

Cities combating climate change: Sustainable energy strategies in Barcelona, Spain

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In Barcelona we have recognised that a shift towards sustainable energy systems in our cities is urgently required. The development of renewable energy strategies is clearly a priority in the City of Barcelona. Although they are fully interconnected, we could divide them in the following groups:

Sustainable energy strategies in Barcelona

- **PROMOTION POLICIES**
- **DEMONSTRATION PROJECTS**
- **LEGAL INSTRUMENTS**
- **MANAGEMENT INSTRUMENTS**
- **INTEGRATION OF SUSTAINABLE ENERGY MEASURES IN URBAN DEVELOPMENTS**

For each of these categories we already count on examples that have shown that proactive policies in cities can substantially increase the share of Renewable Energy Sources (RES).

The strategies named **promotion policies and demonstration projects** have been present in the city since years, with different examples such as the installation of solar systems in schools, sports centres (solar thermal installation in the Olympics Swimming Pool) or in some other public buildings (solar photovoltaic installation in the Town Hall building).

Concerning **legal instruments**, in Barcelona we are very proud to be the first European city to have a *Solar thermal ordinance*. According to this bylaw all new buildings and buildings undergoing major refurbishment are obligated to use solar energy to supply 60% of their running hot water requirements. This solar ordinance was approved by the Barcelona City Council in July 1999 and entered into force in August 2000. This new policy has brought Barcelona to multiply per more than 10 the surface of solar thermal square metres (licenses requested), moving from 1,1 sqm /1.000 inhabitants (in 2000) to 13 sqm/1.000 inhabitants [as of march 2004, the licenses requested for the installation of solar panels made up a total of: 19.543 sqm of solar panels (before: 1650 sqm)]. We are happy to see these results and specially to see that more than 20 Spanish cities are now “replicating” this initiative taking Barcelona as a model.

The Barcelona Energy Improvement Plan (PMEB), a 10 year plan adopted in 2002, and the Barcelona Energy Agency, are two major **management instruments** that ensure the commitment of the City to further promote these energy measures in a planned and structured manner. The Barcelona Energy Improvement Plan proposes a series of measures and 55 projects for local action up to the year 2010, these being centred on energy savings and in the use of renewable energies.

The municipal action promoting a sustainable energy city also works towards the integration of **sustainable energy measures in urban developments**, an example of this integration are the sustainable energy measures in the Forum Barcelona 2004 area. The major Sustainable Energy measures in the Forum 2004 area are the following: -

- *Urban solar FV power station (10.700 sqm, 1,3 MWpic)*
- *District heating & cooling system, and*
- *Energy efficient buildings.*