

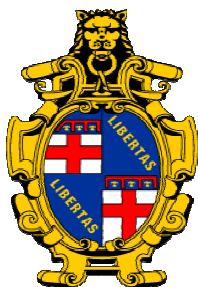
Alma Mater e Piattaforma Smart City per Bologna Smart City

Carlo Alberto Nucci

Coordinatore del Gruppo di Lavoro 'Smart City' dell'Alma Mater Studiorum
Università di Bologna

carloalberto.nucci@unibo.it

La Piattaforma Bologna Smart City



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA



In sintonia con
Regione
CNR, ENEA, Lepida, imprese
locali e nazionali,..

Piano Strategico
Metropolitano

Per l'Università di Bologna
→ pieno coinvolgimento del
Gruppo di Lavoro 'Smart
City' dell'Alma Mater
Studiorum

Gruppo di lavoro Smart City

Alma Mater Studiorum – Università di Bologna

Composizione attuale

A. Boeri (DAPT), G. Conti (ARIC), A. Corradi (DISI), F. Fava (DICAM), G. Finocchiaro (DSG) L. Lambertini (DSE), C.A. Nucci (DEI), A. Peretto (DIN), N. Semprini Cesari (FAM), P. Violi (DFC) M. Zompatori (MESDIS)

Obiettivi principali

- Raccogliere e approfondire **idee progettuali** sulle Smart City
- Favorire la partecipazione ai **bandi** Ministeriali ed Europei

MIUR

Smart cities and social innovation

Art 1: The Ministry of Education, University and Research (MIUR henceforth), in line with the European guidelines of "Horizon 2020," the guidelines the European Digital Agenda, the National Plan for E-Government, actions underway in the framework of the Digital Agenda Italian, attributes to interventions in the field of Smart Cities and Communities the value of a strategic priority for the entire national research policy and innovation.



14.5M€

Line of intervention: ageing of the society

Partners:

- 4 large companies
- 4 SME
- 5 research institutions

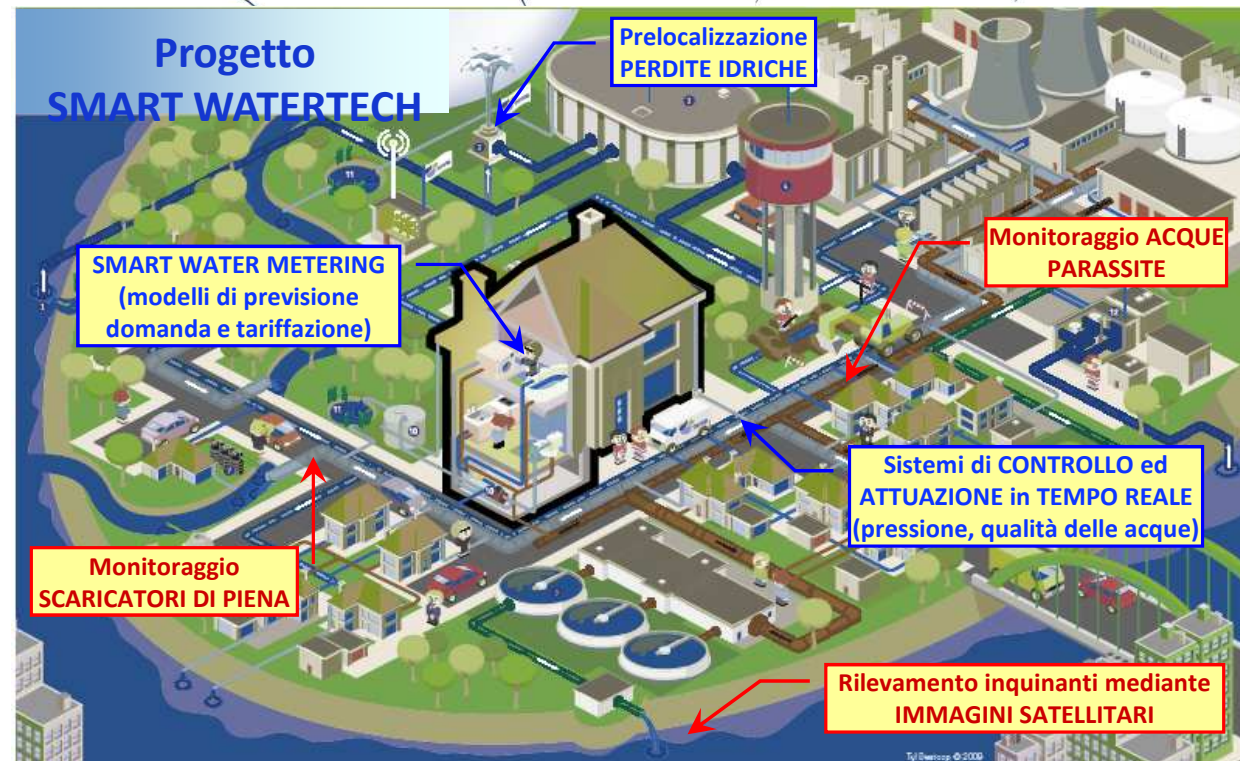
Formal commitment from:

