

Building Code of Carugate (Milano)

Summary

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 as a mandatory measure for new buildings.



Ordinance Facts

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| Ordinance title | City Building Code of Carugate |
| Type of ordinance | Solar thermal ordinance |
| Starting date | Nov. - Dec. 2003 |
| Duration | Still in operation - No closing foreseen |
| Geographical area | Municipality of Carugate |
| No. of inhabitants | About 14,000; 5 km ² |
| Scope | Municipality level; only new buildings; exemptions: historical areas |
| Technology priorities | Facultative and mandatory measures are foreseen; solar thermal is mandatory |
| Size of the solar heating system required | Facultative and mandatory measures are foreseen; solar thermal is mandatory |
| Alternative measures | None |
| Executing authority | Municipality of Carugate |
| Execution mechanism | The new measures were embedded in the local general Building Code |

Development and Implementation

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| Background | <p>This regulation was promoted also thanks to the following background elements:</p> <ul style="list-style-type: none"> - EU Directive on Energy Efficiency in Buildings; - Barcelona “Solar Ordinance”; - raising interest on the side of the Regions (and, more in general, of the Local Bodies) for the promotion of sustainable buildings. |
| Objectives | <ul style="list-style-type: none"> - to Introduce energy efficiency measures and renewable energy technologies as standard and mandatory solutions for new buildings. - to act as a good practice, stimulating the replicaton in other Municipalities |
| Process | <ul style="list-style-type: none"> - the Carugate Municipality promoted this ordinance; - “Rete Punti Energia” (association of energy agencies of Region Lombardia) gave the Municipality the necessary technical support; - the building sector (designers, builders, etc.) was involved from the beginning; - the Province of Milano, which is trying to extend this kind of building regulation to other Municipalities. |

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| Timing | The new building regulation was approved on 24/11/2003 (valid from 24/12/2003). No closing is foreseen, unless it will be modified by an updated version of the local building regulation. |
| Quality schemes product | no |
| Quality schemes installation | no |
| Quality schemes other | no |
| Flanking measures | <ul style="list-style-type: none"> - promotion in local fairs and schools - pilot plant in the Municipality buildings - low interest loan from a local bank - trainings for designers and building companies |
| Supervision | <ul style="list-style-type: none"> - first check (project phase): the designer fill in a check list with the parameters of the solar thermal plant - second check (building phase): when solar panels are installed |
| Sanctioning fees | Not foreseen |
| Costs for implementing | Improved skills needed by the technical personnel to evaluate building projects. |

Monitoring and Results

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| Monitoring | The Municipality of Carugate, together with "Rete Punti Energia", is monitoring the outcome of the regulation. |
| Quantitative results | The regulation brought to a total (installed or approved) of about 485 m ² by 2006. The average per capita is 1 m ² per 28 inhabitants, while the Italian average is 1 m ² per about 1,400 inhabitants. |
| Costs borne by the enduser | For solar thermal, the extra-cost per m ² of building is 0.5%, with a payback time of 6 years. |
| Effects on other sectors | No information available. |
| Communication | <ul style="list-style-type: none"> - good and wide communication actions, including final users and schools - communication of the figures on building extra-costs and rate of return of the investment |
| Future outlook | No information available. |

Lessons Learned

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| Barriers faced and overcome | The involvement of the main actors from the earliest stage of the process allowed to overcome external resistances to the ordinance development. |
| Success factors | <ul style="list-style-type: none"> - Wide communication actions (final users and schools); communication on building extra-costs figures - The involvement of a local bank to provide a low interest loan - The bottom-up approach |
| Potential for improvement | <ul style="list-style-type: none"> - Include renovations in the scope of the law - Include quality requirements for the solar thermal plants - Promote more strongly the availability of a low interest loan |
| Recommendations | Such a regulation should have a comprehensive approach, taking into account most of the possible measures to increase the energy efficiency of the buildings. |

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