



Smart Cities 1: Maximising national policy frameworks for regional/local benefit

Success of Barcelona Solar Thermal Ordinance

IEA-RSA Bilateral Event

Electricity Transmission and Distribution, Smart Cities

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Prof. Dr. Luisa F. Cabeza
University of Lleida

Spanish Representative
Energy Storage Implementing Agreement

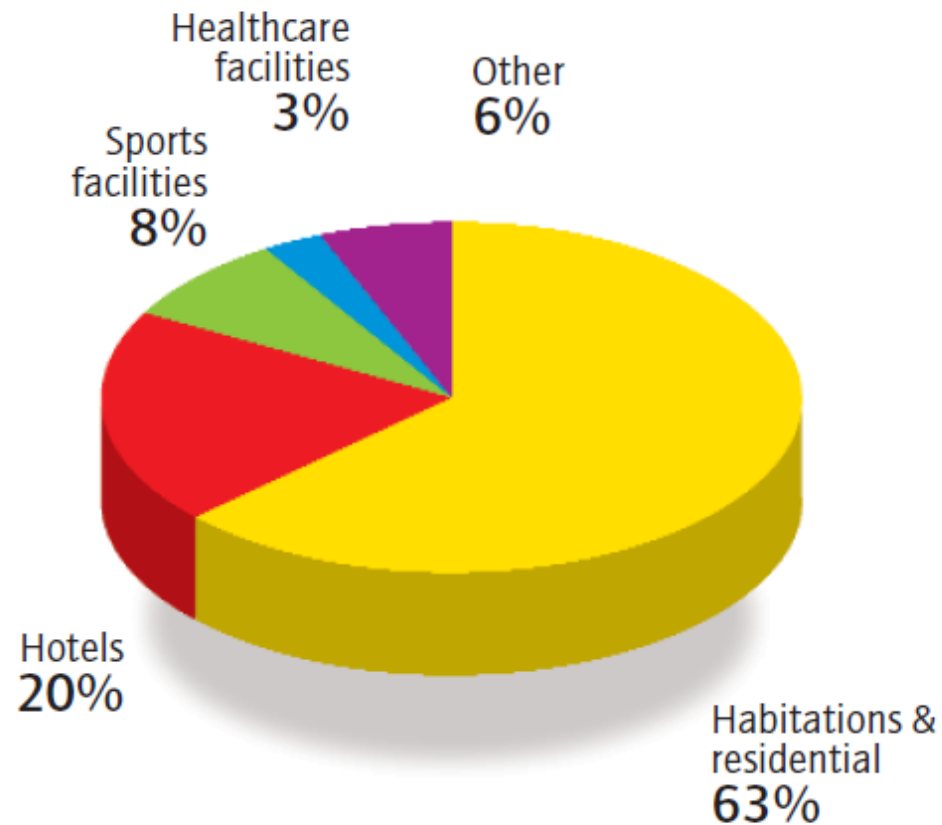
- Spanish Renewable Energy Plan 2005-2010



- Barcelona's Solar Thermal Ordinance (1999)
 - The first regulation of this type to be adopted in a large European city
 - Regulates the introduction of active systems to capture and use low-temperature solar energy (solar thermal collectors) in order to produce domestic hot water in buildings and constructions public or private)

Public and Private Buildings

Solar thermal collector area under the obligation of the Ordinance, by use of the buildings (2004)



Buildings and surfaces covered by the Ordinance (December 2005)