- Ministry of Health
- regional governments and health agencies (4),
- healthcare local institution (4)
- municipalities of major impacted towns (3)
- associations (GPs, municipalities & healthcare institutions)



Proff. Armando Brath
e Sandro Artina

Smart Watertech



RIGERS – RIGENERAZIONE DELLA CITTÀ: EDIFICI E RETI INTELLIGENTI

ICIE - CPL - SACMI - CMC - SATA - CNR ICT - UNIBO (DA - DEI – DICAM)

Decreto Direttoriale 13 febbraio 2014 n.428 - BANDO SMART CITIES NAZIONALE

Prof. Andrea Boeri

Rigers

Ambito di interesse primario:

Ambito di interesse secondario:

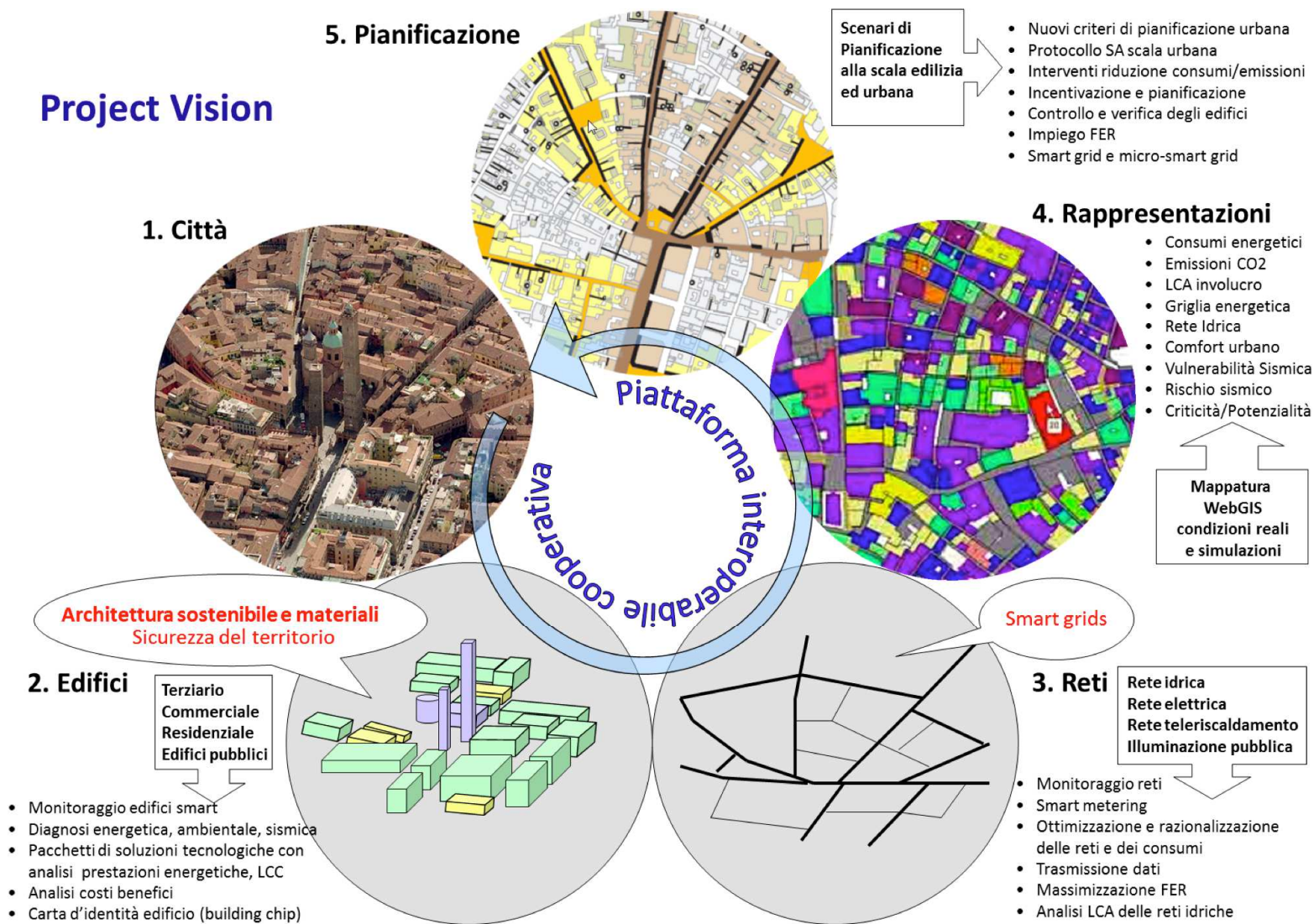
Ambito di interesse secondario:

