

Barcelona Solar Ordinance

Summary

The Barcelona Solar Thermal Ordinance entered into force in August 2000. Its main promoter was the Sustainable City Council. The purpose of this ordinance is to regulate the incorporation of solar thermal energy and its use for the production of hot tap water in the city's buildings. The Solar Ordinance affects new, restored and fully refurbished buildings and those seeking to implement a change of use. This regulation applies to buildings intended for residential, health-care, sports, commercial and industrial use and, generally, any activity involving the existence of kitchens, laundries or other circumstances that lead to a large consumption of hot water, regardless of whether they are public or privately owned.



Ordinance Facts

Ordinance title	Ordenanza Solar Térmica de Barcelona (OST).
Type of ordinance	Solar thermal ordinance
Starting date	Adopted in July 1999 and mandatory since 1 August 2000.
Duration	Unlimited
Geographical area	City of Barcelona.
No. of inhabitants	About 1,6 millions; 101 km ²
Scope	It applies to buildings for residential, health-care, sports, commercial and industrial use and, generally, any activity involving the existence of kitchens, laundries or other circumstances that lead to a consumption of hot water.
Technology priorities	It is mainly a solar thermal regulation. However, other renewable energy technologies are allowed.
Size of the solar heating system required	Minimum solar contribution depending on the demand (>60%), at a temperature of 60°C.
Alternative measures	However, other renewable energy technologies are allowed.
Executing authority	Municipality of Barcelona.
Execution mechanism	Developed in both a bottom-up and a top-down approach: the NGOs' lobby played an important role in the implementation and the initiative of decision makers made it become true. It was a local initiative. The Barcelona Energy Agency is operating the STO. There is a steering committee of thermal installations at national level.

Development and Implementation

Background	The municipal elections in Barcelona resulted in a new coalition, where a Green Party candidate was appointed for the first time in the city's history. The new government was based on a political agreement that included the creation of a new political entity (the Sustainable City Council) and was committed to push programs for the development and diffusion of renewable energies.
Objectives	Technical and innovation development, decrease of expenses on fossil fuels, avoidance of CO ₂ emissions, jobs creation and improvement on

	living quality.
Process	The main initiator was the local energy agency BarnaGEL, whose main objective was to build up cooperation between local actors in order to develop energy projects. The Sustainable City Councilor, Josep Puig, who asked himself a simple question: "Why was solar energy not widely used in Barcelona, despite the available resource, the energy needs and its available surface?"
Timing	The Barcelona Solar Ordinance was approved on July 1999 and entered into force in August 2000.
Quality schemes product	yes
Quality schemes installation	no
Quality schemes other	yes
Flanking measures	Training courses for professionals Solar thermal guide Predimensioning tool "The integral manager", for assisting users in the implementation process
Supervision	Checks in the design phase (by the Energy Agency) Check by a certified installer Random inspections by the Municipality
Sanctioning fees	From 6,000 to 60,000 €, depending on the level of violation.
Costs for implementing	Not available.

Monitoring and Results

Monitoring	The Barcelona Energy Agency monitors the ordinance.
Quantitative results	Summary 2002-2006: 40,095 m2 of total solar thermal installed; 26.8 m2/1.000 inhabitants; 32,076 MWh/year; 5,640 tons CO2/year reduced.
Costs borne by the enduser	0.29-0.38% increase per m2 built.
Effects on other sectors	Several projects have been carried out within Catalonia although it was not mandatory in the whole region (e.g. solar thermal for industrial processes).
Communication	Centralization of the activities within the Barcelona Energy agency. Management scheme ("gestor integral") that clarifies all procedures and do some bureaucratic issues on-line.
Future outlook	The Barcelona Solar Energy Bureau was born, involving major stakeholders.

Lessons Learned

Barriers faced and overcome	<ul style="list-style-type: none"> - Bad and frustrating experiences for solar during the '70s - Lack of experience and knowledge of involved parties - Lack of monitoring and maintenance - Monitoring on the STO - Complexity of bureaucratic procedures - Lack of subsidies or financial incentives
Success factors	The commitment of all the parties involved to make it become true and further improve it.
Potential for improvement	<ul style="list-style-type: none"> - Inclusion of building renovations in obligation - Offering financial incentives - Information for building owners about financial schemes and bureaucratic procedures

Recommendations

Independent entity to involve all main actors in the process.
Clear formulation, effective quality control and exhaustive monitoring
(including lifetime of the installation).

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Downloads and links related to this STO are available under the STO Database under www.solarordinances.eu

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