

Integrating ambitious green targets in city planning: Bolzano in the project SINFONIA

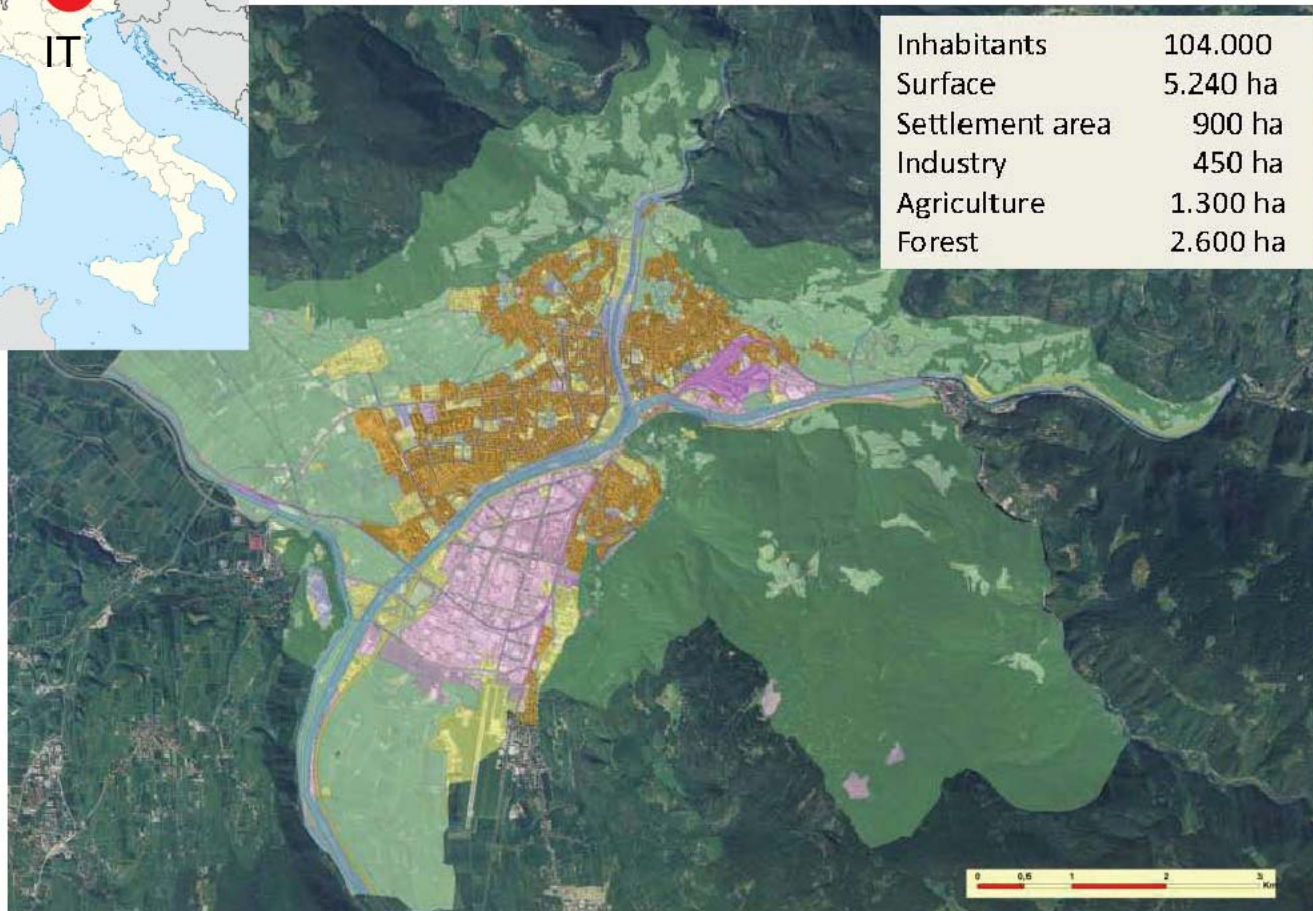
REFORM, Salzburg - 02/09/15

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Bolzano



Context

- Existing framework of energy and mobility plans
- Sustainable Energy Action Plan (2011-2014)
- Mobility plan and Master plan of the city
- Several European projects activated and related to:
 - energy efficiency in buildings and stakeholder involvement (EPOURBAN, 3ENcult, BRICKER, COMonENERGY);
 - Reduction of greenhouse gas emissions from transport in urban areas (**REZIPE**);
 - ICT and sustainable mobility for environmental data management (INTEGREEN);
- Energy planning office in the Municipality



