulation, cogenerators or the connection to district heating networks fed by RES or cogenerators. Starting from 1. January 2010 the law will also effect existing residential buildings, which, in the case of a modernisation of the central heating system have to reach a share of renewable heat of 10 % of the yearly heat demand.

Show details »

Building Code of Carugate (Province of Milano)

City of Carugate (Province of Milano)

In 2003, the small (less than 15,000 inhabitants) Municipality of Carugate adopted a new building regulation which promotes energy efficiency in general. In particular, following the model of Barcelona "Solar Ordinance", the use of solar thermal systems to produce at least 50% of the domestic hot water demand was introduced

STO state of the art.pdf - Adobe Reader

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Solar thermal ordinances

State of the art in Europe

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The ProSTO Toolbox

Local Administrations are not alone in the road towards solar thermal...

The ProSTO Toolbox

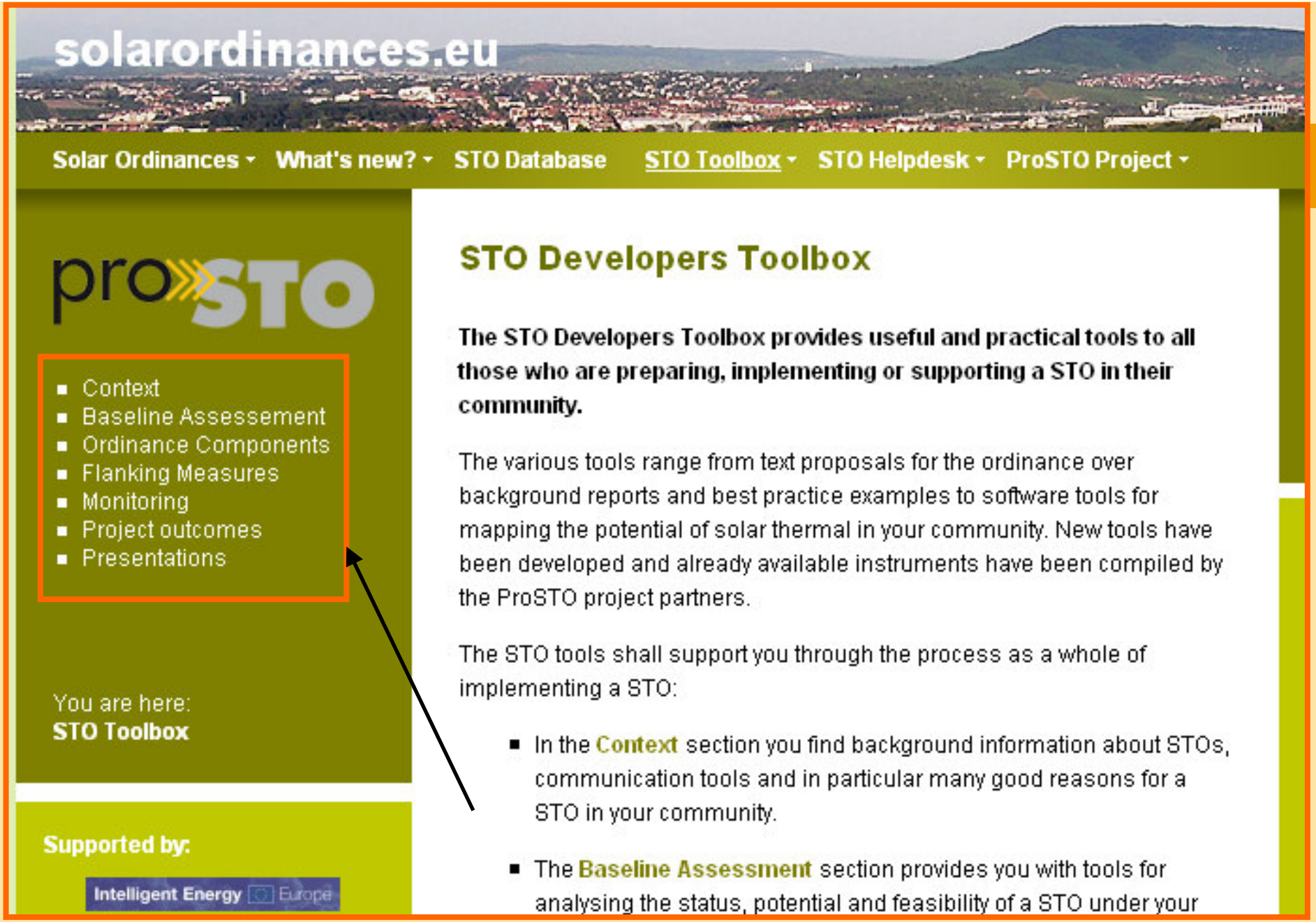
Context
- Brochure
- Guidelines (“blueprint”)

Baseline assessment
- Local situation
- Potential assessment

STO components
- Scope
- Calculation procedures
- Quality requirements
- Architectural integration
- Administrative procedures

Support measures
- Information campaign
- Supporting demand side
- Supporting supply side
- Financing schemes
- Pilot plants

Monitoring
- Monitoring the market
- Evaluating the internal procedure
- Assessing its own STO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STO Developers Toolbox
The STO Developers Toolbox provides useful and practical tools to all those who are preparing, implementing or supporting a STO in their community.
The various tools range from text proposals for the ordinance over background reports and best practice examples to software tools for mapping the potential of solar thermal in your community. New tools have been developed and already available instruments have been compiled by the ProSTO project partners.
The STO tools shall support you through the process as a whole of implementing a STO:
In the Context section you find background information about STOs, communication tools and in particular many good reasons for a STO in your community.
The Baseline Assessment section provides you with tools for analysing the status, potential and feasibility of a STO under your

Best Practice Implementation of Solar Thermal Ordinances

A STO Developer's Blueprint

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3.6. Architectural Integration and Handling of Protected Buildings

By Ambiente Italia

Introduction

The issue of architectural integration of solar collectors in buildings is of main importance in a STO, especially if the municipality, region, or country being object of the STO shows a high number of protected buildings or areas.

