An EU view on Smart Cities

Mercè Griera i Fisa

Unit "Smart Cities and Sustainability",

Directorate-General for Communications Networks, Content and Technologies,

European Commission

Smart Cities– General Overview

- **Context**
  level of urbanisation in EU above 75%, to rise to 80% by 2020, with cities consuming over 70% of energy and emitting as much of greenhouse gases in EU

  Need to act now to achieve EU climate and energy goals

- **20-20-20 goals**
  20% reduction CO2 compared to 1990
  20% share of renewable energy in total energy mix
  20% improvement in energy efficiency

- **Definition**
  Smart cities can be seen as systems with people, flows of energy, materials, services and financing that catalyse sustainable economic development and high quality of life through the wise use of technology and innovative transparent urban planning that is closely related to the economic and social activity of communities.

Smart Cities– Philosophy

- Tackle common challenges & bottlenecks
- Develop innovative & replicable solutions
- Bundle demand from cities & regions
- Attract and involve business & banks

➔ **Create markets!**

European Innovation Partnership on Smart Cities and Communities

- **Objective**
  Accelerate development and deployment of **integrated** energy, transport and ICT solutions at local level **to serve EU climate/energy targets**

- **Ultimate aim**
  Transform a number of European cities

- **How**
  Provide funding through work programme for selected large-scale demonstration projects
  Prepare for scale-up through focused horizontal activities (capturing lessons learned, identifying needs for regulation & standards, harmonising approaches to data collection, formatting and measurement, etc.)

- **Constituency building**
  High Level Group, Sherpa Group, Stakeholders Platform

Smart Cities and Communities - Strategic Implementation Plan

Priority Areas …

- ***Urban Sustainable Mobility***
  Multi-modal transport planning, alternative energy carriers, smart logistics, …
- ***Districts and Built Environment***
  Integration of renewables, positive energy districts, deep retrofitting, ….
- ***Integrated Infrastructures***
  Cross-sectoral infrastructures integration, joint planning and business models, common standards, …

… and Common Challenges and Levers across them

Insights & Governance

- ***Citizen focus***
  Participative citizen involvement right from planning stage, empowerment through information…
- ***Integrated planning & management***
  Realising systemic, holistic views in organisations, goal-based organisations, strong political leadership….
- ***Knowledge Sharing***
  Targeted networking and marketplaces for maximum outreach….