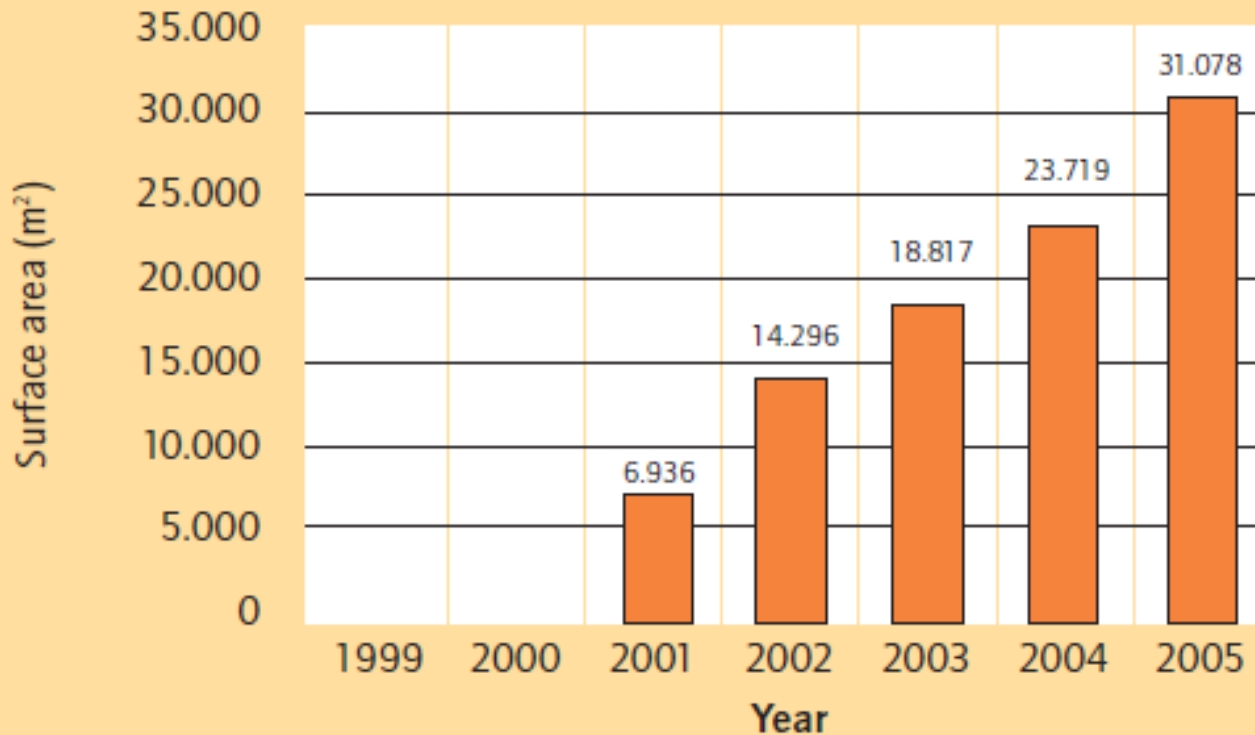
Indicator	Value
Number of Buildings	428
Solar thermal collectors capacity approved	31.050 m ²
Ratio area/population	20,75 m ² /1.000 h
Increase in relation to the solar thermal capacity in operation before the Ordinance entered in force	1.782%
Share of new buildings affected and covered by the Ordinance	25%

Potential environmental and economic advantages (December 2005)

Indicator	Value
Estimated energy production	24.840 MWh/year
Estimated CO ₂ emissions saved	4.368 ton/CO ₂ eq.
Estimated economic savings	1.376.150 €

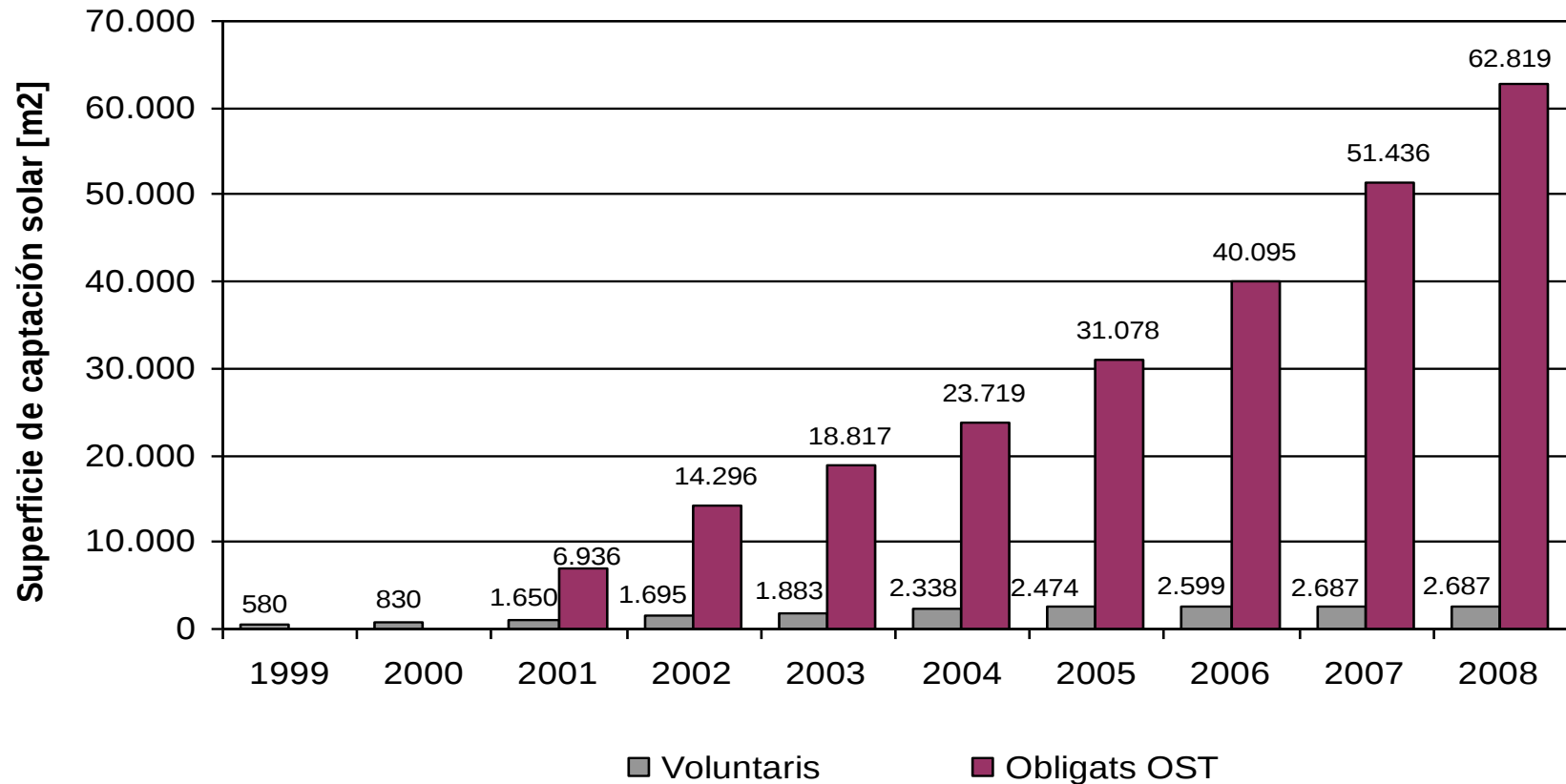
- 20,75 m² surface installed per 1,000 inhabitants
- Nearly 4,000 MWh produced/year
- Savings of EUR 220,000
- Reduced 700 tonnes of CO₂ equivalent