ARCHITETTURA SOSTENIBILE E MATERIALI

SICUREZZA DEL TERRITORIO

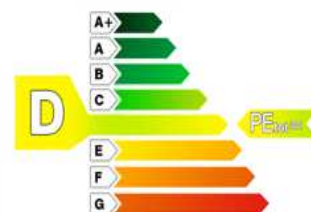
SMART GRIDS

Project Vision



RIQUALIFICAZIONE, RIGENERAZIONE E VALORIZZAZIONE DEGLI INSEDIAMENTI DI EDILIZIA SOCIALE AD ALTA INTENSITÀ ABITATIVA NELLE PERIFERIE URBANE NELLA SECONDA METÀ DEL '900 – PRIN 2008 DA UNIBO

IPOTESI RIQUALIFICAZIONE DELL' EDIFICIO VIRGOLONE: QUARTIERE PILASTRO BOLOGNA



FABBISOGNO ENERGETICO ATTUALE

118,54 kWh/m²y



RIDUZIONE DEL CONSUMO DI ENERGIA



24,86 kWh/m²y



Join our
Technical
Community

Search IEEE Smart Cities



Search

Follow:  

Home

About

What's New

Conferences & Events

Articles & Publications

IEEE Smart City Challenge

IEEE invites engineers and techies from around the world to share how they would improve the energy, communications, transportation or infrastructure of a city to make it smarter. Join us here and you'll also be entered for a chance to win a \$100 gift card.

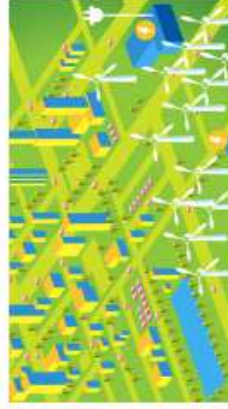
Read more



IEEE SMART CITY CHALLENGE

Choose a city. Make it smarter!

