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Building for a climate neutral future

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Approximately 10 million inhabitants; 33.900 euro GDP pro-capita; 25 million TEP (ton of oil equivalent) of energy consumption per annum (of which about 30% in the residential sector), a contribution of renewable energy equal to 7,5% of total needs. A housing stock of nearly 8 million housing units (of which 4,700,000 residential houses) mostly built (56%) during the Italian economic boom from 1946 to 1981 but with poor energy performances. Over 120,000 current construction firms with 370,000 employees and a turnover of nearly EUR 23 billion (year 2010), with a sharp decline compared to 2006 (-44%). These are some key data useful to frame the construction sector in Lombardy and to introduce the current energy policies, objectives and future plans.

Considering the objectives of European and national energy policies (20-20-20), in 2007 Lombardy region provided with its own "Action Plan for Energy" and in 2010 with the "Action Plan for a Sustainable Lombardy: 2020 region of high efficiency and low carbon intensity. " The goal for 2020 is to reduce consumption of about 3.5 million TOE and approximately 8 million tonnes of CO2 equivalent. The sector most involved will be the residential one (-49% of emissions). The total value of planned investments exceeds 5 billion euros.

From 2000 until 2007, Lombardy Region has gradually addressed the issue of energy efficiency in buildings through a regional regulatory framework extremely valuable and innovative, anticipating, along with Trentino Alto Adige, the application of European directives compared with the rest of the national territory. The results of this change of rules in building new buildings and / or acting on the existing building, has significantly affected the entire market with: a marked improvement in energy performance of buildings (both for heating and cooling); a rationalization of consumption and a clear decrease in emissions; the creation of new businesses, new jobs and high professionalism. In order to promote energy efficiency, Lombardy Region has introduced interesting tools for technical support, available also on telematic platforms, as CENED (system of energy certification of buildings) (2007) and CURIT (Regional Cadastre Act of thermal plants) (2010).

Even if excellent business models are now present in the region and several significant examples of buildings in class A and A + (both private and public) have been made, there is still the problem to adopt and to spread the best planning and executive technologies throughout the whole sector of the "HOUSE" chain (designers, builders, installers, testers and managers).

Among the many ongoing projects referring to the Valtellina area (pilot area of ALPSTAR project in Lombardy), there is **RACEM** project (Artisan Network for Efficient Buildings in Mountain), developed by the Associations of the province of Sondrio in collaboration with the Politecnico di Milano. 32 companies involved in the definition of a **"protocol and a quality label for sustainable production of buildings and plants."** The project, in line with a "holistic" philosophy of building, introduces a strong "incremental innovation", defining and implementing the currently available best practices about planning and management, with particular attention to design according to the cycle of life, the land use, the provenance and use of materials (LCA), the environmental impact, generation from renewable energy, building management and the final recycling.

The project aims to encourage the widest dissemination of the **"Protocol RACEM"** in whole Valtellina Valley and in other territorial realities in Lombardy Region.