



European
Commission



*E3SoHo Final European Workshop
18 September 2013, Brussels*

Smart Cities, Horizon 2020, ICT for Energy Efficiency

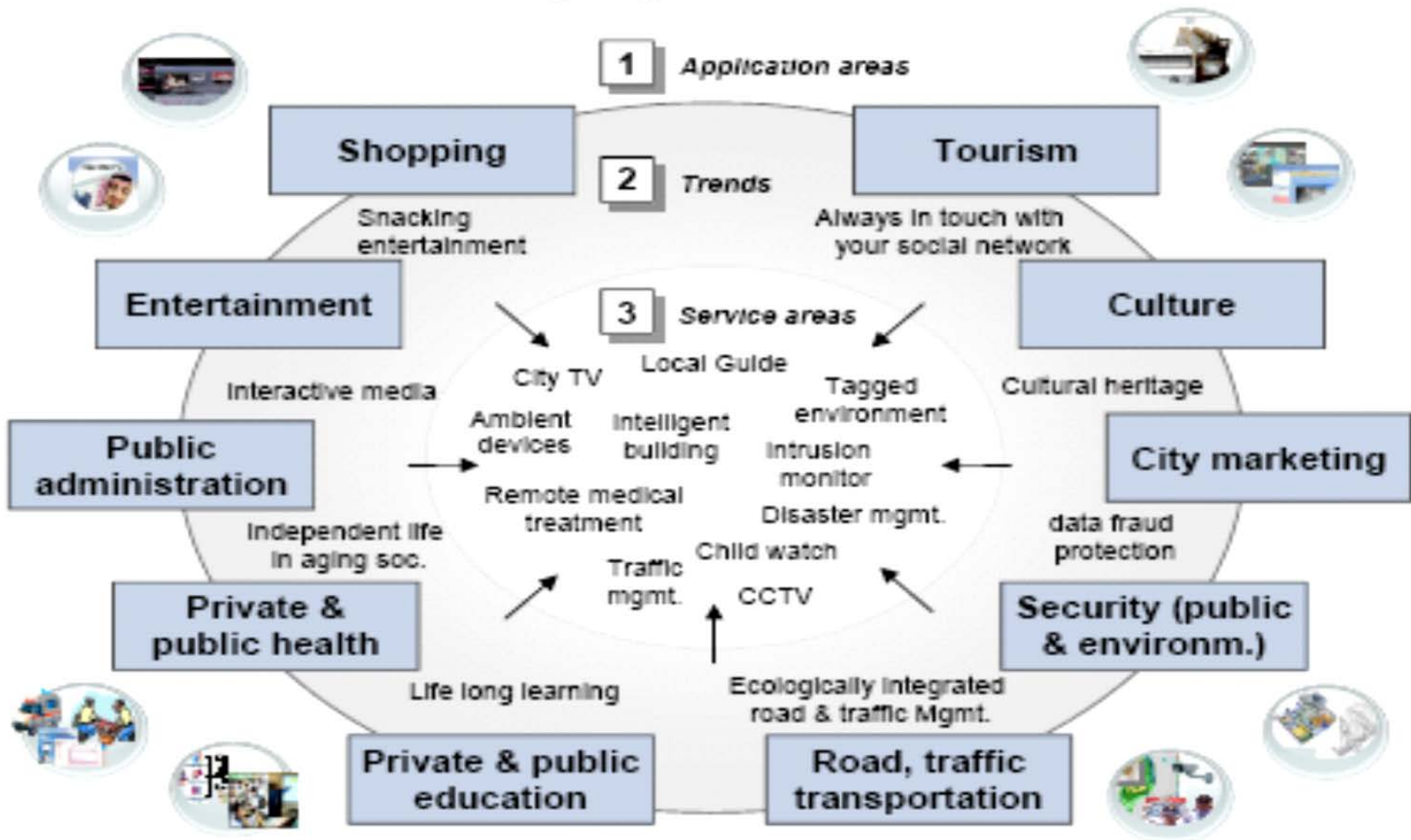
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DG CONNECT - European Commission*





A holistic mega-city vision of tomorrow





The contribution of ICT to Sustainable Cities

The enabling role of ICT

- Buildings:
 - > energy management and control system
 - > modelling and simulation
 - > 40% of energy in Europe is consumed in buildings
 - > ICT can help reduction close to 20%
- Transport:
 - > energy management and control system
 - > traffic management
 - > intermodal transport
- Smart Energy:
 - > integration of renewables
 - > smart meters (prosumers)
 - > grid control and management
 - > smart vehicles

A city becomes 'smart' and 'green' through strategic deployment of ICT infrastructure and services to achieve sustainability policy objectives.