Source: Forumcommunity, Gem. Bozen, Bilfinger

EURAC
research

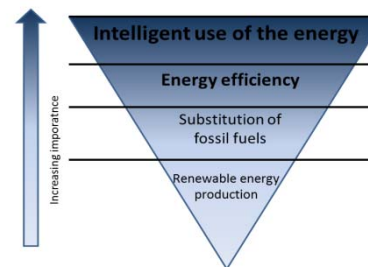
Piano d'Azione per l'Energia Sostenibile di Bolzano
(PAES)



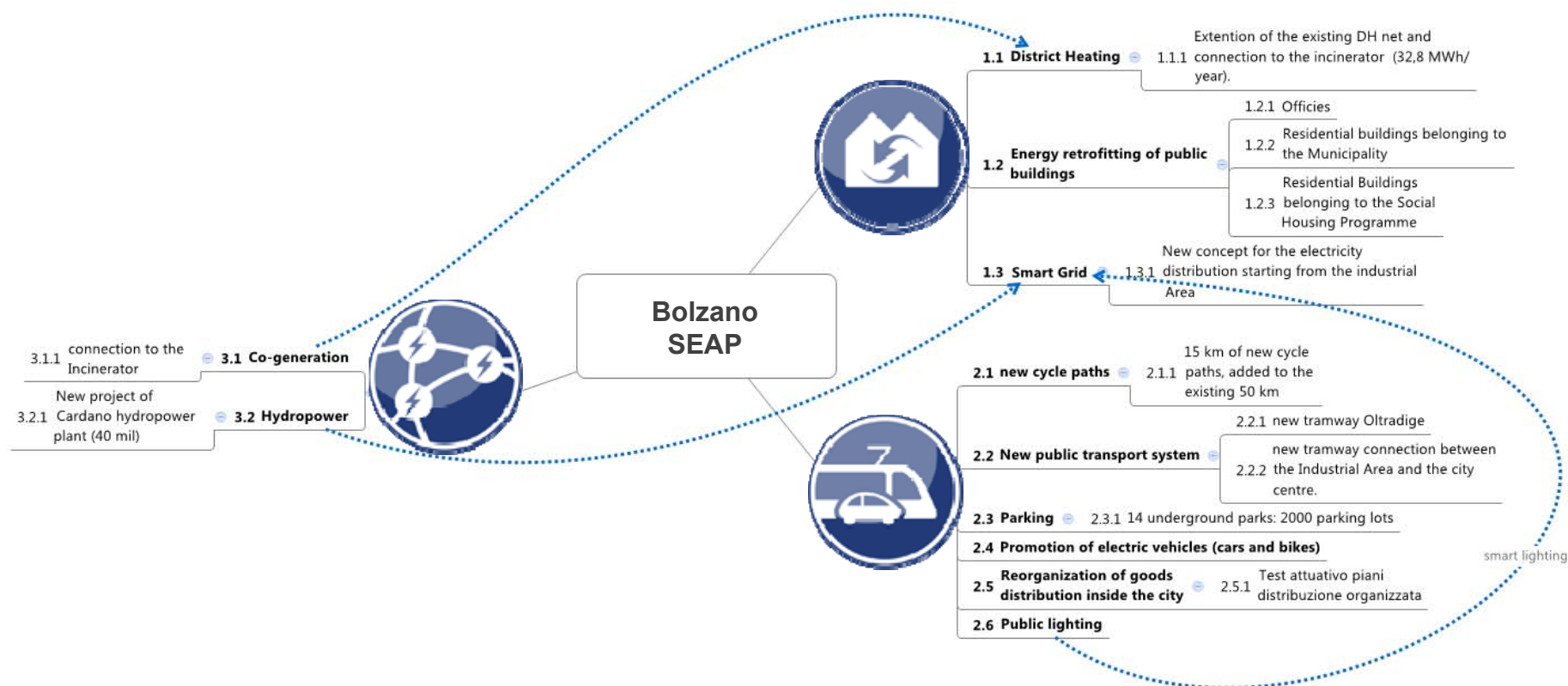
Istituto per le Energie Rinnovabili dell'EURAC