A good STO should include both, requirements for architectural integration and clear rules on which buildings could be exempted from the law, due to historical issues. Of course, the requirements for architectural integration for new buildings could be stricter than the ones foreseen for existing ones.

Our Advice

Include simple, verifiable and achievable rules, for instance:

- *Installation on flat roofs or terraces: consider the height of existing stringcourses and set this value as the maximum height of the collector field; the visual impact is therefore small. Collector orientation should be completely free. Nevertheless, preferable directions for optimal visual impact and efficiency can be specified.*
- *Installation on inclined roofs: collectors should have the same slope and orientation as the roof.*

Avoid exemptions which are meaningless, which include too wide categories, which are based on too vague criteria.

Standardise as much as possible the typologies of architectural integration (see Italian GSE guide). Higher levels of integration could be required for protected buildings or areas.

References

Title	Description	Source
GSE Guide for architectural integration	Italian guide by GSE classifying several typologies of architectural integration for PV plants	http://www.gse.it/attivita/ContoEnergiaF/PubblInf/Documents/GuidaIntegrazioneArchitettonica.pdf
Architectural integration of solar thermal systems	This presentation discusses the various aspects and possibilities of architectural integration.	STO Toolbox section of www.solarordinances.eu

Example

Meaningless exemption in Italian law on energy efficiency and use of renewable energies in buildings

Among other provisions, this law requires to cover at least 50 % of the domestic hot water demand in new buildings and refurbishments by renewable energies. This mandatory share lowers to 20 % for buildings located in historical areas. This is a good example of 'meaningless exemptions': If the law states that the visual impact of the solar thermal plant is to be avoided in historical areas, then it does not make sense to allow a smaller solar thermal plant, which is as bad as a larger one. Instead, special requirements for architectural integration could be demanded for in special areas or buildings.

By Lisboa E-Nova

Solar Systems Integration in the protected historical Lisbon Baixa Pombalina Area

Patrimony heritage buildings are presently seen as exemptions to the Portuguese national legislation on buildings energy performance regarding the obligation for installing solar thermal systems in residential buildings: Although one can easily understand the importance of maintaining the historical patrimony, this exemption, often miss appropriated by investors and real state promoters, incentives heritage buildings to not comply with the actual requirements for energy efficiency and comfort in residential buildings. This is clearly an inducement to the desertification and abandon of these areas, a common situation in several European countries. To overcome this tendency it is important to adapt residential building heritage to modern standards, including the possibility to integrate solar technologies

The “hot spot”: preparation of real STOs

Lisboa

Stuttgart

Murcia

Giurgiu

Lazio

Conclusions

- STOs are one of the main issues in the Directive and in the National Renewable Energy Action Plan
- STOs should be adequately prepared and managed in order to be actually effective
- "Steal" our work…use ProSTO tools! Available at: **www.solarordinances.eu**

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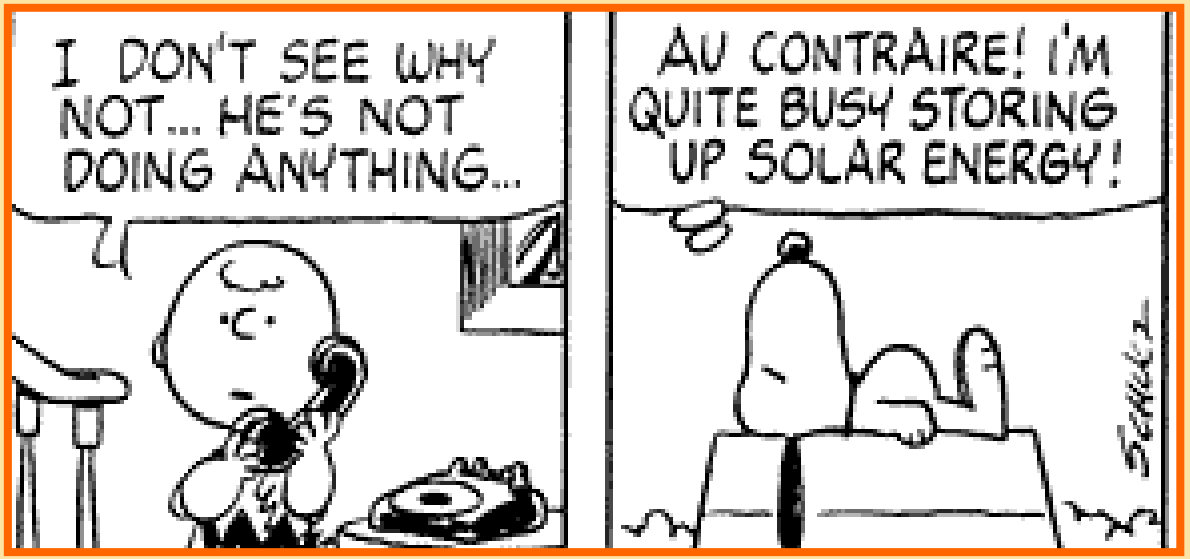

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