







ICT and Energy
Efficiency for Residential
Districts:
a Smart City Perspective

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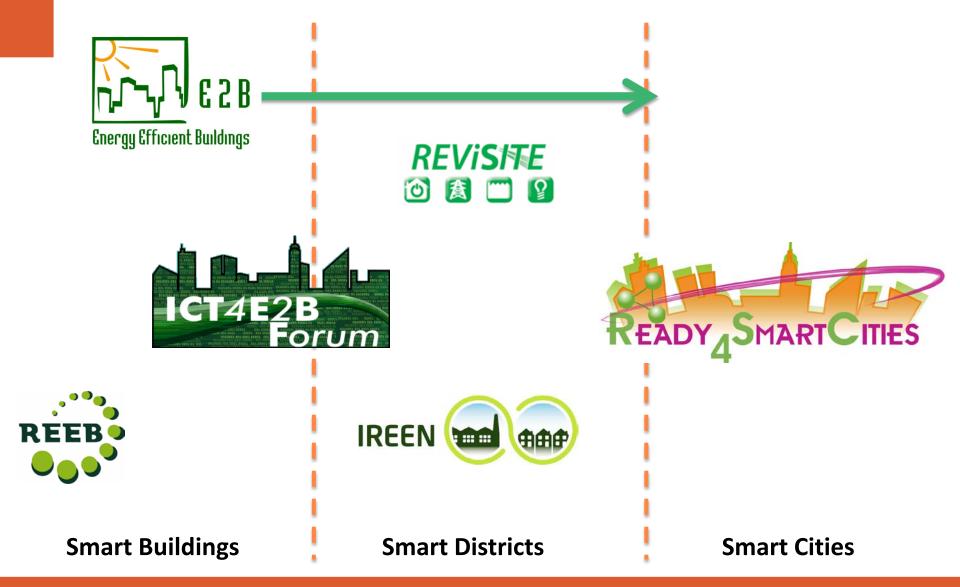
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Strategic Vision from Buildings to Cities







Towards Connected Buildings

Meeting EE requirements

Life cycle optimised EE performance

Consideration of EE in use and production in buildings as a component in surroundings

the way to optimise ICT enabled use and production of energy in buildings so that needed conditions are designed and provided by using renewable energy sources in energy production



ICT Applications Cover Building Lifecycle

Application areas	Α	p	р		i	C	a	t	i	0	n		a	r	е	a	S
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nanagement Construction Performance monitoring + Ø equipment **End of life** systems Structure envelope Design