Funding & Finance

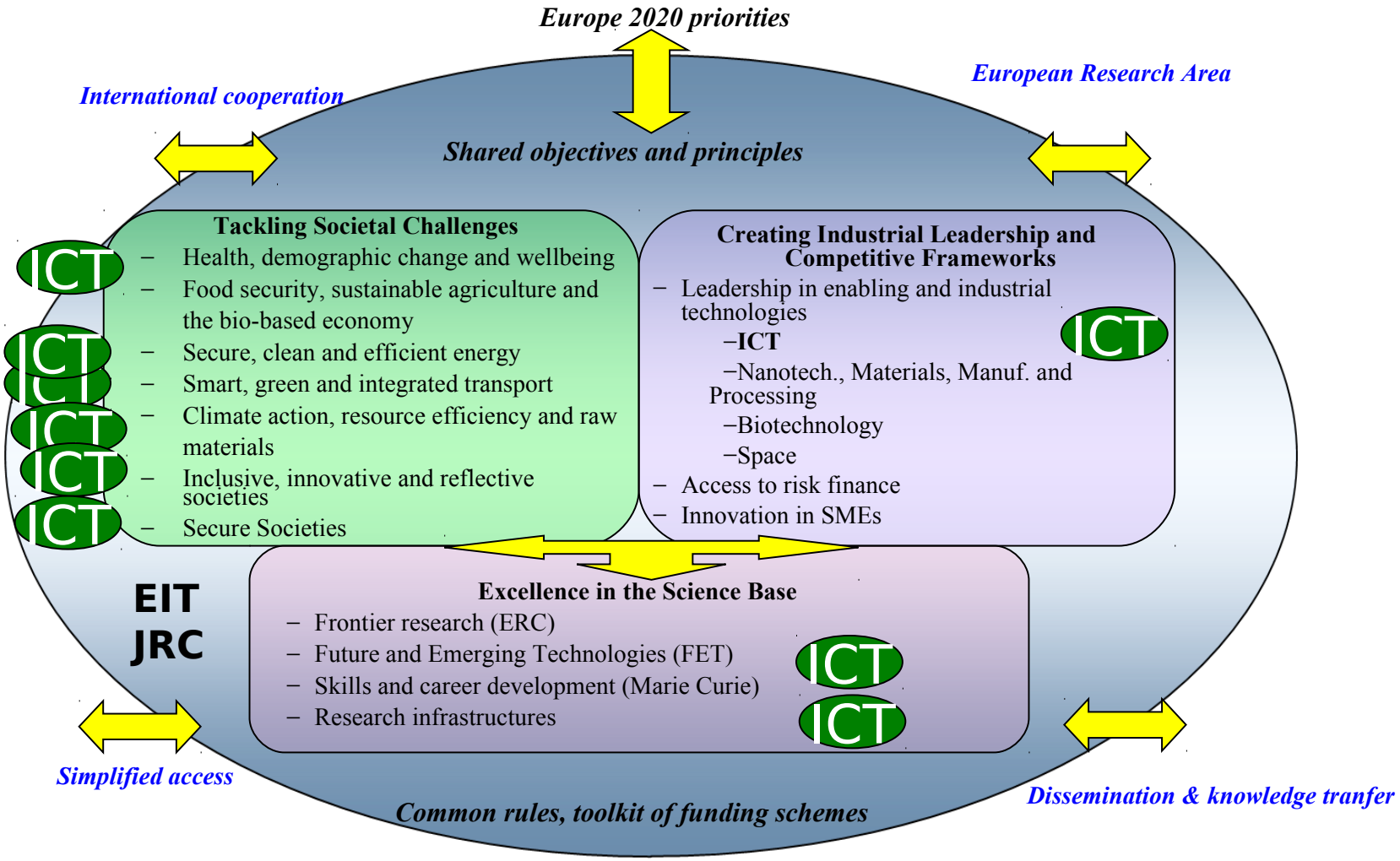
- ***Procurement***
  Joining forces for greater purchasing power, total cost of ownership…
- ***Financing & Business Models***
  Cross-sectorial business models, aligned with public revenue streams, pay-per-use, optimising use of existing instruments, capability building with local admin'….

Information & Decisions

- ***Open Data***
  Repositories with standardised data formats, apps-development on top of open data, increased predictive power through wide integration, privacy by design…
- ***Standards***
  De-risking invests and achieving interoperability at the level of data, reducing entry barriers, ….
- ***Baselines, Performance Indicators and Metrics***
  Measuring progress, identifying best-of-breed solutions….

Smart Cities and Communities EIP – the Novelties

- Seeks to break down “silos” between the energy, transport and ICT sectors, and consolidate European Commission’s initiatives under “one roof”
- Joint leadership by three Commissioners responsible for energy, transport and ICT, close involvement of Commissioners responsible for research, regional policy and environment
- Though overall goal is to serve EU climate/energy targets, expect progress elsewhere, e.g., interoperability of service infrastructures, open data, harmonized metrics, etc.
- Focus on innovation through integration of technologies/ business models rather than research into new technologies
- Funding, bundled in Horizon2020 focus area "smart cities"