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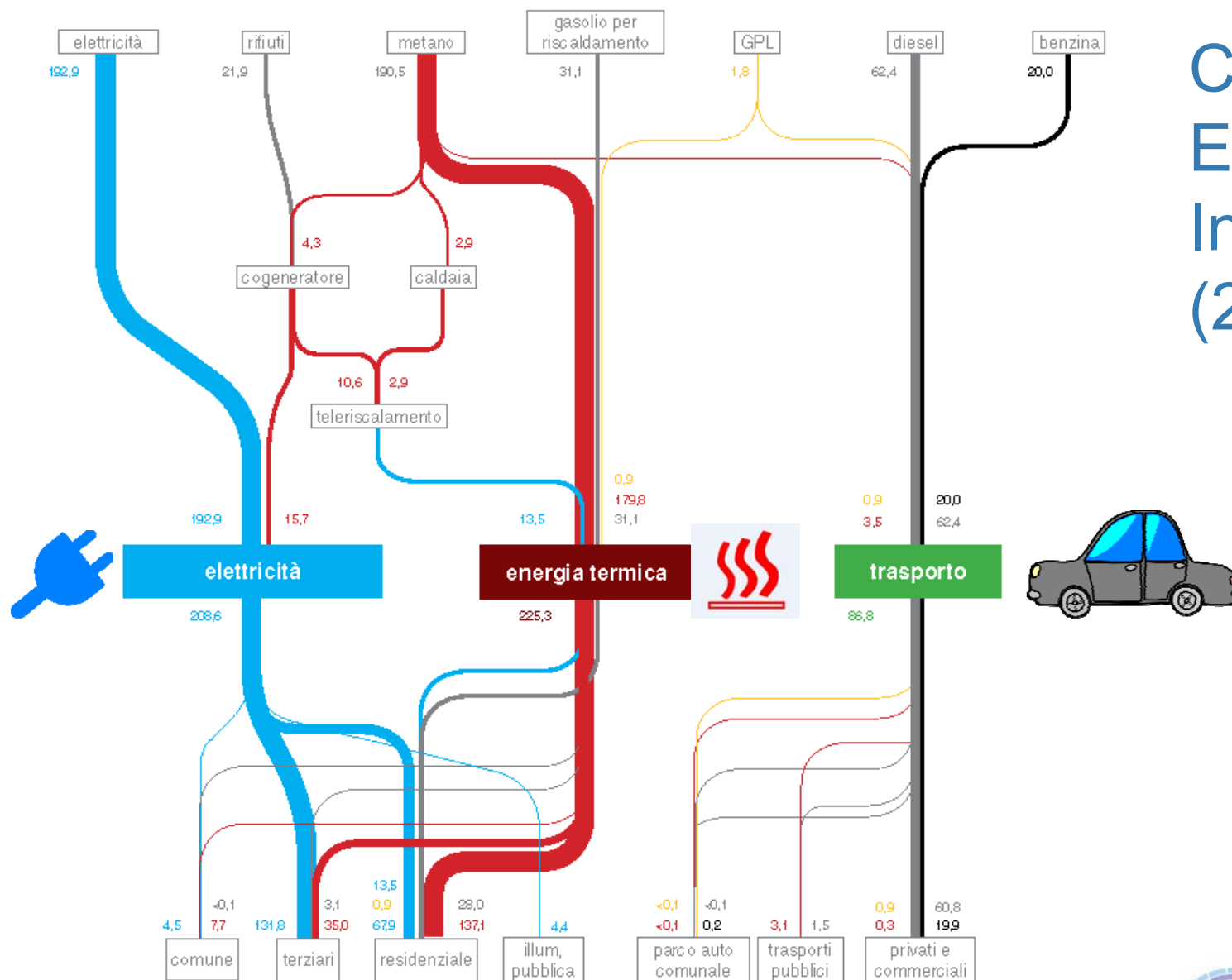
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Klimaplan Alto Adige



CO2 Emissions In Bolzano (2010)





