
Welcome to the
Smart Cities Workshop
REAL CORP, May 20th, 2011, Essen, Germany
ÖIR - Barbara Saringer-Bory, Ursula Mollay
AIT - Olivier Pol
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Programme, aims

Programme

- Introduction of participants
- Overview over Austrian Research, Smart Cities topics
- Presentation of Best Practice Example
- Discussion

Our benefit

- know how exchange, input for recommendations

Your benefit

- know how exchange, compiled Smart Cities topics overview

Haus der Zukunft PLUS

FFG

bmvit

Background: SmartCitiesNet project

Project partners

- ÖIR – Austrian Institute for Regional Studies and Spatial Planning
  Barbara Saringer-Bory <saringer@oir.at>
- AIT Energy – Austrian Institute of Technology, Energy Department
  Olivier Pol <olivier.pol@ait.ac.at>

Project duration

- January 2010 to April 2012

Objective

- Recommendations for a consolidated Austrian research framework in the Smart Cities topics

Subsidy: National, BMVIT, Haus der Zukunft Plus

ÖIR

AIT AUSTRIAN INSTITUTE OF TECHNOLOGY TOMORROW TODAY

Steps of work: SmartCitiesNet project

- Definition of Smart Cities topics
- Overview on current research activities related to the Smart Cities topics
- Formulation and assessment of future research topics
- Road map for Austrian research activities
- Networking and workshops
- Visibility of results: www.smartcities.at

Austrian Research

Selection criteria for projects considered:

- Scale of scope: from **small neighbourhoods to entire cities**
- Main topic of interest: **energy**
- Contribution to a **Sustainable Urban Post-fossil Society**

Stakeholders identified:

- Involved in one or more Smart City topics

Subsidy programmes by BMVIT:

Neue Energien, Haus der Zukunft, Ways2go, Take ÖV, klima:aktiv mobil,

EnEff:Stadt (DE)

Austrian Research

About **60 Austrian** (concluded) **projects** relevant

Main topics covered

9 Energy saving focussed projects

8 Demonstration projects

16 Conceptual projects

22 Mobility projects

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6 Tools

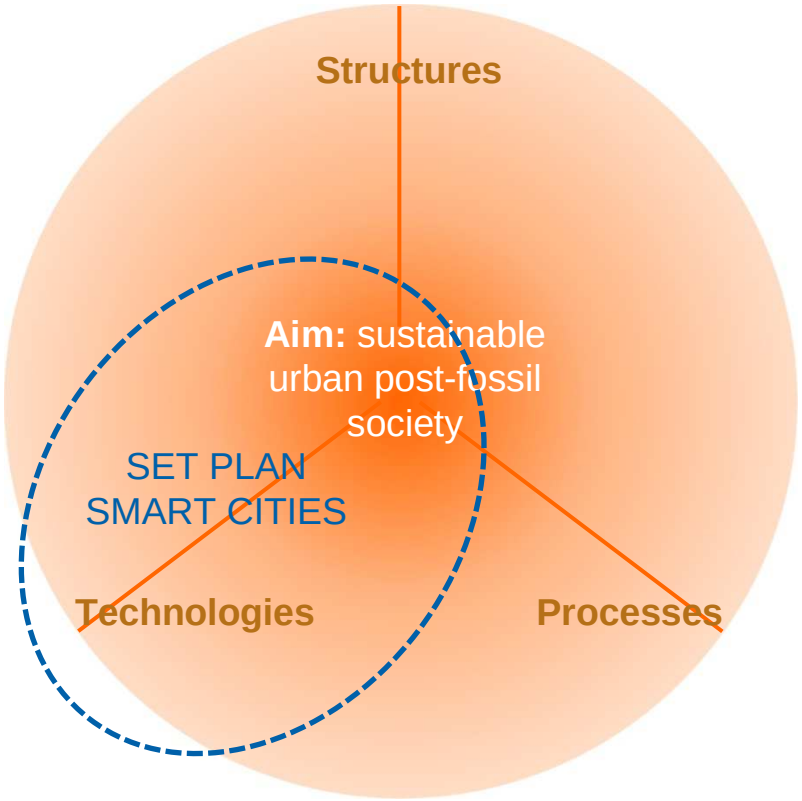
6 Regional scale

Austrian Research

Some selected projects:

