Smart Cities in a European Context

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Historic Background

- Started more that 10 years ago
  - CIVITAS (2002)
  - CONCERTO (2005/2009)
  - Covenant of Majors (since 2008)
  - Green Digital Charter (since 2009)
  - European Green Vehicles Initiative (since 2009)
  - European Energy Research Alliance (EERA) Joint Programme on Smart Cities (since 2010)
  - Urban Europe Joint Programming Initiative (since 2010)
  - Energy Efficient Buildings Public Private Partnership (EeB PPP) (2010-2013)

Latest Milestones

- June 2011
  SET Plan Initiative revision

- July 2012
  Creation of the European Innovation Partnership (EIP) for Smart Cities and Communities

- March 2013
  Green light from EU Council

- October 2013
  Adoption of Strategic Implementation Plan

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More detail on some relevant initiatives

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Network of cities willing to exchange and implement integrated urban transport strategies to make it greener

Ended - Aims to demonstrate that the energy optimisation of districts and communities as a whole is more cost-effective than optimising each building individually. It has co-funded, with more than 175.5 €million, 58 cities and communities in 22 projects in 23 countries (http://www.concertoplus.eu/)

It brings together thousands of local and regional authorities voluntarily committed to implementing EU climate and energy objectives on their territory (more than 6900 signatories - http://www.covenantofmayors.eu)

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It is a Eurocities initiative grouping cities committing to reduce emissions and promote progress in tackling climate change through the innovative use of digital technologies in cities. Open also to EFTA countries, at the moment no Norwegian cities are part of it (www.greendigitalcharter.eu/)

The European Green Vehicles Initiative is a contractual public-private partnership dedicated to delivering green vehicles and mobility system solutions. It aims at accelerating research, development and demonstration of technologies allowing the efficient use of clean energies in road transport

Joint Programming is an instrument to strengthen research and innovation by having European countries voluntarily work together and pool national research efforts. JPI Urban Europe aims to coordinate research and make better use of Europe's public funds in order to:

- Transform urban areas to centres of innovation and technology
- Realise eco-friendly and intelligent intra- and interurban transport and logistic systems
- Ensure social cohesion and integration
- Reduce the ecological footprint and enhance climate neutrality

(jpi-urbaneurope.eu)

*slides kindly provided by EERA

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EERA Joint Programme (JP) on Smart Cities

- **What is EERA?**
  - European Energy Research Alliance
  - Key instrument of the SET Plan for energy research
  - Development of next generations of low-carbon energy technologies
  - Strengthen, expand and optimise EU research capacities
  - Joint Programming (JP)
    - Sharing of research facilities/capacities based on own funding/resources
    - Maximising complementarities and synergies
    - Avoid duplication, overcoming fragmentation
  - Strong link to other EU platforms, bodies and initiatives
  - Proactively engage with industry

JP Overview

- 78 research institutions from 16 European countries
- 23 full participants
- 55 associated participants

- 2 umbrella organisations
  - UKERC (United Kingdom)
  - BERA (Belgium)

- 5 industry partners (ENEL, Ericcson, Telecom, Loccioni, Acciona)