Smart and Green through ICT

Energy and Resource Efficiency

ICT deployed to increase energy efficiency in buildings and beyond, including urban planning; ICT-optimised water and waste management; ...

Carbon Neutrality

ICT deployed to decrease carbon footprint of private and public real estate, to feed distributed renewables into the grid, to optimise traffic management; ...

Cost-Effectiveness

ICT deployed to realise savings through reduced peak energy demand, to turn consumers into prosumers, to optimise logistics; ...

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ICT deployed to enable achieving further public policy objectives



Connecting and enabling European cities:

The Green Digital Charter means political commitment and specific actions towards ICT-enabled sustainability targets and greening ICT itself.

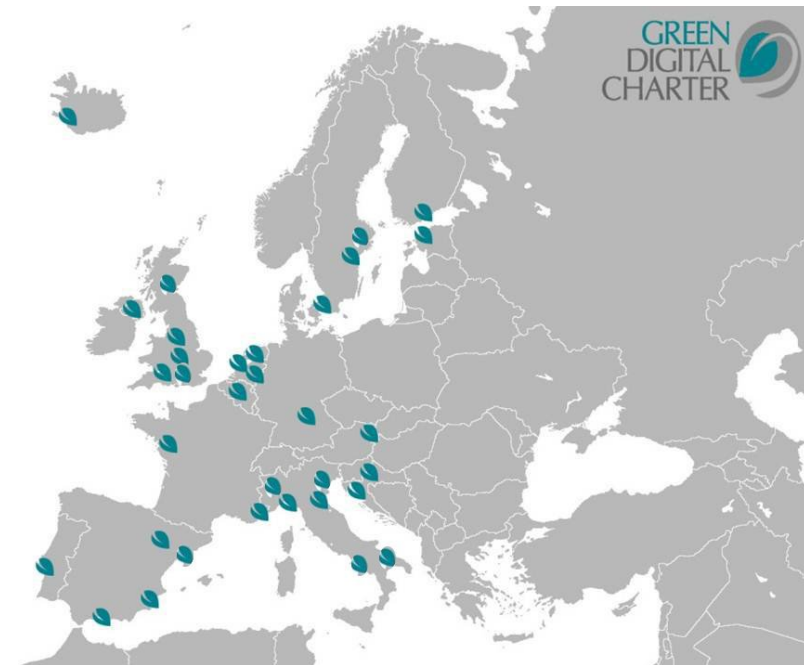
Overall Objectives

Since November 2009, to encourage cities to:

- (i) reduce the carbon footprint of their ICT and
- (ii) roll-out ICT solutions leading to more energy and resource efficiency, carbon neutrality and further public policy goals

Signatory Mayors' Commitments

- Closely cooperate on ICT deployment towards public policy goals
- Deploy 5 large scale ICT projects within 5 years
- Decrease ICT's direct carbon footprint by 30% within 10 years






Connecting and enabling European cities:

'NiCE – Networking intelligent Cities for Energy Efficiency' is the EC's support action to promote and advance the Green Digital Charter.




Key Objectives


- *Objectives: establishing an ICT footprint Reporting Tool drawing on existing international standards to measure, compare and report ICT's direct carbon footprint at city level*
- *Supporting the Green Digital Charter in moving from political commitment to action:*



Define a set of monitoring and reporting tools



Deliver practical support to the signatory cities



Knowledge exchange beyond GDC



Cooperation



Support for Smart Cities and Innovation:

- **CONNECT: funding smart cities projects in FP7 calls**
- **RTD & ENER: introducing Smart Cities in October 2009 in the SET-Plan financing Communication**
- **RTD, ENER & CONNECT: joint work on Smart Cities in the context of the Energy-Efficient Buildings PPP**
- **MOVE: support for Smart Cities through several policies**
- **European Innovation Partnerships – concept proposed in Innovation Union Flagship Communication (2010):**
 - **A new approach, not an instrument**
 - **Covering the supply and demand side**
 - **Tackling special societal challenges**
 - **Bringing together actors at EU, national, regional level, across policy areas and industrial sectors**



Moving beyond the silo:

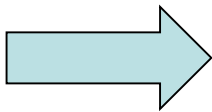
The European Commission will focus its efforts on smart cities across portfolios to optimise outputs and ensure public policy coherence.