ELAS, EFES – energy calculator for settlements	calculator, settlements
ImMoReg – innovative mobility strategies	concept, region
ZEUS – Zero Emission Urban Study 2020	concept, city part
INTENSYS – sustainable forms of living	concept, city part
Urban Future – overview on various smart city topics	concept
Power!DOWN – development scenarios	concept
CONCERTO projects – demonstration projects	implemented, city parts
qando – Passenger mobility management	implemented, city & region
Autofreie Mustersiedlung, Wien 21	implemented, city pa

Smart Cities Topics



Structures

- Integrated spatial, urban, transport and energy planning
- Tools for assessment, modelling and planning

Technologies

- Building, energy, transportation and communication technologies
- Research on components and systems

Processes

- Stakeholder process (politics, economy, decision-making)
- Analysis and optimisation of processes, development of business models
- Consideration of consumer behaviour, lifestyle, social skills, aging society

Identification of smart approaches

- Focus on **interfaces and integration**
- Integration and **coordination** between topics and **research fields**
- Significantly **higher increase in efficiency** compared to separate approaches
- Lowest possible use of resources with **highest possible benefit**

- **Not only limited to ICT issues!**

Fact sheets for research topics

- Research topics can treat:
  - **fundamentals** (i.e. knowledge improvement)
  - **methodological** issues (i.e. development of tools facilitating the handling of complex phenomena)
  - **implementation** issues (i.e. application of the knowledge gained)

- Research topics are structured according to:
  - their relevance in the Smart Cities context
  - the type of research activity
  - the implications on the development of Smart Cities

Strategic planning I

Urban morphology – density and compactness *e.g. multi-criteria optimisation of urban morphology*	Fundamentals
Mixed use planning and the Compact City concept *e.g. optimisation of functional mix in neighbourhoods*	Fundamentals, implementation
Micro-climate modelling of public and green urban spaces *e.g. understanding the implications of green spaces on urban climate*	Fundamentals, implementation
Strategic local energy planning *e.g. development of tools supporting an integrated urban and energy planning considering economic aspects*	Methodology, Fundamentals

Strategic planning II

- Long-term “smart city” vision — Methodology
  e.g. description of best practice examples, study on smart city stereotypes, moderation techniques
- Urban energy databases — Methodology
  e.g. urban energy mapping techniques, municipal energy statistics, monitoring
- Urban energy performance assessment — Methodology
  e.g. key performance indicators, sustainability indicators sets

Technology development and implementation I

- Building integrated renewable energy technologies
  e.g. component development based on material research
  — Fundamentals
- Introduction of building integrated renewable energy technologies in the building design process
  e.g. supporting schemes development
  — Implementation
- Intelligent energy distribution networks
  e.g. smart grids (electricity, gas, DHC)
  — Fundamentals