Europe 2020 priorities
International cooperation
European Research Area
Shared objectives and principles
Tackling Societal Challenges
– Health, demographic change and wellbeing
– Food security, sustainable agriculture and the bio-based economy
– Secure, clean and efficient energy
– Smart, green and integrated transport
– Climate action, resource efficiency and raw materials
– Inclusive, innovative and reflective societies
– Secure Societies
Creating Industrial Leadership and Competitive Frameworks
– Leadership in enabling and industrial technologies
–ICT
–Nanotech., Materials, Manuf. and Processing
–Biotechnology
–Space
– Access to risk finance
– Innovation in SMEs
ICT
EIT
JRC
Excellence in the Science Base
– Frontier research (ERC)
– Future and Emerging Technologies (FET)
– Skills and career development (Marie Curie)
– Research infrastructures
Simplified access
Common rules, toolkit of funding schemes
Dissemination & knowledge tranfer

Societal Challenge 3: Secure, clean and efficient energy

ENERGY EFFICIENCY

- Buildings and consumers
- Heating and cooling
- Industry and products
- Finance for sustainable energy

COMPETITIVE LOW CARBON ENERGY

- Renewable electricity and heating/cooling
- Modernising the European electricity grid
- Providing the energy system with flexibility through enhanced energy storage technologies
- Sustainable biofuels and alternative fuels for the European transport fuel mix
- Enabling the decarbonisation of the use of fossil fuels during the transition to a low-carbon economy
- Supporting the development of a European research area in the field of energy
- Social, environmental and economic aspects of the energy system
- Cross-cutting issues

SMART CITIES AND COMMUNITIES

- Enhancing the roll-out of Smart Cities and Communities solutions by stimulating the market demand

How might a Lighthouse project look like?

- Strong industry consortium: technology partners and key service providers from the energy, transport & ICT sectors together with cities
- Demonstration of integrated novel technologies, business models and citizens' acceptability in at least two cities and two follower cities
- Commitment to share experiences, to open standards that prevent lock-in and foster competition
- Evidence of scale-up and replication potential within the city and in other cities, solutions should be transferable and deliver EU added value
- Funding ranging from 18 to 25M€