Rationale of an European Innovation Partnership on Smart Cities and Communities (EIP-SCC)

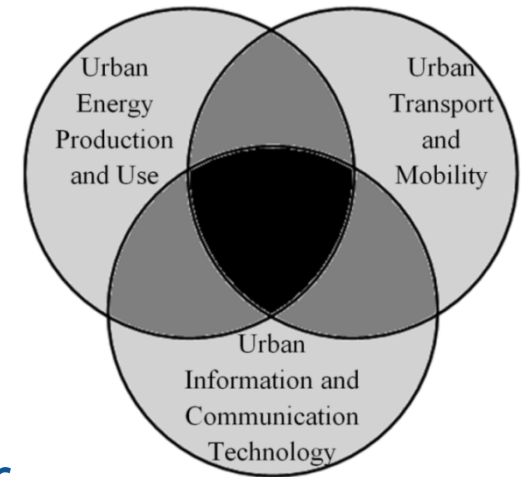
- **Urban areas:**
 - big consumption of energy and greenhouse gases emission
 - traffic congestion and pollution - dysfunctional cities, undermined competitiveness, affected quality of life
- **Solutions:** technologies for intelligent and resource-efficient energy and transport systems
- **Conclusion:** need for an initiative to spread solutions across Europe, driving costs down to enable mass production and use
- **Result:** An European partnership making cities hubs for innovation, offering opportunities for cities, industry and citizens



Smart Cities and Communities European Innovation Partnership
- C(2012) 4701 final, released in July 2013 -
Joint undertaking by ENER, MOVE and CONNECT

Characteristics

1. **20/20/20 goals for 2020**
2. **Integrated approach**
Energy, Transport and ICT
3. **Focus on the intersection**
4. **ICT both as enabler and as consumer**
5. **Key role for industries and cities**





- **Identify common challenges**
- **Develop innovative, replicable solutions**
- **Bundle demand from cities**
- **Attract and involve business and banks**
- **Create markets!**



Supply side:

- Large-scale demo projects ('*lighthouse projects*')

Demand side:

- Business models
- Public procurement
- Horizontal actions (e.g. regulatory measures, standards, common measurement frameworks)



High Level Group

- guide Strategic Implementation Plan (SIP)
- steer implementation SIP
- take commitments, lead by example
- supported by a "Sherpas" Group