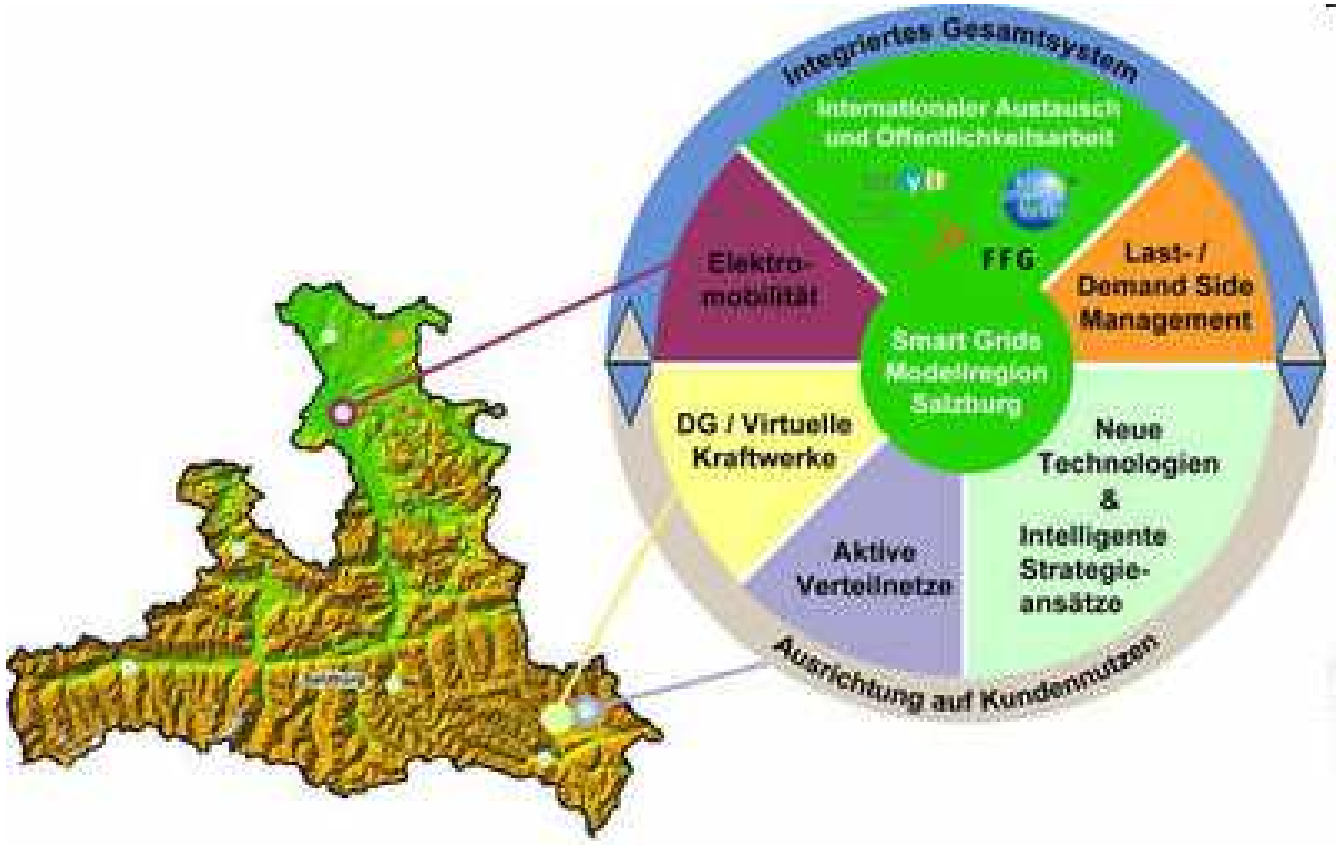
Technology development and implementation II

Development of intelligent energy distribution networks *e.g. supporting schemes development*	Implementation
Industrial symbiosis *e.g. use of waste low temperature heat, urban mining*	Fundamentals
Development of storage technologies *e.g. heat storage in district heating networks*	Fundamentals, Implementation
User behaviour *e.g. usage of smart meters, living in passive houses*	Fundamentals, Implementation

Technology development and implementation III

Integrated multi-modal transport systems *e.g. development of concepts*	Fundamentals
Demand-driven mobility services *e.g. implementation of concepts (services)*	Implementation
Alternative drive systems *e.g. technology development for electro-mobility*	Fundamentals
Market introduction of alternative drive systems *e.g. development of integrated and coherent supporting schemes for alternative drive*	Implementation
Passenger awareness and mobility management *e.g. methods to influence user behaviour*	Implementation