SINFONIA PROJECT – FP7 8.8.1 ENERGY SCC

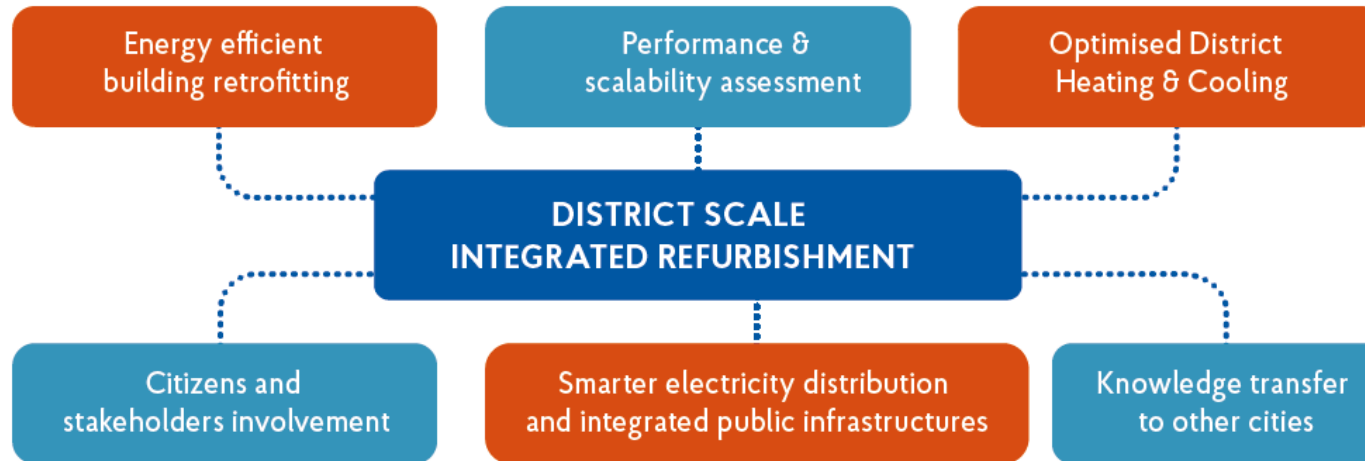
SUBMISSION : OCTOBER 2012

START: JUNE 2014

SINFONIA main figures

MAIN FIGURES		Pilot Cities	
Total budget	43 Mln Euro	<p>At the heart of SINFONIA is a close and long term collaboration between TWO pioneer cities and FIVE early adopter cities representing a wide variety of regulatory environments and climate zones.</p> <p>FOCUS ON MEDIUM AND SMALL CITIES</p> 	
EU	30 Mln Euro		
Duration	5 years (started 06.2014)		
Partners	23 partners + 10		

SINFONIA structure and main targets



FOCUS ON **DISTRICT LEVEL REPLICABLE AND SCALABLE** solutions

To:

- Achieve 40 to 50% primary energy savings;
- Increase the share of renewables by 20% in two pioneer districts

- Retrofitting of > 100,000m² of living surface;
- Optimisation of the electricity grid;
- Solutions for district heating and cooling



Città di Bolzano
Stadt Bozen

TiS
innovation park

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 **IPES**
ISTITUTO PER L'EDILIZIA SOCIALE DELLA PROVINCIA AUTONOMA DI BOLZANO


KlimaHaus®
CasaClima

Budget: 30 mil € of investments



ACTIONS in BOLZANO



 **BUILDING
REFURBISHMENT**



 **ELECTRICITY GRID**



 **DISTRICT HEATING &
COOLING**



Sinfonia

Social Housing Buildings of 1950-70ties



Citizens living in
refurbished area

15,000



Total refurbished
area

37,000m²



Dwellings retrofitted

451



Estimated Energy Savings

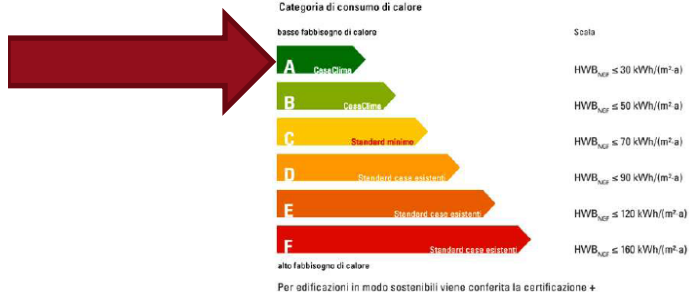
50%

- Building envelope insulation;
- Integration of renewable energy sources for electricity, heating and domestic hot water; PV panels;
- Additional storeys using innovative timber construction technologies