- Total contributed human resources: 212.05 py/y
  - SP 1:   Energy in Cities
  - SP 2:   Urban Energy Networks
  - SP 3:   Energy-efficient Interactive Buildings
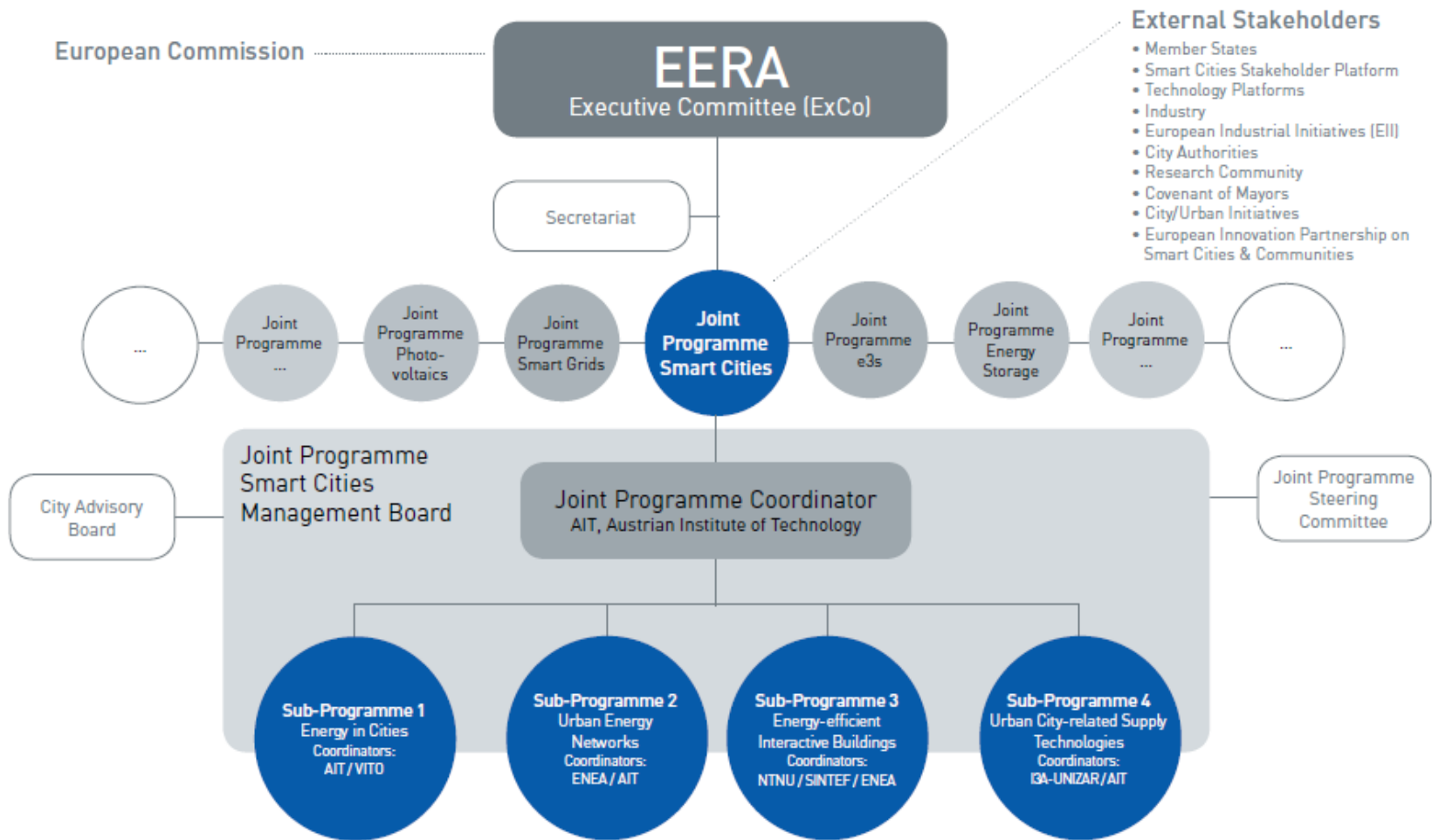 - SP 4:   Urban City-related Supply Technologies

History of the JP Smart Cities

- September 2010: First awareness workshop
- September 2011: Shaping of research framework
- Launched November 2011
- External review 2013
- January 2014: City advisory Board installed
- November 2014: representation @Smart City Expo World Congress, Barcelona

