

MSI Smart Cities – Project Screening

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Why project screening?

- „Setting the scene“ – best practice examples in Europe
- Identify gaps/bottlenecks in terms of
 - Technologies
 - Financing
 - Stakeholder participation
 - Integrational aspects
 - Scientific methods
- Elaborate first „lessons learned“ and share experiences gained from projects
- Identify first flagship projects towards full Smart Cities spectrum
- Analyse the potential for better transnational cooperations
- Discuss transferability and replicability of current projects
- Create stimulus for the development of new and efficient financing schemes

Procedure behind

- Similar procedure to „programme screening“
- Templates sent-out by bmvit (Austrian ministry) to 4 national experts
- 4 National experts are to select „relevant Smart Cities projects“ in Member States:
 - One single project in city
 - Family of projects in city (if possible with a common strategic framework)
- No nomination of cities only → it's about projects in cities
- Timeframe:
 - Templates to be filled-in and returned to bmvit by end of April
 - Analysis of project screening till end of May
 - Presentation of results at workshop June (AIT Vienna)

Project selection criteria

To be discussed in break-out sessions

- Projects need to clearly have integrative aspect:
 - No single technology solutions
 - Several infrastructure layers (networks, buildings, supply, etc.)
 - Multiple stakeholder involvement
- Projects allocated in cities / urban areas → urban character must be given
- Projects of European dimensions in terms of
 - Transferability
 - Replicability
 - Impact
 - Visibility
 - Innovation (technologies, concepts, etc...)
- Ideally fulfillment of „Smart Cities spectrum“ to the maximum extent

Structure for project screening

To be discussed in break-out sessions

- 3 dimensions of Smart Cities framework (levels of granularity)
 - Urban processes
 - Urban development concepts
 - Urban technology integration

- Relevant development stages/levels of Smart Cities projects:
 - Knowledge generation
 - Method development
 - Implementation

- Urban infrastructure layers:
 - Integrated Urban planning (city wide)
 - Urban energy networks
 - Energy-efficient interactive buildings
 - Urban energy supply technologies
 - Mobility
 - Others (waste, water, etc.)

Matrix for project screening

To be filled-in for each project/project family

Infrastructure layers

Development stages

Smart Cities dimensions –
Level of granularity



Creation of „Living Labs“

What is covered by....

- Urban processes:
 - Stakeholder processes with broad participation (politics, economy, experts, city authorities, housing associations, industry, research, decision makers, etc...)
 - Innovation processes and their steering/guidance
 - Vision exercises and foresight processes
 - Business models and legal framework
 - Scenario analysis
 - City roadmaps and strategies
 - Inclusion of socio-economic aspects
 - Aiming for quality of life for inhabitants
 - Organisational innovation
 - Interaction with other cities, sharing of experiences

What is covered by....

- Urban development concepts
 - Masterplanning activities for specific neighborhoods, districts or entire city
 - Analysis energy generation – distribution – consumption in specific areas of town from a planning point of view
 - Feasibility studies
 - Technical potential analysis
 - Simulation and modelling activities
 - Definition of concrete actions to be taken in urban infrastructure

- Urban technology integration
 - Topics according to Smart Cities Technology Vision 2050
 - Integration of technologies into energy system
 - Interaction component – system
 - Detailed modelling and simulation at component level
 - Detailed design and specification of components and systems
 - Role and use of ICT
 - Cascade use of resources, energy management

What do we mean by....

Knowledge generation	Method development	Implementation
<ul style="list-style-type: none">▪ Knowledge gain through new interdisciplinary approaches▪ New scientific findings regarding functionality of „Smart Cities“ (4 infrastructure layers)▪ Creation of „Living labs“▪ User acceptance▪ Creation of new basis for innovative urban energy planning▪ Identification of new technology requirements▪ Analysis and interpretation of implementation processes	<ul style="list-style-type: none">▪ New tools supporting city transformation▪ GIS based planning tools▪ Energy flow simulation tools▪ Focused on system analysis▪ New funding mechanisms▪ New tools capturing increased complexity of integrated urban planning▪ Definition of KPIs▪ New monitoring concepts & data analysis	<ul style="list-style-type: none">▪ Concrete realisation of smart cities projects▪ Operation of systems▪ Standardisation▪ Application of new processes/concepts▪ Technology implementation▪ Enabling energy management▪ Monitoring in operation