Test of the Volume Bonus Program

Up to 20% of additional volume if an energy retrofit at A class is done

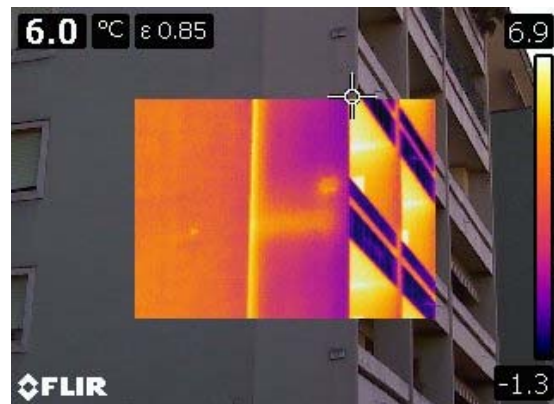




BUILDING REFURBISHMENT



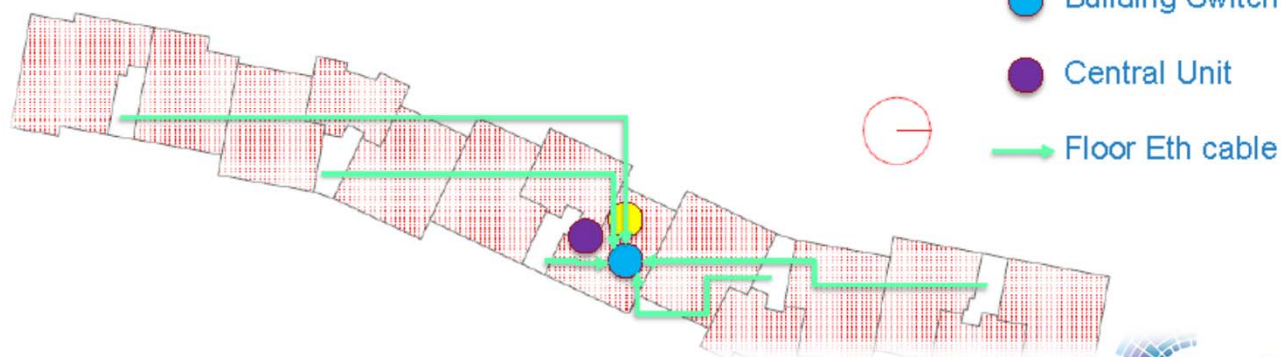
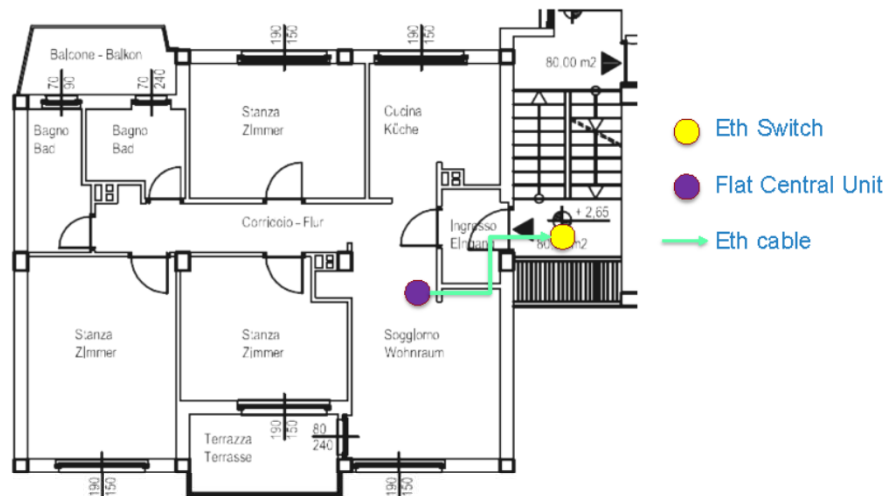
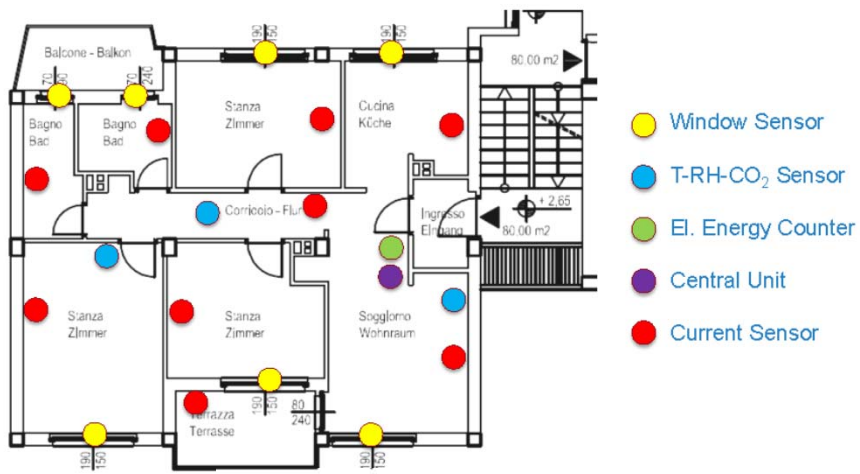
Energy refurbishment – thermal images – status quo