JP Structure

City Advisory Board

- 18 members from 11 countries
- Represented Cities: Linz, Vienna, Antwerp, Copenhagen, Tampere, Grenoble, Brescia, Bari, Rotterdam, Trondheim, Oslo, Warsaw, Madrid, York
- Main interests of board members
  - Learn how to bring innovation into cities
  - Elaborate a basis for „risky decisons"
- Main interests of researchers
  - Bridge the gap between research + cities
  - Reality check: learn how the cities „get their work done"
  - understand cities´ main interests & challenges
- Interest on both sides
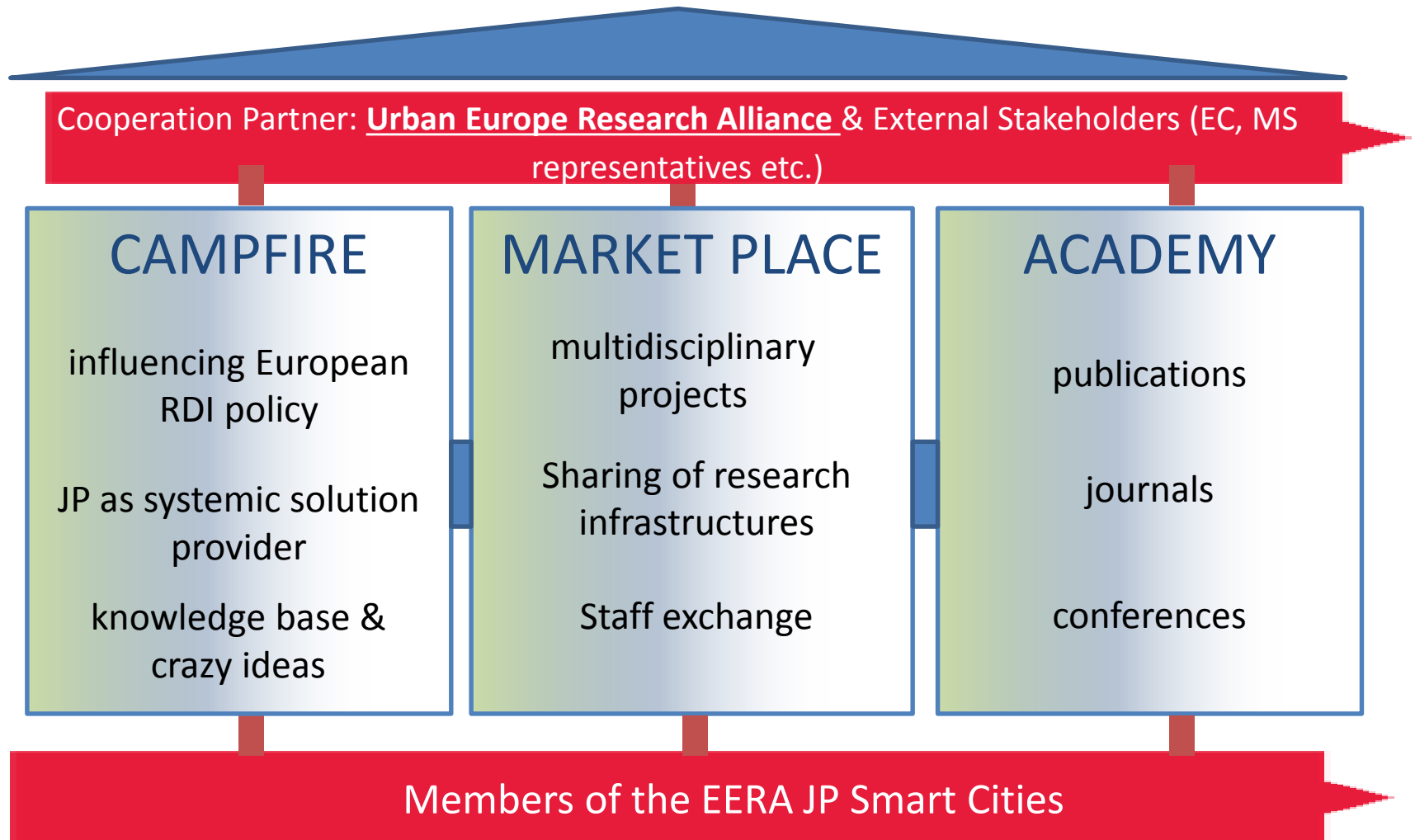 - Explore cooperation opportunities (e.g. for H2020 calls)
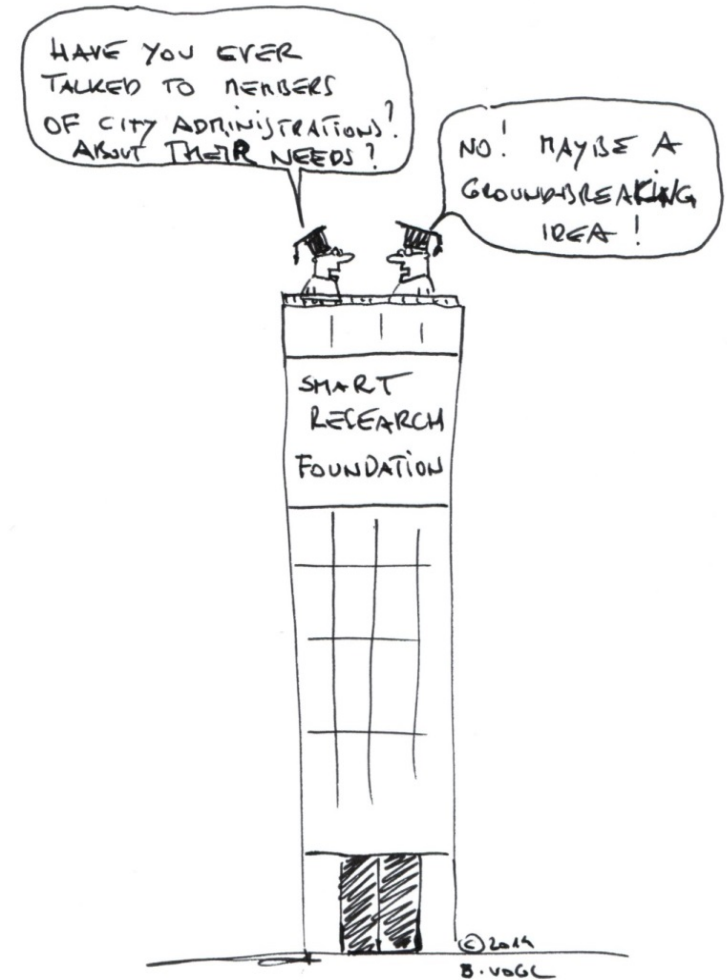
JP Smart Cities: boost the strengths

