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RENAISSANCE LYON
**WP 1.1: Energy Policy, Planning,
 Research and Development**
Final report

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 **WP1.1 : Objectives**  **RENAISSANCE
- LYON -
FRANCE**

- ✚ To exploit the unique opportunities for innovation in terms of **political policy and planning** presented by a demonstration project of this scale.
- ✚ To transform the benefits of demonstration experience into municipal policy, regulation and practice, thus **ensuring immediate replication of the results**
- ✚ To make the **lessons learnt available to others** via development of policy guidance notes in thus facilitating mainstream adoption and use of this innovation.

 RENAISSANCE : a CONCERTO project financed by the European Commission on the six framework programme 1

- ✚ **Analysis of the local, regional, national and EU energy and planning policy** to identify barriers affecting RES and RUE as a basis to develop solutions to be tested.
- ✚ Development of **specific proposals** for the public and private sectors regarding improvements in energy and planning policy including pilot applications within the project.
- ✚ Define changes to planning and policy structures required to enhance energy performance and uptake of RES.
- ✚ Develop planning and policy guidance for RUE / RES for future action.



- ✚ **Table of contents:**
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+ European context

- Directive 93/76/EEC: building certification
- White Paper on Renewable Energy Sources (1998): 12% of RES in EC (22.1 % for electricity)
- Directive 2001/77/EC: promotion of RES for electricity
- Directive 2002/91/EC on buildings energy performance: minimum energy requirements for new and large retrofitted buildings + energy certification
- Directive 2003/96/EC: energy taxation framework
- Green Paper on energy efficiency (2005): Member States should encourage savings
- Directive 2006/32/EC: end-use and service-based energy efficiency promotion.
- Energy Efficiency Action Plan (2006): integration of EE in all EC policies
- Intelligent Energy Europe II (2007–2013): support instruments and models



+ National contexts

+ France

- **Building-related energy regulation historical context**
 - ▶ 1946: electricity & gas Nationalisation Law, creation of monopolistic State-owned companies EDF and GDF
 - ▶ 1974: First energy regulation for new buildings (minimum insulation), up-dated and extended to non-residential buildings in 1988 (RT 1988)
 - ▶ 2000: RT 2000 deriving from "Air-quality and Rational Use of Energy Law", establishing calculation methods and imposing 20% decrease in comparison with RT 1988 (40% for non-residential buildings)
 - ▶ 2006: RT 2005 with a 15% decrease compared to RT 2000, an extension to existing buildings, the introduction of high performance labels and a 15% decrease planned each 5 years (2010, 2015 and 2020)
- **Energy efficiency and renewable energy policies main milestones**
 - ▶ 2000: "Law for the modernisation of public electricity services" : support mechanisms for renewable electricity sources (call for tenders and feed-in-tariffs)
 - ▶ 2004: National Climate Action Plan (Plan Climat 2004) : 50% tax credit for individual low-energy and renewable energy equipments.
 - ▶ 2005: Program and Orientation Law on Energy Policy: national commitment to RUE and RES, reinforcing existing measures (building thermal regulation, tax-credits or feed-in-tariffs), establishing new measures "white certificates" or guarantee of origin for RES, and creating sectorial Plans.



National contexts

France (2)

Main developments since the launch of the Concerto project

- ▶ 2007: Start of the first phase of “Grenelle de l’Environnement” consultation process, including energy and climate related Working Group, ending in October 2007 with a series of “Conclusive Round Tables” setting up recommendations, some of them explicitly influenced by Concerto-Renaissance way of doing.
- ▶ 2008: continuation of the “Grenelle” process with 34 specific “Operational Committees”, among which 6 concerning urban planning, energy in buildings and renewable energy sources, preparing detailed reports of measures to be taken by law or regulation.