Monitoring System

Floor Equipment

Flat System





ELECTRICITY GRID

- 150 Smart points
- 6 different services
- 50.000 citizens involved

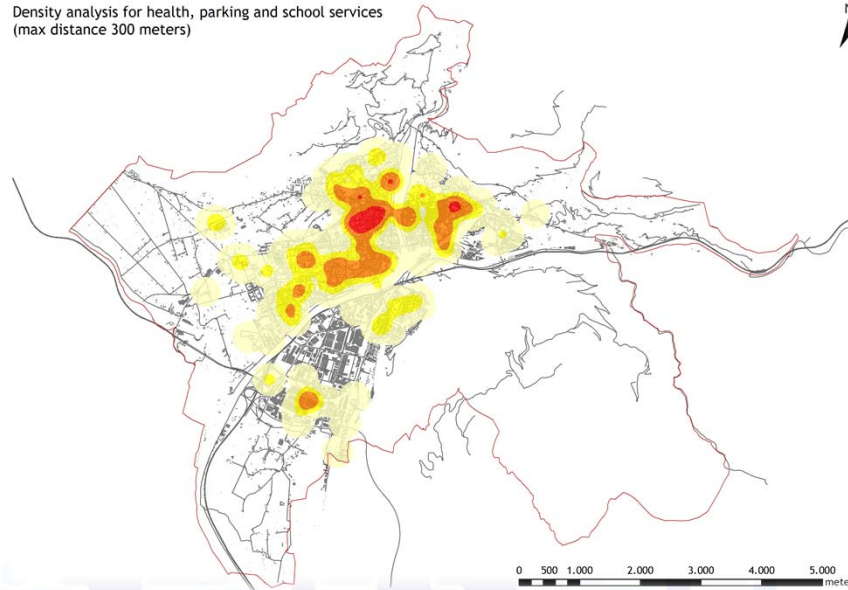
Urban Service-Oriented Sensible Grid (USOS-grid)

MEASURES INCLUDE:

- Recharge points for vehicles and bicycles;
- Meteorological stations for local climate condition monitoring;
- Smart retrofitting of the public lighting system;



Density analysis for health, parking and school services
(max distance 300 meters)





ELECTRICITY GRID



Source: Smart cities and Communitas platform

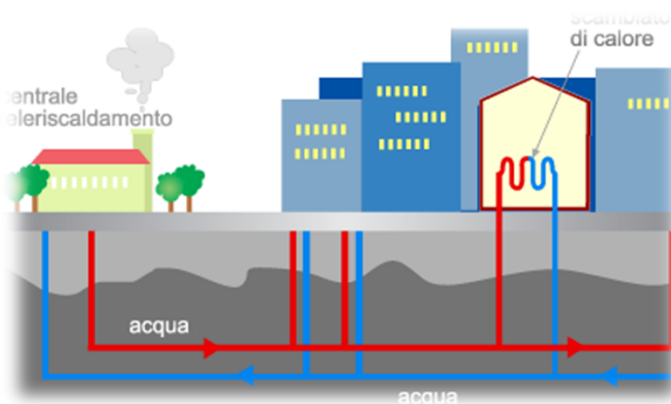
DISTRICT HEATING & COOLING

- Expected reduction of CO₂eq up to 30% and NO_x up to 60%

The district & cooling network extended and optimised

MEASURES INCLUDE:

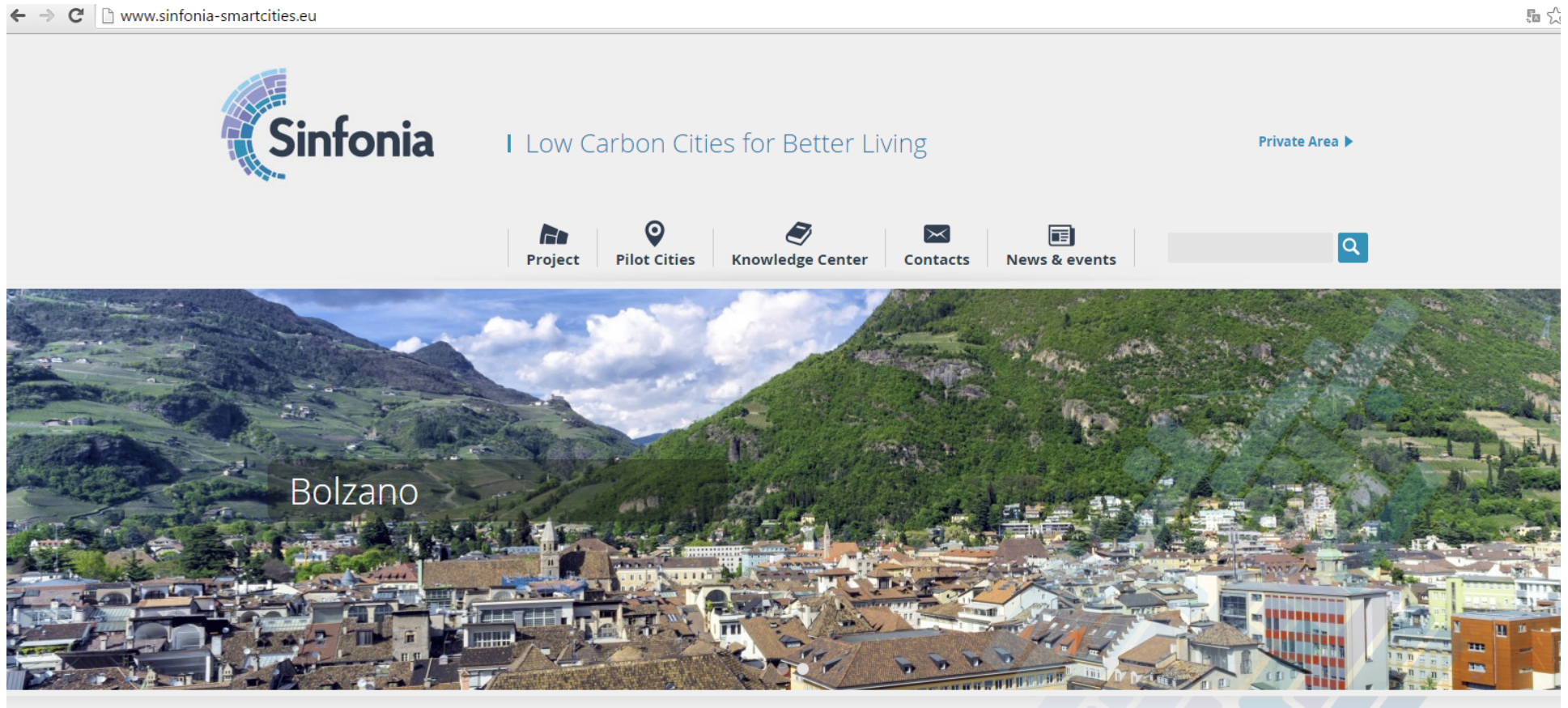
- Real time monitoring and forecasting of peak loads and energy demand;
- Hybrid hydrogen/methane backup system;
- Feasibility study for recovery of wasted energy in the local industrial park



First year of activities: some comments

- Increasead commitment of the Municipality and partners (high visibility);
- Follow-up projects are growing – self confidence – „*the targets are reachable! Incredible!*“;
- SEAP as the reference framework if done in the proper way;
- The triangle (admin, industry, academy) let an holistic and effective implementation;
- Delays in the implementation due to administrative procedures (to be reformed by the central government!);
- Need for methods and tools to involve the citizens in the process – standard participation, communication and educational tools are enough?;
- The energy transformation is very expensive. Who will pay for the rest of the city? – Need to find viable financial solutions.
- There is a number of co-benefits generated by the project that should be evaluated in the final economic balance.

www.sinfonia-smartcities.eu



<http://sspcr2015.eurac.edu>



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Thank you for your attention

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Legal Seat

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