Lighthouse projects

- Low energy districts
- Integrated infrastructures
- Sustainable urban mobility

Conditions

- Consortia: industry & cities
- 2-3 cities involving

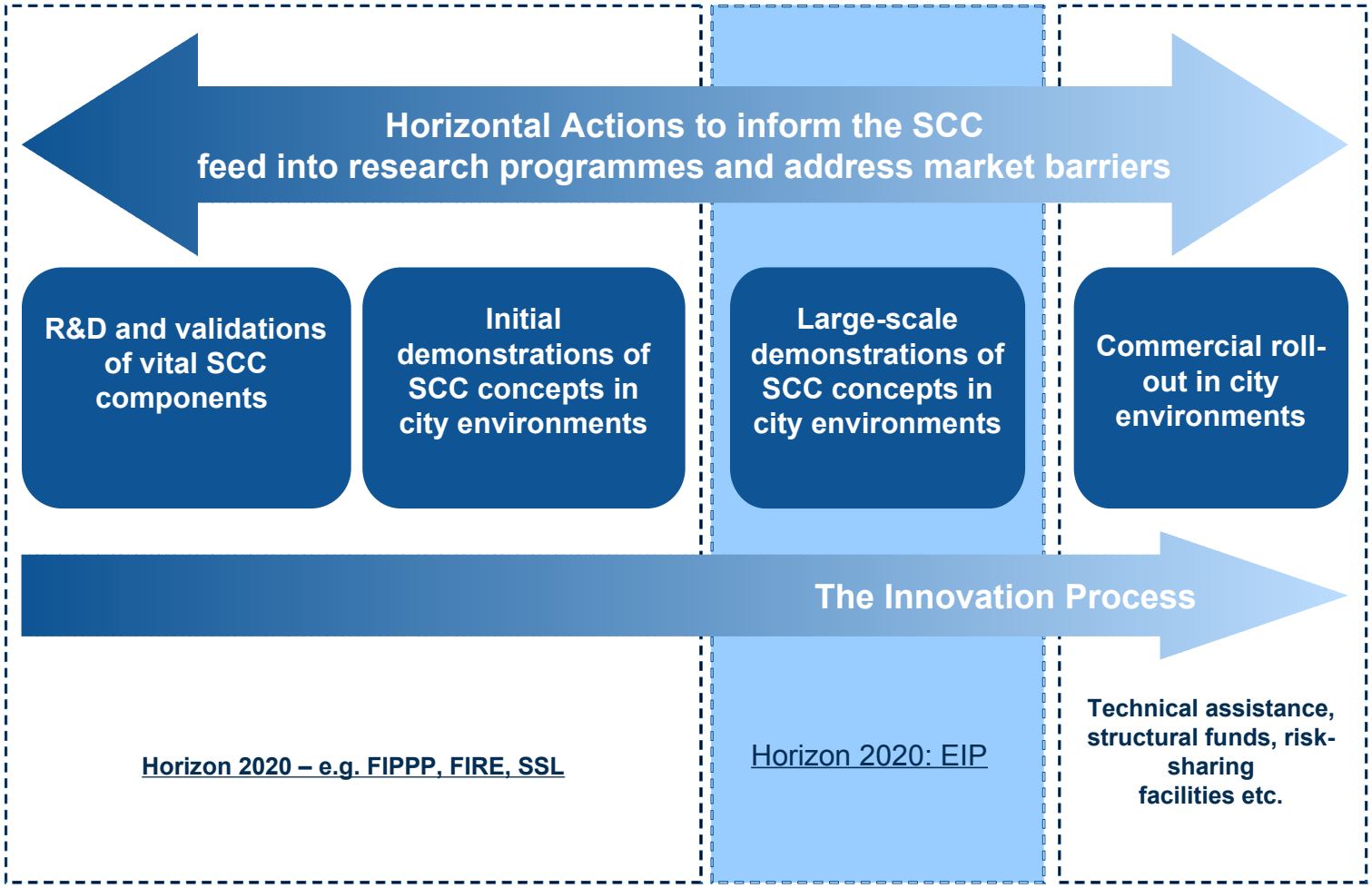
2-3 follower cities

- Part of ambitious urban plan
- Funding from other parts secured
- Affordable solutions
- Interoperability – no lock-in!
- Contributions to data collection

Enhancing the roll out

- **SCC2 Performance measurement**
  common framework
- **SCC3 Standards**
  Systems – Interoperability
- **SCC4 Networks of public procurers**
  Joint procurement
- **SCC5 Prize competition**
  for SMEs

Smart Cities and Communities in Horizon 2020



Smart Cities in LEIT-ICT

- LEIT, ICT 11, Future Internet Research and Experimentation collaborative projects for creation of experimental infrastructures in any of: Mobile and Wireless, Cloud, Spectrum, Photonics, Internet of Things (IoT), Distributed Service Platforms, Sensors.

- Technology Foundation project of the FI-PPP, FI-WARE, provides FI-LAB. Third party developers can use the functionality provided by the FI-LAB platform and the open data provided by the cities to develop applications and services (for these cities).

- LEIT, ICT 26, Open system architectures for Solid State Lighting (SSL)

Smart Cities and Communities - timeline and next steps

- July 2012: Commission launches EIP
- February 2013: Council welcomes initiative and supports EIP
- March 2013: 1st Sherpa meeting
- May 2013: 1st meeting of High Level Group
- October 2013: Strategic Implementation Plan approved by High Level Group
- November 2013: Launch Conference
- First Calls for proposal within Horizon2020 to be published 11/12/2013 with a budget of about 90M€
- Call deadline: 07 May 2014

Next steps:

- Operational Implementation Plan to be finalised by end of February 2014
- 2014 & onwards: Implementation, monitoring and evaluation

Thank you!

More information

http://ec.europa.eu/eip/smartcities/ec-smartcities