Smart Grids Modellregion Salzburg



Discussion I - plenary

- Questions
- Feedback
- Your experience
- Best Practice examples

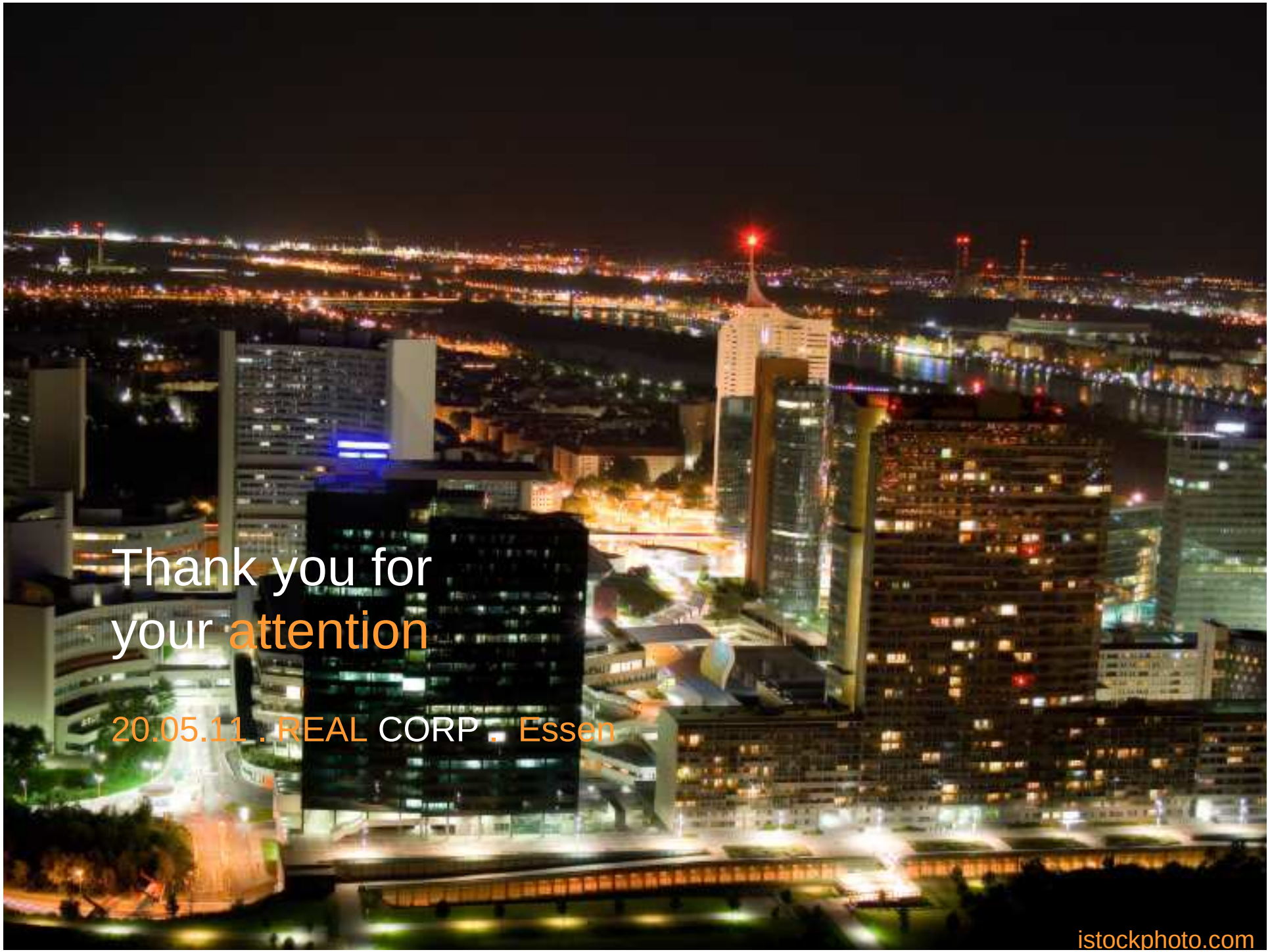
Discussion II – in groups

Group 1: Technology development and implementation

Group 2: Strategic planning

Questions:

- Your feedback to the topic compilation ...
- Is any **important topic missing**?
- Which topics should be **highly prioritised**, because they might significantly impact the development of smart cities?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