Integrated processes, new business models & services

Integration of buildings systems

Integration with mobility, infrastructures, smart cities & citizens

Integration with grids & local/district energy systems

ICT infrastructures

Knowledge sharing, awareness, education & training

o by means Integration





EE neighbourhood elements

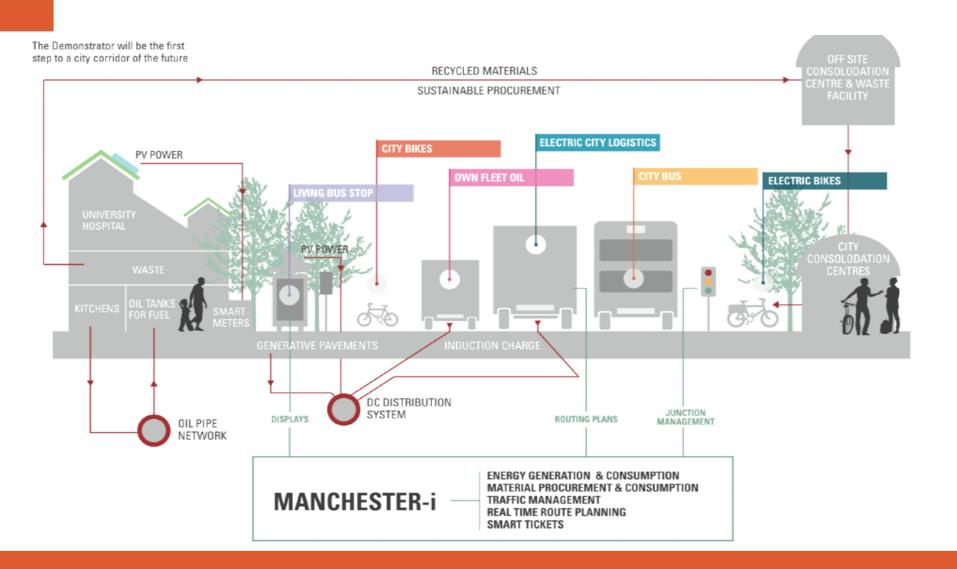








Smart Cities as Intersection of Energy, Transport and ICT









Key ICT needs: Implementation recommendations

Integrated EE neighbourhood planning process and tools

Supporting well informed EE living decisions for people

Holistic planning

and operation of

energy efficient

neighbourhoods

ICT for knowledge sharing in EE neighbourhoods

Training & education of experts

Tools for holistic energy management in neighbourhoods

Neighbourhood energy management systems integrated with buildings, smart grids and neighbourhood systems

Energy data for neighbourhoods





READY4SmartCities



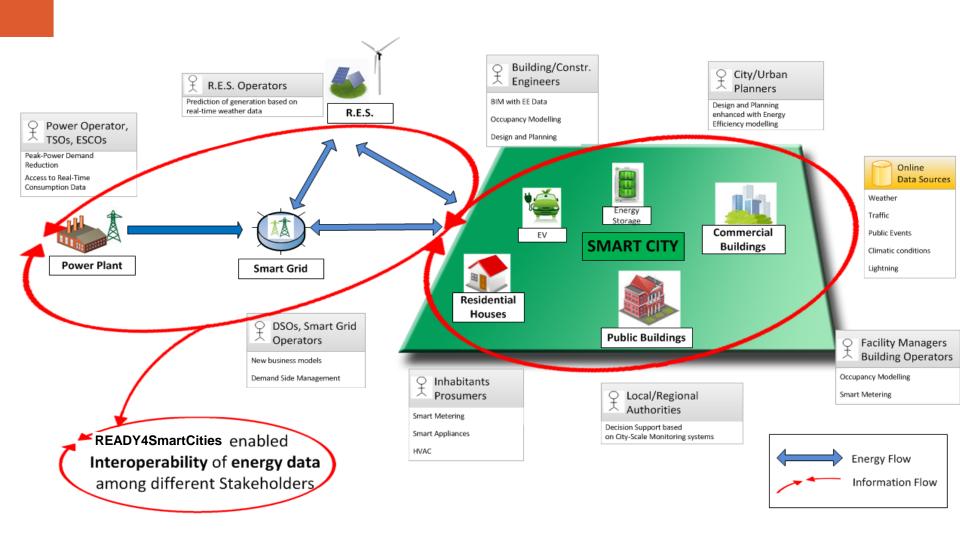
- Definition of a new data ecosystem that will accommodate cross-domain data and will allow the exploitation of such data at global scale
- Identification of a set of ontologies relevant to Smart Cities and the different requirements and guidelines on how to use (publish and interchange) data described according to those ontologies.
- An holistic and shared vision, allowing feasible step-bystep action plans for city authorities and other relevant stakeholder groups to develop and use ICT-based solutions for energy system in urban and rural communities towards future Smart Cities