What we are interested in

To be discussed in break-out sessions

- Discuss first best practice examples of Smart Cities
- Fine-tuning of project selection criteria
- Thematic focus and integrative aspect of project
- Identify underlying processes
- Discuss development stage of project

Example: Smart City Wien +

- Smart City Wien (fit4SET1):
 - Development of a smart city agenda for Vienna including a Vision for 2050, a Roadmap for 2020 and beyond and Action Plan for 2012-15
- Smart City Wien + (fit4SET2):
 - Implementation of this roadmap in the case of a new urban development (development and implementation of an integrated concept)
 - Further elaboration of the smart city agenda and inclusion of this agenda into the urban development plan (STEP 2014) and strategic planning documents
- Project submitted on 15.02.2012; planned to run 06/2012 – 11/2015

SMART CITY ASPERN - LEITPROJEKT



Decentralised energy production

Dezentrale erneuerbare Energie

Photovoltaik
Solarthermie
Micro Wind



Public lighting

LED Strassenbeleuchtung



Mobility concepts

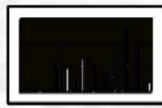
Mobilitätszentrale



SMART INTEGRATION

Interactive buildings

Smart Grid
Steuerung & Balanzierung
Steuerung Wärmepumpe
Gesteuertes Laden E-Fahrzeuge



Energiespeicher



NutzerInneninteraktion
„Consumer to Grid“
Home-Automation



DRAFT

Smart energy grids

Onsite energy storage

User interaction

Smart City Wien +

		Knowledge generation	Method development	Implementation
Urban processes				
	Urban Planning	X	X	X
	Networks	X		X
	Buildings	X	X	X
	Supply	X	X	X
	Mobility	X	X	X
	Others			
Urban development concepts				
	Urban Planning	X	X	X
	Networks	X	X	X
	Buildings	X	X	X
	Supply	X	X	X
	Mobility	X	X	X
	Others			
Urban technology integration				
	Urban Planning			
	Networks			X
	Buildings	X		X
	Supply			X
	Mobility			X
	Others			

Example: Smart Grids Model Region Salzburg

- Vision of a comfortable, intelligent and integrated "Smart Infrastructure"
- 16 already completed and ongoing projects
- Topics:
 - Active Distribution Networks
 - Intelligent System Approaches (heat networks, ICT networks)
 - Load and Demand Side Management (Building-to-Grid)
 - E-Mobility
- comfortable, flexible infrastructure with **customer** interest and acceptance in the front as well as **substantiated field experience**
- massive use of renewable energies and reduction of peak loads
- **innovation leadership for Austria** and accordingly export opportunities
- **reduction of greenhouse gas emissions** and resource consumption