EERA-JP is an active network

- Meet to share scientific results and methods
  - Mutual understanding & multidisciplinarity
  - EERA experts have a neutral & independent position
  - Contact with city authorities (City Advisory Board)

- Within the joint programme, find the best partners to:
  - apply for joint projects (e.g. H2020-projects)
  - publish together

Strategy for the EERA JP Smart Cities based on 3 pillars

Cooperation Partner: **Urban Europe Research Alliance** & External Stakeholders (EC, MS representatives etc.)

CAMPFIRE

influencing European RDI policy

JP as systemic solution provider

knowledge base & crazy ideas

MARKET PLACE

multidisciplinary projects

Sharing of research infrastructures

Staff exchange

ACADEMY

publications

journals

conferences

Members of the EERA JP Smart Cities

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EIP Smart Cities and Communities

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EIP Smart cities and communities

Current EU initiative of reference for all stakeholders

- To face open challenges such as:
  - Fragmented markets
  - Lack of new business models and financing solutions
  - Need for knowledge sharing and capacity building

- But also to exploit opportunities:
  - Improving quality of life, competitiveness and sustainability
  - Exporting European knowledge in a strong growth market estimated globally at €1.3 trillion in 2020

The EIP:

- develop and implement solutions.
- facilitate networking and partnering.
- accumulate and share knowledge.
- build capacity.
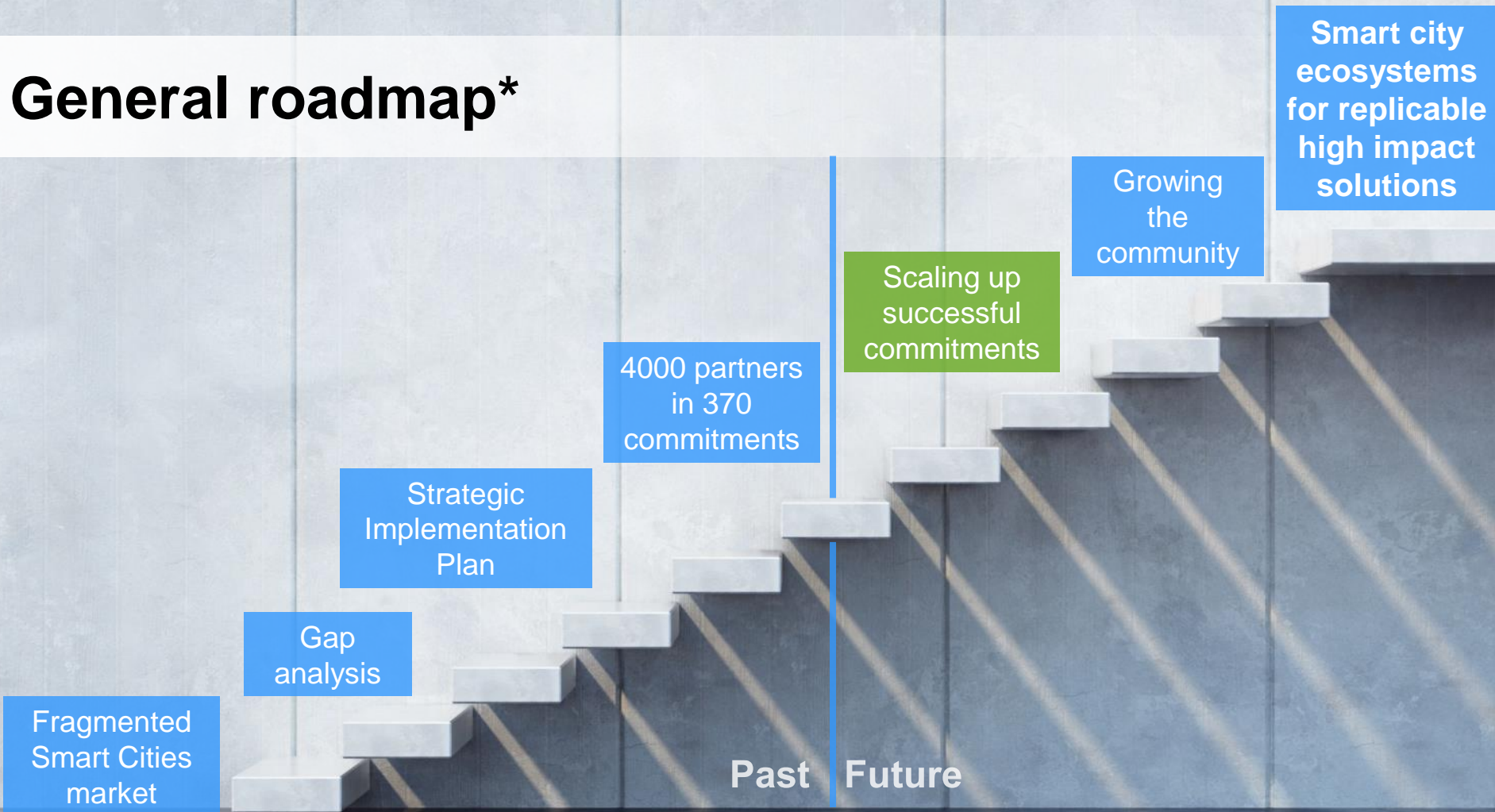- focus on Energy, Transport and ICT

EIP Smart Cities and Communities

- **6 Action clusters:**

  - **Business Models, Finance and Procurement**
  - **Citizen Focus**
  - **Integrated Infrastructures & Processes (including Open Data)**
  - **Policy & Regulations / Integrated Planning**
  - **Sustainable Districts and Built Environment**
  - **Sustainable Urban Mobility**

4600 partners,

370 commitments,

31 countries

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General roadmap*

Fragmented Smart Cities market

Gap analysis

Strategic Implementation Plan

4000 partners in 370 commitments

Scaling up successful commitments

Growing the community

Smart city ecosystems for replicable high impact solutions

Past | **Future**

*EC slide

Existing initiatives: why getting actively involved?