Stakeholder Platform

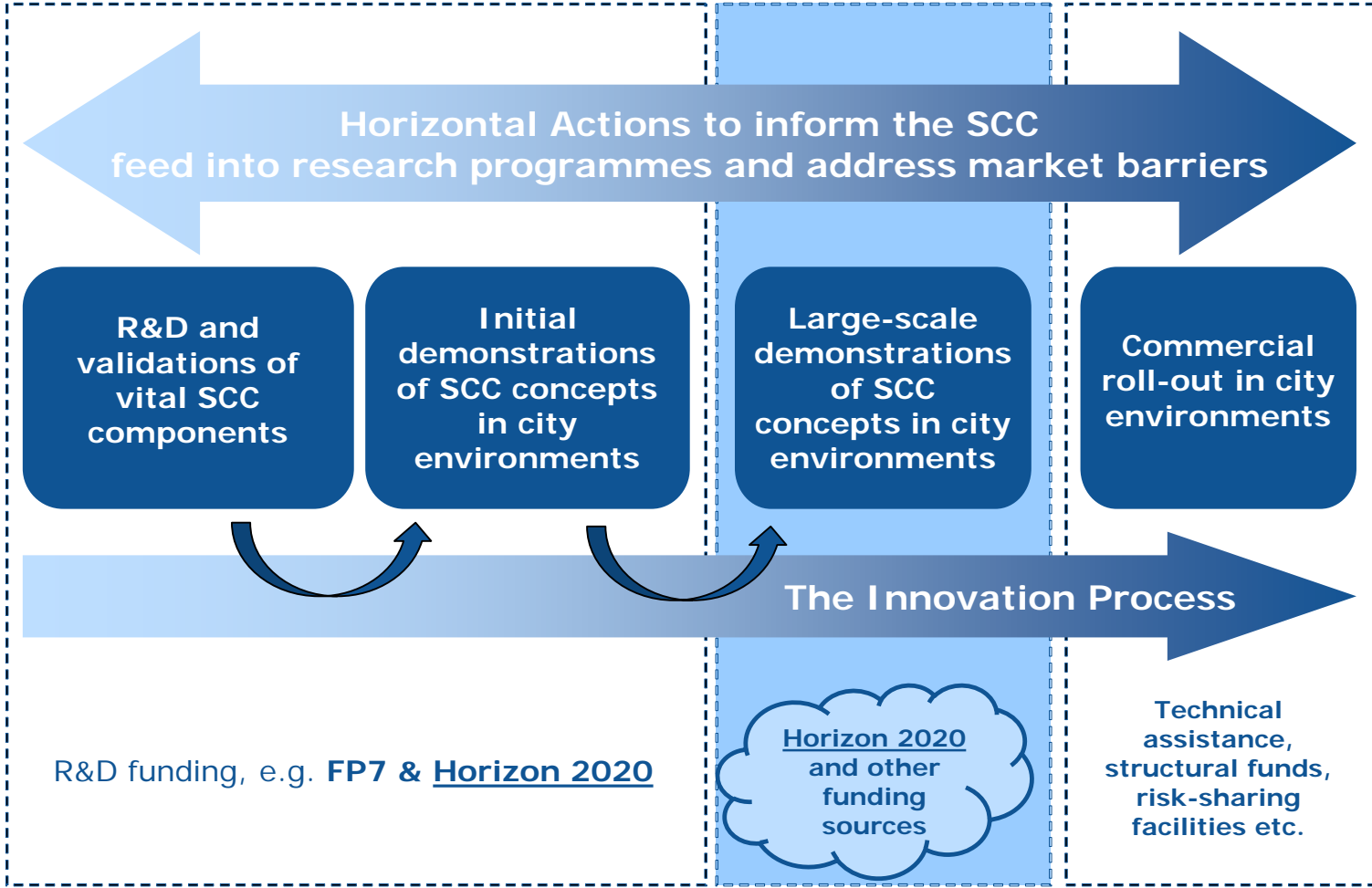
<http://eu-smartcities.eu/>

- provide input to SIP
- exchange of knowledge
- create partnerships



The screenshot shows the homepage of the Smart Cities and Communities website. At the top, there is a navigation menu with links for Home, Groups, Blogs, About, Events, Login, Solution Proposals, and Browse Members. The main header features the website logo and a large banner image of a modern city skyline. A prominent blue box on the left of the banner encourages users to 'Join the Smart Cities Stakeholder Platform' and provides links to 'Submit a Solution Proposal', 'See our Working Groups', and a 'Join us now!' button. Below the banner, there are several content sections: a 'Highlight' section with a green lightbulb icon and text about an info session; a 'Smart Cities News' section with a 'Smart City Expo - World Congress' article; a 'Smart Cities Events' section listing various events; a 'User login' section with a form; a 'Follow us' section; and a 'Latest City Profiles' section with a carousel of city images. The footer contains a 'Latest Tweets' section.