What's New



Feature Article



Technology Spotlight

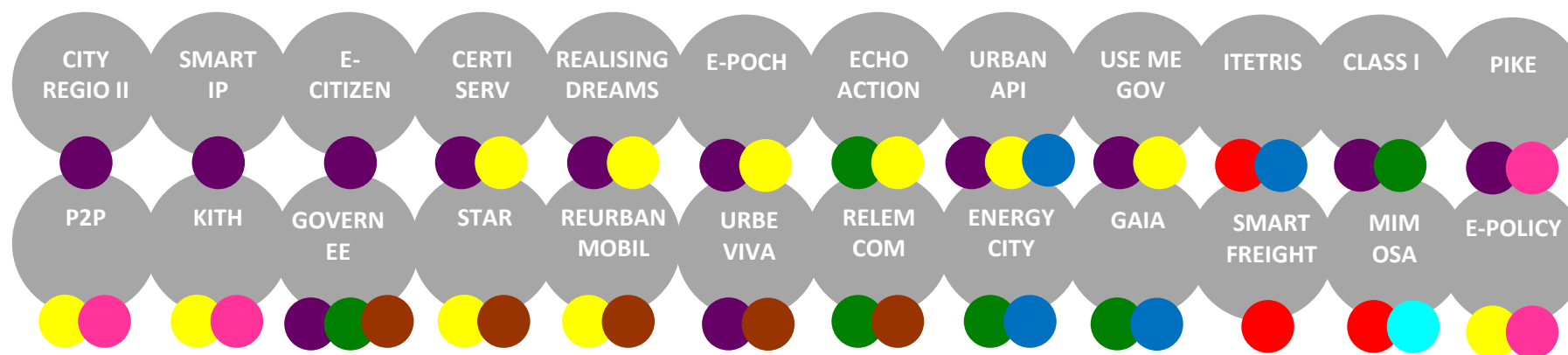


Useful Links

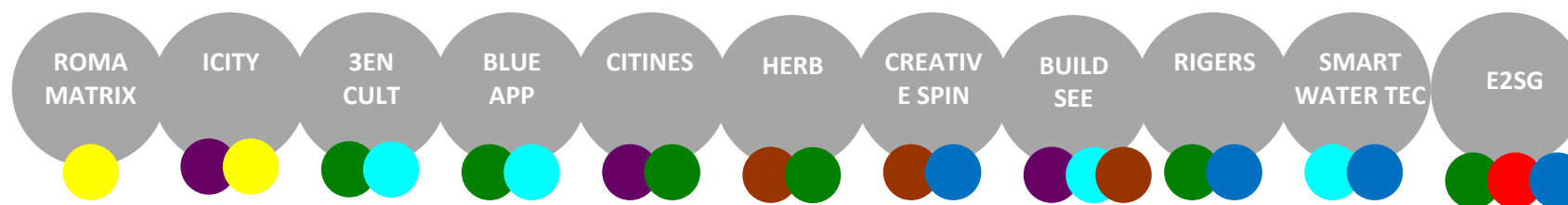
- EIT ICT Labs Blog by Roberto Saracco
- "Smart Cities" - IEEE Internet Computing Guest Editor's Introduction (IEEE Xplore)
- Standardization: Living in the