Stakeholders Involvement

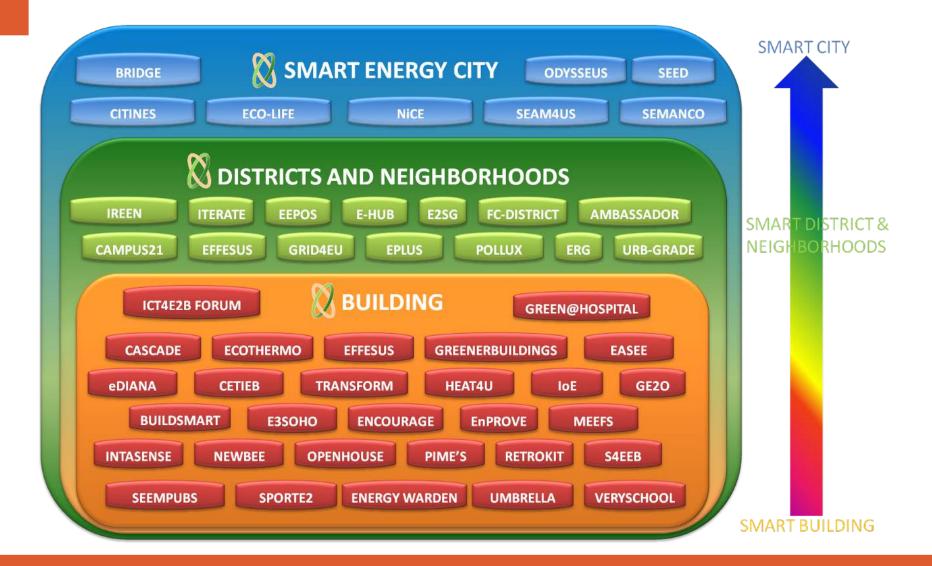








European Front-end Activities Coordination

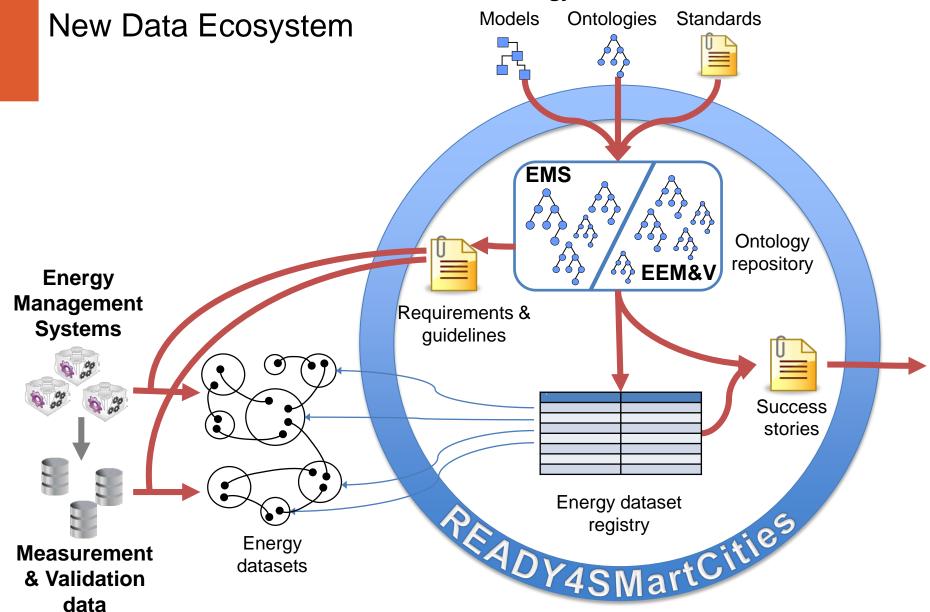








Energy-related Models









Holistic and Shared Vision



Stakeholders: users

Design

System delivery & rerenewal

Operation & management

Envisaged energy systems for smart cities













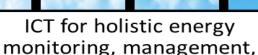






ICT for integrated design, optimisation, decision support, ...

ICT for integrated delivery, system integration, commissioning, ...



trading, guidance, ...

Short term Medium Long term term Short term

Medium term

Long term Short term Medium term

Long term

roadmap for ICT development & integration



Stakeholders: experts, decision makers, ICT providers







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Energy data for neighbourhoods







Knowledge Sharing Repositories

- Research and Technology Roadmap https://webgate.ec.europa.eu/fpfis/wikis/display/RTDRm ap/Home
- Smart Cities https://webgate.ec.europa.eu/fpfis/wikis/display/eeCities/ Home
- Validation and ee Measurement Methodologies https://webgate.ec.europa.eu/fpfis/wikis/display/ValMet/ Home
- eeSemantics https://webgate.ec.europa.eu/fpfis/wikis/display/eeSema ntics/Home





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