National contexts

Spain

Building-related energy regulation historical context

- ▶ 1979: Royal Decree 2.429/79 : first Spanish regulation of thermal conditions in buildings, including global thermal coefficient, and maximum limits according to climatic zones.
- ▶ 1980: Royal Decree 1618/1980 on Regulation of thermal, cooling and hot water Facilities, with aim to rationalise energy consumption.
- ▶ 1998: Royal Decree 1751/1998 on Thermal Facilities of Buildings Regulation and its Additional Technical Instructions for heating, cooling and sanitary hot water
- ▶ 1999: Law 38/1999 on building regulation: obligations and responsibilities of parties involved in building process, and paving the way for a new law on safety and habitability requirements

Energy efficiency and renewable energy policies main milestones

- ▶ 2004: Energy Efficiency and Savings Strategy in Spain (2004–2012)
- ▶ 2005: Energy Action Plan 2005–2007 target of 12 Mtoe of primary energy savings, i.e. 8.5% of primary energy consumption and 20% of energy imports in 2004 and a reduction in CO₂ emissions of 32.5m tonnes.
- ▶ 2005: Renewable Energy Plan 2005–2010, with the objective 12% of total primary energy consumption from RES 2010, including financial guidelines and innovative research.



+ National contexts

+ Spain (2)

➤ Main developments since the launch of the Concerto project

- ▶ 2006: Royal Decree 314/2006 on Building Technical Code : basic safety and habitability requirements for buildings and guidelines (“prescriptive” for insulation and solar protection, and “performance-related” for energy-saving objectives), minimum contributions from solar thermal and photovoltaic energy, requirements related to lighting, with the aim to achieve a 25% reduction of heating demand.
- ▶ 2007: Royal Decree 47/2007 on Energy Certification: basic national procedure subject to adaptation at regional level for energy certification of new buildings, measuring energy consumption and CO2 emissions and passing on this information to buyers and users via an energy tag.
- ▶ 2007: Spanish Climate Change and Clean Energy Strategy, Horizon 2007–2012–2020, with various measures concerning buildings included in the “Clean Energy” Chapter.



+ Regional and local contexts

+ FRANCE:

- **Rhône-Alpes Regional Council** : creation of a Regional Energy Agency (1975), support policy to solar and wood energy (1992), local energy information centres network (2000), comprehensive Regional Energy Action Plan (2004), Low-energy Social Housing Plan (2007)
- **Grand Lyon:**
 - ▶ Sustainable development policies: Urban Ecology Charter (1992), Agenda 21 (2005), Air Quality Protection Plan (2007), Climate Local Action Plan (2007)
 - ▶ Energy-related policy: FP5 Restart program (1997-2001), SAVE Local Energy Agency (2000), Grand Lyon-owned buildings energy audit (2003), Interreg III C AMICA (2004), Renewable energy potential in the Grand-Lyon area (2007)
 - ▶ Sustainable urban planning and construction: experimental Housing Improvement Scheduled Plan in Caluire-et-Cuire city (2001), adoption of Environmental Approach of Urban Planning as operational tool (2003), enforcement of the Sustainable Housing Reference Code (2005) and of the Sustainable Office Code (2007)



Regional and local contexts

Spain

➤ **Aragón autonomous Community:** first version of Energy Plan in 1994, now replaced by a new Kyoto Protocol related Plan 2005 – 2012 Plan; “Plan for electric domestic appliances renewal” established in 2008; approbation in October 2008 of the Aragon Strategy for Climate Change and Clean Energy) Horizon 2007-2012-2020

➤ **Zaragoza**

- ▶ Previous experience of bioclimatic urban planning in Barrio Goya (THERMIE 1995)
- ▶ Strategic Diagnosis Plan for Saragossa (Diagnóstico Plan Estratégico de Zaragoza) published in 1996 as first follow-up of the 1994 Aragon Energy Plan.
- ▶ Autonomous Community Order (13/11/2006): subsidies for energy savings and diversification, rational use of energy, use of local and renewable resources and energy infrastructures.
- ▶ Municipal Order on energy eco-efficiency and the use of renewable energies in buildings and their facilities



Experience sharing

From Spain to France:

- Methods used in Picarral for involving residents in the urban renewal process since early stages
- Design and implementation of the sophisticated technical and social monitoring system in Valdespartera
- In depth exchanges with Zaragoza urban planning City Department

From France to Spain:

- Urban planning approach: functional and social diversity, disadvantaged districts up-grade, private/public partnerships, centralised monitoring and assessment
- Workers professional training scheme facilitating the introduction of new technologies and know-how needed by low-energy and renewable energy design and techniques



+ Benefits of Renaissance program for local and national public policies

+ Lyon

- Enforcement and improvement of Grand Lyon local energy performance standards for new residential and office buildings
- Preparation of a local action plan focused on low-energy renovation of privately-owned housing co-ownerships in Ste Blandine neighbour district
- Development and enforcement at regional level (Rhône-Alpes) of a massive low-energy new social housing support policy, including economic monitoring, based on Renaissance outputs
- Example-based highly positive influence on the on-going political decisions process at national level (Grenelle de l'environnement) :