Innovation process and financing





A stronger, clearer focus on key priorities





■ Priority 1: Excellent science

- World class science - foundation of tomorrow's technologies, jobs and wellbeing
- Support to develop, attract and retain research talent; access for researchers to the best infrastructures

■ Priority 2: Industrial leadership

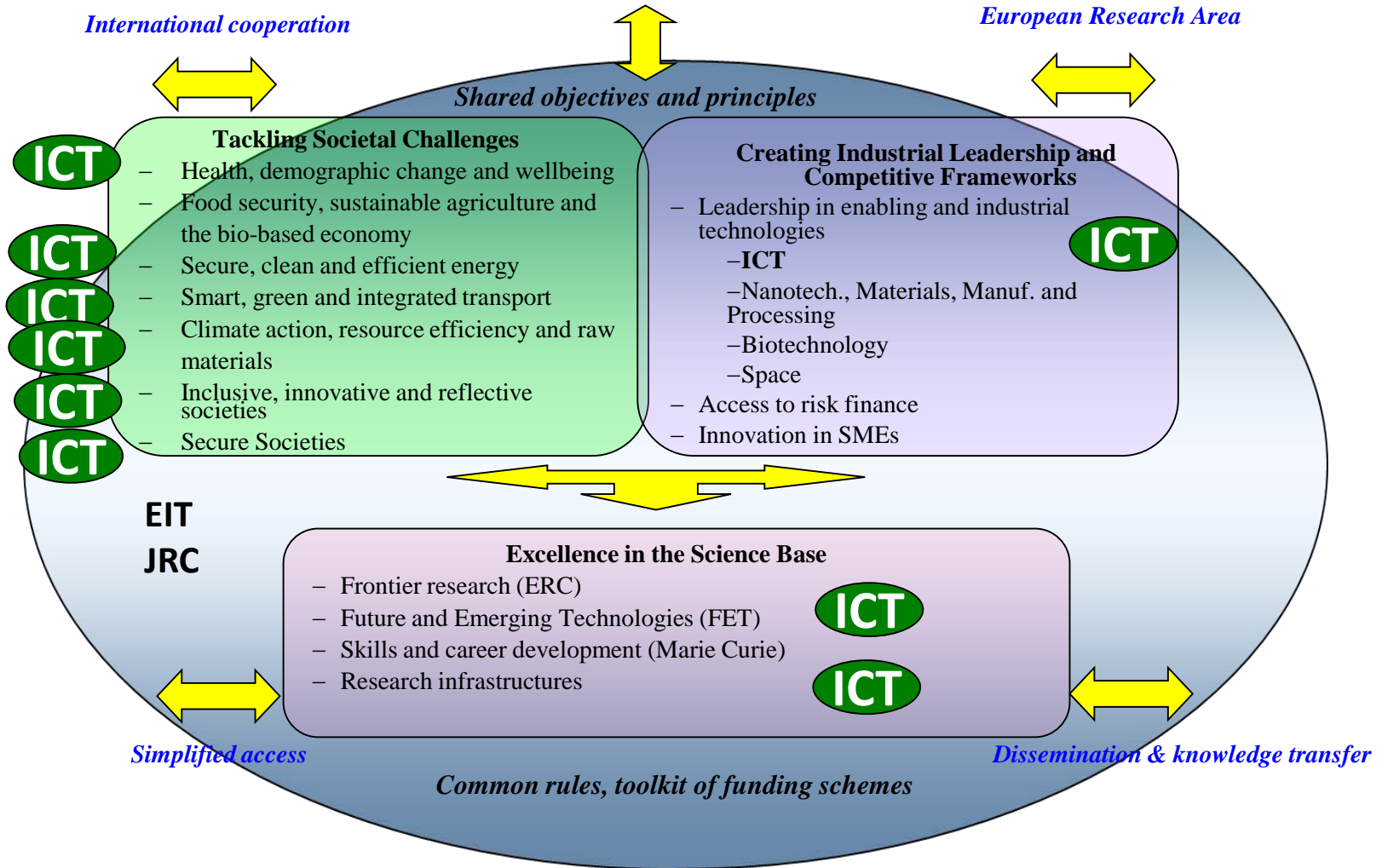
- Build leadership in enabling and industrial technologies
- Facilitate access to risk finance; attract more private investments in research and innovation
- More innovative SMEs to create growth and jobs

■ Priority 3: Societal challenges

- Respond to the policy priorities and societal challenges, aiming to stimulate the critical mass of research and innovation efforts for achieving EU policy goals
- Specific objectives: Health, demographic change and wellbeing; Food security, sustainable agriculture, marine and maritime research and the bio-economy; **Secure, clean and efficient energy**; Smart, green and integrated transport; Climate action, resource efficiency and raw materials; Inclusive, innovative and secure societies