Bologna meets EU

Concluded EU funded projects



Ongoing EU funded projects



GOVERNANCE

SOCIAL

ICT

KNOWLEDGE

HERITAGE

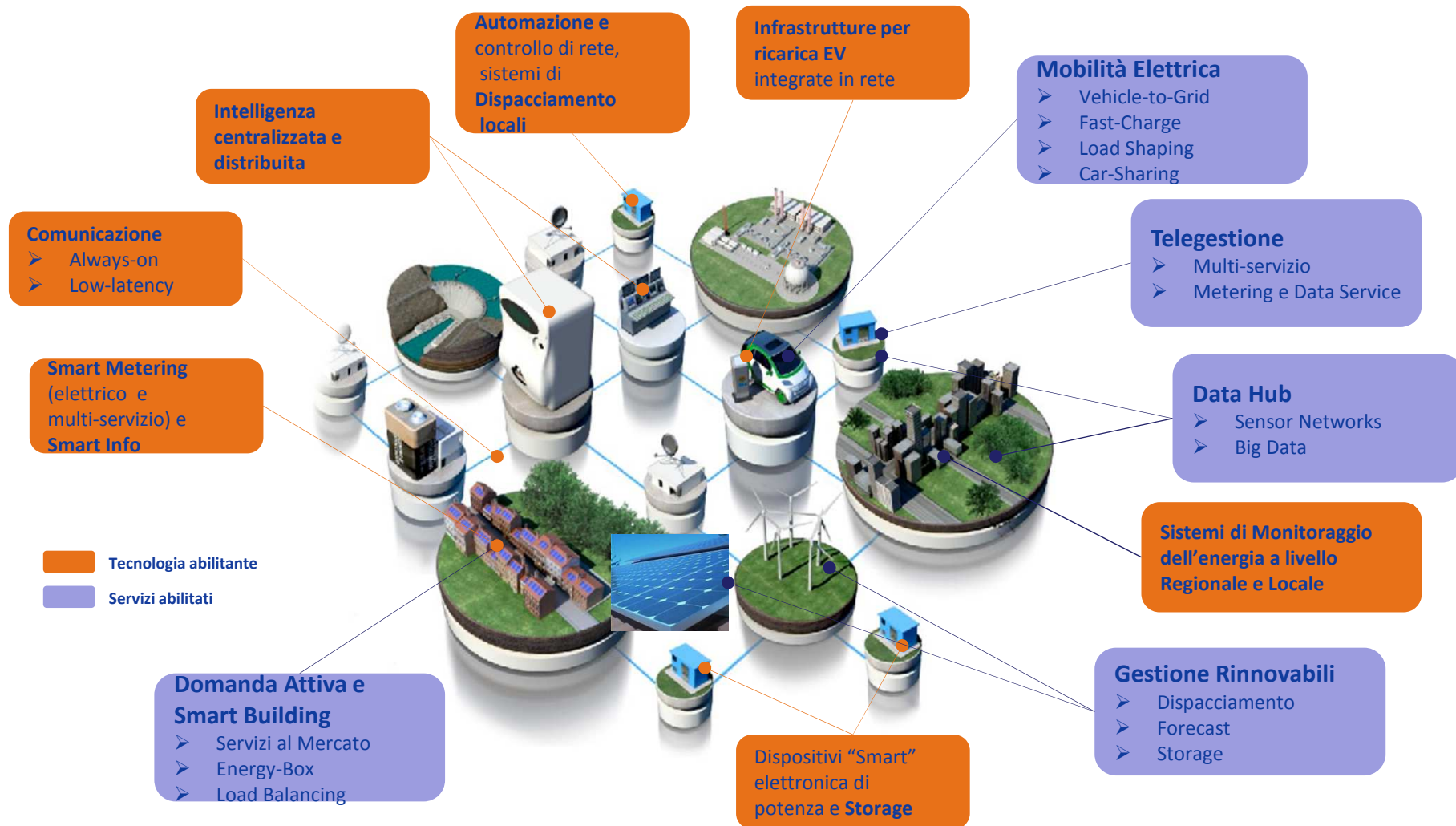
ENERGY

MOBILITY

ENVIRONMENT

L'evoluzione Smart delle infrastrutture

Smart Grids as a key enabling for Smart City



Una rete di infrastrutture "interoperabili" che possa integrare tutti gli attori/stakeholders e abilitare servizi innovativi per i cittadini

Bologna Lighthouse|a large-scale demonstration project: Pilastro District and North-East area (FICO+CAAB)

- A – Cross disciplinary demonstration site
- B – Accelerating city action plan
- C – Testing innovative solutions



Bologna Lighthouse | a large-scale demonstration project: Pilastro District and North-East area (FICO+CAAB)