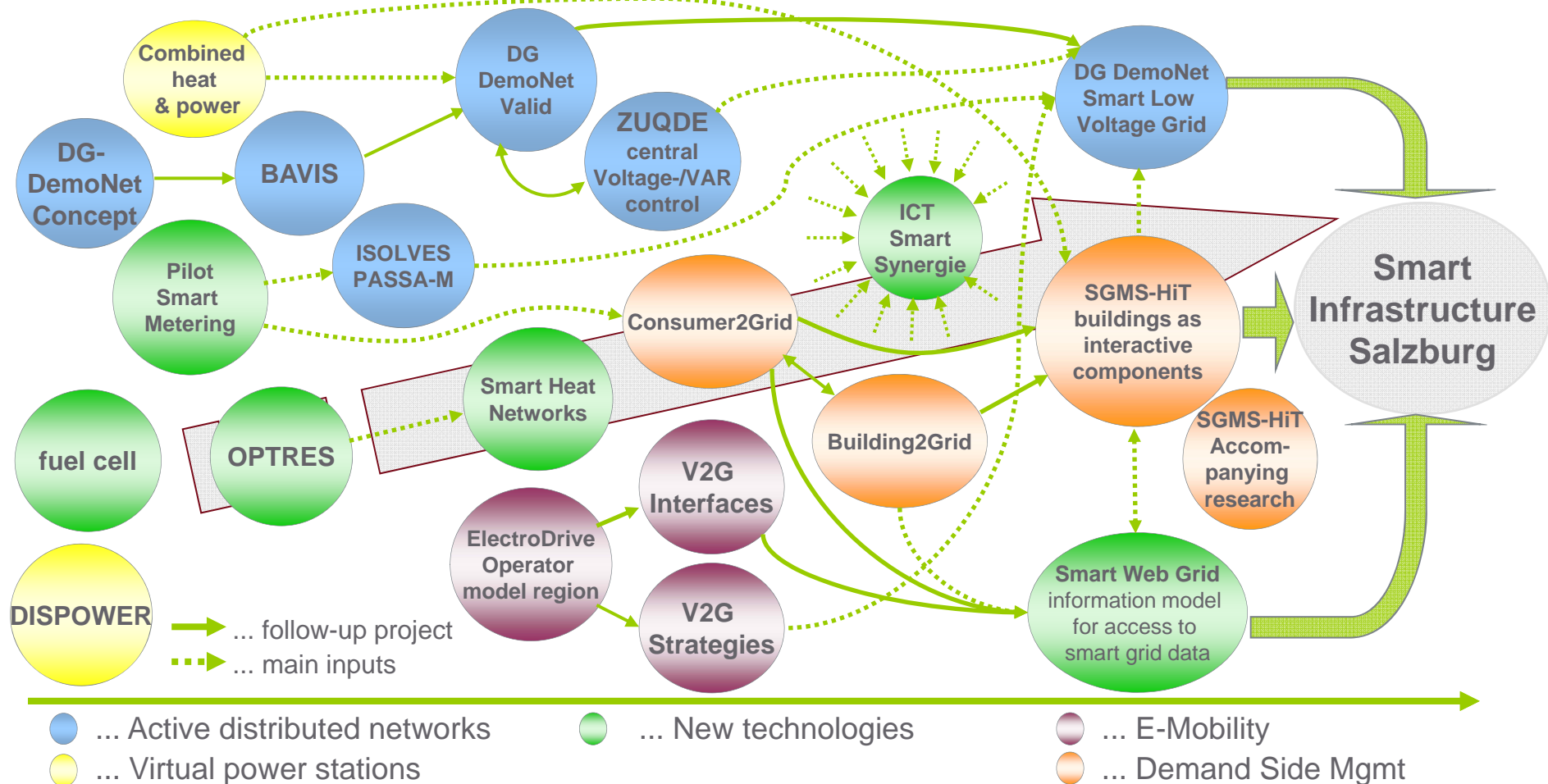
Smart Grids Model Region Salzburg

finished and current projects

Project bundle 2009 –
started 03-06/2010

Project bundle 2010 –
started 03 2011

Vision



Smart Grids Model Region Salzburg

		Knowledge generation	Method development	Implementation
Urban processes	Urban Planning			X
	Networks			X
	Buildings			X
	Supply			X
	Mobility			X
	Others			
Urban development concepts	Urban Planning			
	Networks			X
	Buildings			X
	Supply			
	Mobility			X
	Others			
Urban technology integration	Urban Planning			
	Networks	X	X	X
	Buildings	X	X	X
	Supply			X
	Mobility	X	X	X
	Others			

Salzburg Model Region

- Urban processes – Implementation: fit4SET 1 and stakeholder processes within the „Salzburg Model Region“ bundle of projects
- Urban planning: fit4SET1 and other 16 projects at a process level: vision, stakeholder process and interests
- Urban development concepts – Implementation:
 - master plan (energy concept) for XXX district (CALL HETTI)
- Urban technology integration – Knowledge generation:
 - Smart Grids talks (series of events presenting progress & outcomes of the project; analysis, lessons learned and replicable results)
- Urban technology integration – Method development:
 - building simulation, district heating planning, statistical consideration of energy consumers (involvement of AIT)
- Urban technology integration – Implementation: Building2Grid, Vehicle2Grid, Customer2Grid