Evolution of the solar thermal collector area under the obligation of the Ordinance (1999-2005)



Evolution of Capacity

Superfície de captació solar total [m2]

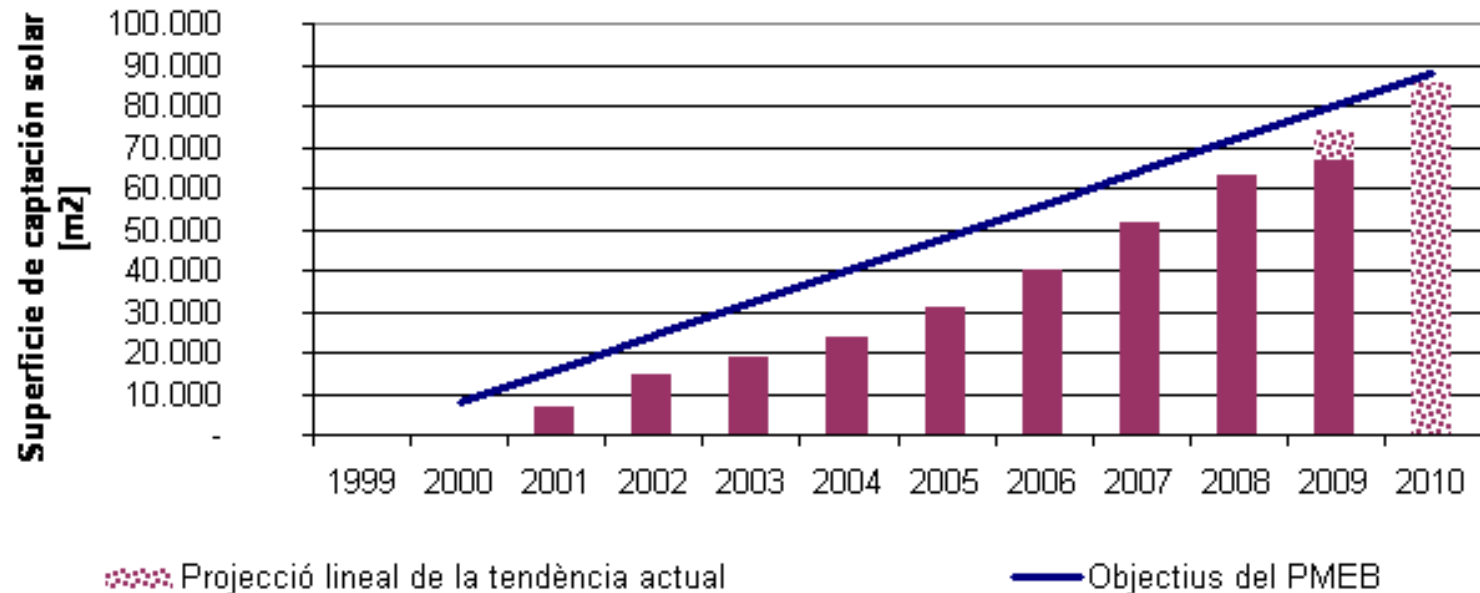




Barcelona Energy Improvement Plan

- By 2010, 96,300 m² of solar collectors installed in the city
- Estimated thermal generation of 778 GWh/year (280,000 GJ/year)

Comparativa entre la projecció lineal de la tendència actual, els objectius del PMEB-OST i l'escenari de la nova OST.



Application Solar Thermal Ordinance 2008: 62.819 m²
50.255 MWh/yr

Objective PMEB for OST: 88.015 m²
70.412 MWh/yr

- Used by other municipalities as a basis to draft their own regulations
- Today 39 municipalities in Catalonia and 26 in the rest of Spain have followed Barcelona's example and have now adopted solar ordinances
- Growth of renewables in national energy mix

Local Success = National Success



- National policy made municipal ordinance possible
- Careful drafting of ordinance facilitated implementation
- Active municipal actors made it happen
- Sharing success in other cities (Spain and ROW)
- Local success has increased renewables share in national energy mix

Thank you for your attention

lcabeza@diei.udl.cat