Europe 2020 priorities





Participation made simpler:

- **Single set of rules for all participants**
- **Simpler funding rates for projects**
- **Easier access to applicants**
- **Uniform evaluation criteria**
- **Easier grant management**
- **Simpler rules**
- **Fewer and more targeted audits**



Time line, next steps:

- Vote on the Multiannual Financial Framework in the EP Plenary: September/ October 2013
- Vote on Horizon 2020 in EP Plenary: October/November 2013
- Finalisation of WP2014-2015: October/November 2013
- **ICT 2013 in Vilnius: 6-8 November 2013 – focus on H2020**
- Adoption by the Council: November/December 2013 *
- WP2014-2015 adoption and publication of first calls for proposals: December 2013
- Horizon 2020 national launch events: October 2013 to January 2014
- Closing of first call: spring 2014

* *Horizon 2020 is being adopted using the "ordinary legislative procedure" (formerly known as "co-decision") – see details on:*
http://ec.europa.eu/research/horizon2020/index_en.cfm?pg=h2020-timeline



Report from the Commission to the European parliament and the Council – Financial support for energy efficiency in buildings - COM(2013) 225

- **Conclusions from the examination of the European building stock, the existing financial support measures for energy efficiency in buildings and the different market barriers :**
 - **Situation differs significantly between Member States (building stock, financial support measures in place, relevant market barriers);**
 - **Increasing investments in building energy efficiency, many best-practice examples of instruments delivering cost-effective energy savings; but only limited information on the effectiveness of different financial support measures, both at EU and national levels;**
 - **Important barriers hampering further uptake of energy efficiency investments in buildings continue to be in place;**



The contribution of ICT to energy efficiency: local and regional initiatives

- Main conclusions:

- **ICT has potential to:**
 - assist in the delivery of a wide range of energy efficiency and sustainability in a myriad of ways
 - stimulate smart and inclusive growth by accelerating wider uptake and best use of innovative digital technologies and content by citizens, governments, businesses
 - overcome the hurdles hindering the development of an information society for all in support of EU policy goals
 - illustrate and validate the high value of digital technologies for the economy and society
 - foster the development of EU-wide markets for innovative ICT-based solutions and digital content notably in areas of public interest



- **Main challenges:**
 - relatively slow uptake of ICT innovations in the public sector
 - high fragmentation of relevant markets due notably to lack of an interoperability between ICT solutions deployed across Member States and other countries
 - direct involvement of responsible grid operators and utilities in the development and operation of ICT-based energy efficiency services
- **ICT projects can be easily replicated, with financial support from European, national, regional/local sources, including Structural Funds**



- **There are a growing number of practical examples of successes at local and regional level, varying widely in terms of:**
 - **types of situations that authorities are addressing**
 - **scale – from projects in a single office/building to city wide initiatives**
 - **complexity and type of ICT being used**
 - **status – from research to piloting/trialling to full scale roll out**
- **ICT is generally part of the solution, not the total one**
- **Behavioural change is widely recognised as being essential in many successful energy efficient projects**



Reducing energy consumption in buildings with ICT – analysis of data from EU pilot projects (SMART 2013/0073)

- **Purpose:**
 - To provide a comparative overview of various ICT solutions to achieve energy savings in buildings – public and social housings
 - Analyse finalised and on-going CIP projects in the area of ICT for energy efficiency
 - Analyse eeMeasure - study "Methodology for energy efficiency measurements applicable to ICT in buildings" – SMART 2011/0072
- **Requested cooperation of the CIP projects and eeMeasure**



If we develop and apply ICT badly, it could add to the world's problems. It could devour energy and accelerate climate change, worsen inequality for those who do not have access and increase pollution and resource use by encouraging ever more frenetic consumerism.

If we apply ICT well, the rewards could be enormous. It could help to enhance creativity and innovation to solve our problems, build communities, give more people access to goods and services and use precious resources much more efficiently.

(Peter Madden and Ilka Weißbrod, "Connected - ICT and sustainable development", April 2008)

Thank you for your attention!

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Disclaimer: The opinions in this presentation are those of the author and do not commit in any way the European Commission