- **Practical knowledge sharing**
- **Capacity building**
- **Partnering for EU or other projects**
- **Bundling of demand enables easier access to all funding sources**
- **Gaining visibility for your city, project, association, company, etc.**
- **Contribute to define EU strategies and priorities**

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Existing initiatives: how to enter?

- **CIVITAS**
  - **http://www.civitas.eu/content/how-become-member**
- **EGVI**
  - **http://www.egvi.eu/about-egvia/organisation**
- **EERA**
  - **Follow guidelines at www.eera-set.eu**
- **EIP SCC**
  - **Create a public profile at https://eu-smartcities.eu/user/register**
  - **Join an existing commitment or an initiative.**
  - **Join an Action Cluster to provide your specific expertise on a certain issue**

Lighthouse Projects

- **Low energy districts**
- **Integrated infrastructures**
- **Sustainable urban mobility**
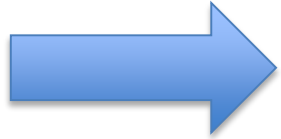
- ADD NATURE BASED SOLUTIONS MODIFICATION

Conditions

- Consortia: industry & cities
- 2-3 cities involving 2-3 follower cities
- Part of ambitious urban plan
- Funding from other parts secured
- Affordable solutions

Call opening
4 October 2016

Further smart cities related topics

Nature based solutions

€213.5 million **foreseen for all topics, out of which €129.5 million for lighthouse projects** **in 2016 and 2017**

More info:
http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/calls/h2020-scc-2016-2017.html

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Project example 1: SmartenCity (2015 call)*

- **EU contribution: € 28,1 million**
- **Impacts**
  - **165.181 m^2 of nearly Zero Energy Buildings (2494 houses)**
  - **6,6 MW of newly installed Renewable Energy Sources**
  - **About € 56,5 million invested → leverage factor 2**
  - **960 new jobs created**
- **Success factors**
  - **Good balance between Energy, Transport & ICT**
  - **Very good deployment plan**
  - **Positive evaluation of the ICT concept**
  - **High ambition → 100% renewable energy in Sonderborg**
- **35 partners / lighthouse cities: Vitoria, Tartu, Sonderborg / follower cities: Asenovgrad, Lecce**

Project example 2: Replicate (2015 call)*

- **EU contribution: € 25,4 million**
- **Impacts**
  - **58.750 m² of nearly Zero Energy Buildings (696 houses)**
  - **Up to 90% energy savings in buildings**
  - **About € 158 million invested → leverage factor 6,5**
- **Success factors**
  - **Very good balance and integration between the 3 domains**
  - **Very good data handling (→ collection and processing)**
  - **Lots of innovative and ambitious actions**
  - **Direct follow-up of an inegrated planning project → realisation of that plan within Replicate**
- **36 partners / lighthouse cities: San Sebastian, Florence, Bristol / follower cities: Essen, Lausanne, Nilufer**

Summarising the overall EU SCC Set up
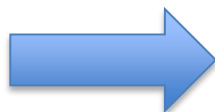
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EU Funding

Technology
Development /
Deployement
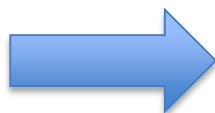
→ H2020 SCC themes
(DG ENER, DG MOVE, DG CNECT)

Financing

→ Elena Facility
(DG ENER, EIB, IFI)

Funds

→ Junker plan
(EC)

+ ESIF
(DG REGIO)

EU-MS initiatives:
JPI Urban Europe

Covenant of Majors
Political committments
(No EU funding)

EU initiatives:
CIVITAS
Green Digital Charter
CONCERTO

SMART CITIES AND COMMUNITIES

SCC-EIP Marketplace Committments
(Implementation without EU funding)

Lighthouse projects
(Implementation and replication with EU funding)

EERA Smart Cities Joint Programme
Research alignement and collaboration
(No EU funding)

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Thank you for your attention

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