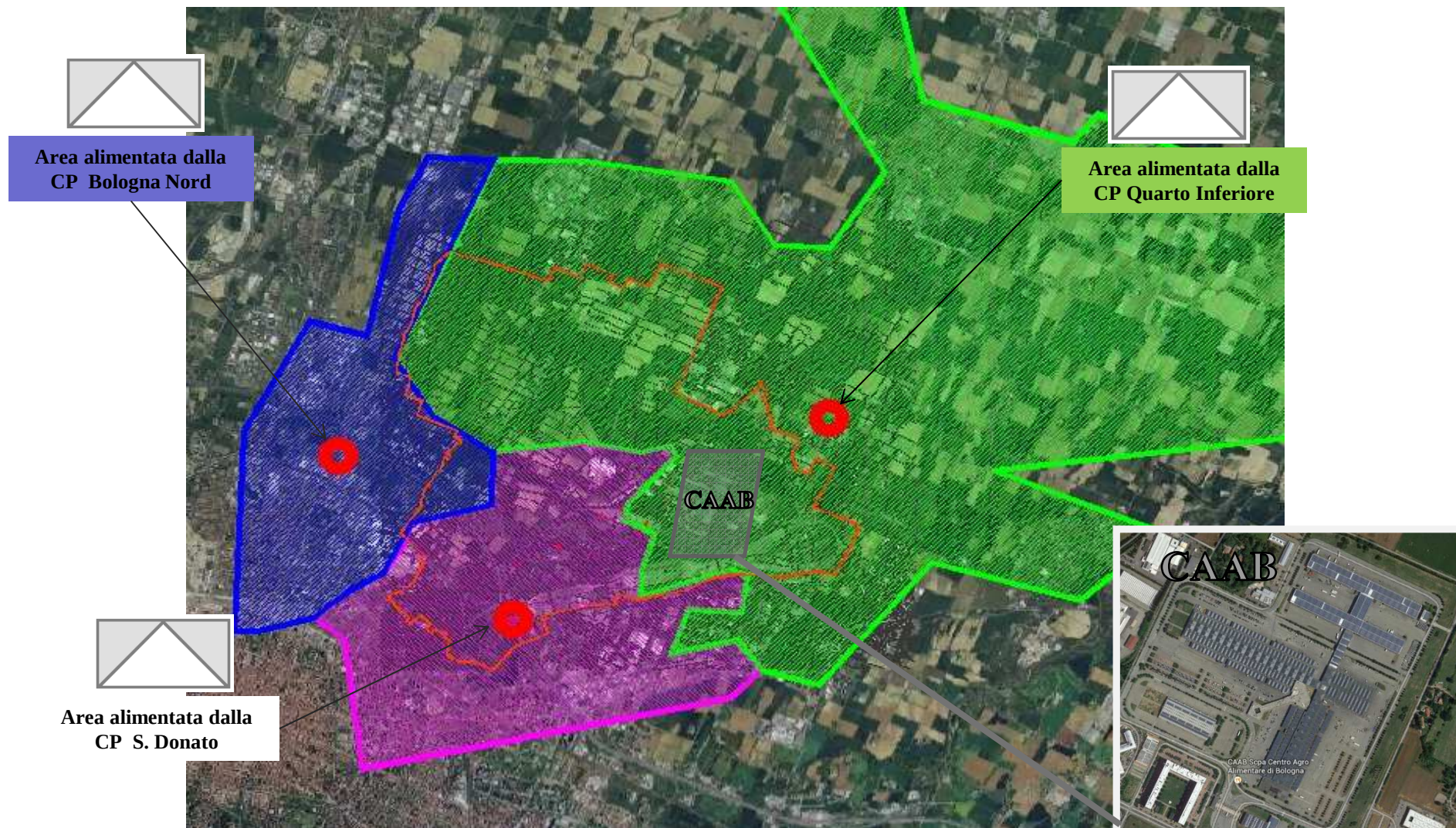
The aim is to develop low-carbon and environmentally sustainable measures - related to *energy, transport and infrastructure sectors* – through:

- the implementation of the best available local and low-carbon technologies
- the improvement of ICT tools (data collection, monitoring, forecasting, fostering positive citizens' behaviour, monitoring) applied to entire living environment
- the promotion of Living Labs in the lighthouse districts.

WORKING PLAN for each municipality
existing **BEST PRACTISES** and
TECHNIQUES exploitation

Comune di Bologna

Quartiere Pilastro – aree interessate dalle C.P.



BOLOGNA LIGHTHOUSE PROJECT

Monitoraggio consumi energetici e ambiente

Enel Smart Info

Permette ai clienti domestici un rapido accesso alle **informazioni di consumo in tempo reale e ai dati storici** favorendo analisi dettagliate e abilitando servizi di In Home Energy Efficiency (es. domotica e domanda attiva).