+ Benefits of Renaissance program for local and national public policies

+ Zaragoza

- Official approbation at national level of the Master Plan used in Valdespartera as pioneering development and advisable for replication.
- Numerous amendments of Municipal orders favouring low-energy renovation and introduction of renewable energy sources
- A series of agreements between Ministry for Housing, the Government of Aragon and the City of Zaragoza to develop a massive renovation program for low-income and precarious families in Zaragoza, based on the pilot experience led in Picarral.
- Influence of Zaragoza experience in Valdespartera and Picarral on national policy improvements.



+ Resistance and obstacles to change

+ Lyon

➤ Social / cultural barriers

- ▶ General reluctance to innovation, unequal and difficult to measure but actual
- ▶ Historical lack of cooperation between architects and engineers
- ▶ Distorted image of constraints on architecture due to energy efficiency

➤ Legal / administrative barriers

- ▶ Incorrect calculation methodology of energy needs in Thermal Regulation
- ▶ Numerous regulations and rules inadapted to PV technology

➤ Economic barriers

- ▶ Difficulties to appreciate additional cost due to energy efficiency design



+ Resistance and obstacles to change

+ Zaragoza

➤ Social / cultural barriers

- ▶ Demotivated society, lack of communication, reluctance to change, poor awareness on environmental issues

➤ Legal barriers

- ▶ Ancient laws inadapted to new situation, such as the "Horizontal ownership Law"
- ▶ Planning instruments inadapted to low-energy renovation, need to apply compulsory standards like in new buildings
- ▶ Specific difficulties for installing lifts on the façade outside (i.e. in public space)

➤ Economic barriers

- ▶ Price regulation system in social housing that makes low-energy-related over-investments hardly possible
- ▶ Economic crisis dissuading investors to invest, particularly in the building sector



+ Recommendations to French national authorities

➤ Cultural/social :

- ▶ To develop awareness raising and education campaign toward general public
- ▶ To open architecture courses to technical issues given by engineers
- ▶ To promote co-operation between architects and engineers in design teams

➤ Legal

- ▶ To embrace and apply with the highest fidelity those major recommendations expressed in the final report of the Grenelle de l'Environnement Working Group on energy and climate related to low-energy in new and renovated buildings, including up-date of the regulatory calculation methodology.
- ▶ To adopt a range of consistent measures for simplification and clarification of solar energy legal and administrative framework, especially BIPV

➤ Economics

- ▶ To accelerate the massive implementation of low-energy design and techniques so as to reduce the additional materials and labour costs associated with their innovative character



+ Recommendations to Spanish national authorities

➤ Cultural/social :

- ▶ To favour involvement of local populations in renovation programs by supporting local active agents, offering local people employment in renovation works and corresponding training courses
- ▶ To develop a true "Business culture" of major renovation works in disadvantaged districts, opposite to the current poor consideration for such programs

➤ Legal

- ▶ To improve methodology for building energy certification system and to extend it to existing homes
- ▶ To revise the Construction Energy Code on energy optimisation of building design and ventilation systems
- ▶ To revise ancient laws (Horizontal Ownership Law, Urban Development Legislation & Urban Renting Law)
- ▶ To allow Local Authorities imposing renovation works in some particular districts (deteriorated, historical, ...)
- ▶ To take model from the French approach of Urban Renewal (social, economic, environmental), including creation of dedicated Regional Agencies.



+ Recommendations to Spanish national authorities (2)

➤ Economics

- ▶ To modify tax regime for low-energy renovation works expenses (reduced VAT rate) and for related grants received (exemption of tax)

- ▶ To create and develop a range of publicly and privately-funded financing tools available for low-energy renovation (soft loans, tax exemptions, subsidies, ...) at national/regional/local levels

- ▶ To coordinate energy efficiency and housing rehabilitation programs between Ministry for Industry and Ministry for Housing

- ▶ To support the creation of Community-based Owners associations



- + Final report not so ambitious as compared to objectives
- + However :
 - Many lessons learnt from each other
 - Evidence of the need to accelerate changes of regulation
 - Set of recommendations made available
 - Demonstration programs strongly influential on policy-makers