1. *Funziona in qualsiasi presa elettrica di casa*
2. *Rende disponibili i dati di consumo o produzione*
3. *Associato univocamente al contatore del cliente*

Cruscotto di monitoraggio

Sistema di **monitoraggio** in grado di fornire **informazioni energetiche ed ambientali** ai cittadini e agli altri stakeholder, favorendo una migliore pianificazione territoriale.

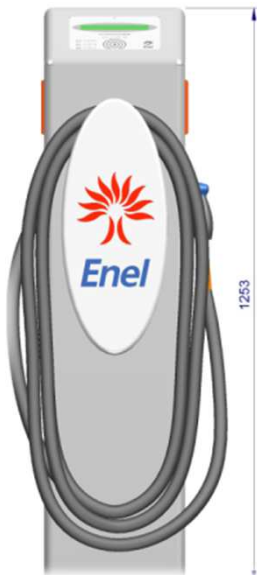


BOLOGNA LIGHTHOUSE PROJECT

Ulteriori interventi previsti sulla Rete

Riduzione Emissione CO₂

- rinnovamento tecnologico di 36 Cabine Secondarie con installazione nuovi scomparti di ultima generazione;



- installazione di colonnine/sistemi di ricarica per veicoli elettrici; (vehicle to the grid)



Shared Knowledge and integrated expertise. A comprehensive strategy for the smart district

DEPARTMENT OF ARCHITECTURE



DEPARTMENT OF COMPUTER
SCIENCE
AND ENGINEERING



DEPARTMENT OF ELECTRICAL,
ELECTRONIC AND INFORMATION
ENGINEERING

**Nearly zero districts & Low
energy districts**



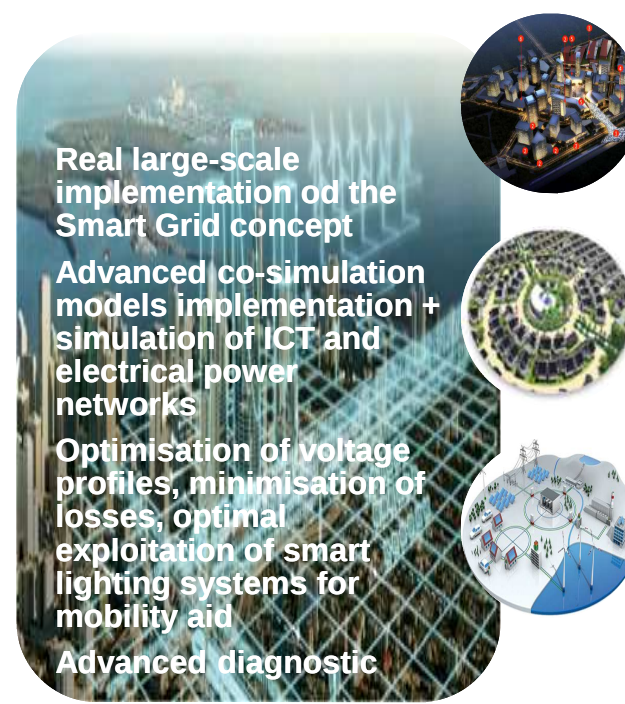
ID of district residential
buildings (data collection
and simulation studies)
Indicators definition for
district energy
performance
Application of solutions
in pilot cases
Involvement of tenants
Monitoring

Integrated infrastructures



Integration of voluntary
initiatives and citizens
involvement
Smart resources + e-
services platform
ICT tools to ease SCC
management by PA
Easy-to-use mobile and
web-based apps

**(with ENEL and HERA) smart
grids, integration of renewable**



Real large-scale
implementation of the
Smart Grid concept
Advanced co-simulation
models implementation +
simulation of ICT and
electrical power
networks
Optimisation of voltage
profiles, minimisation of
losses, optimal
exploitation of smart
lighting systems for
mobility aid
Advanced diagnostic