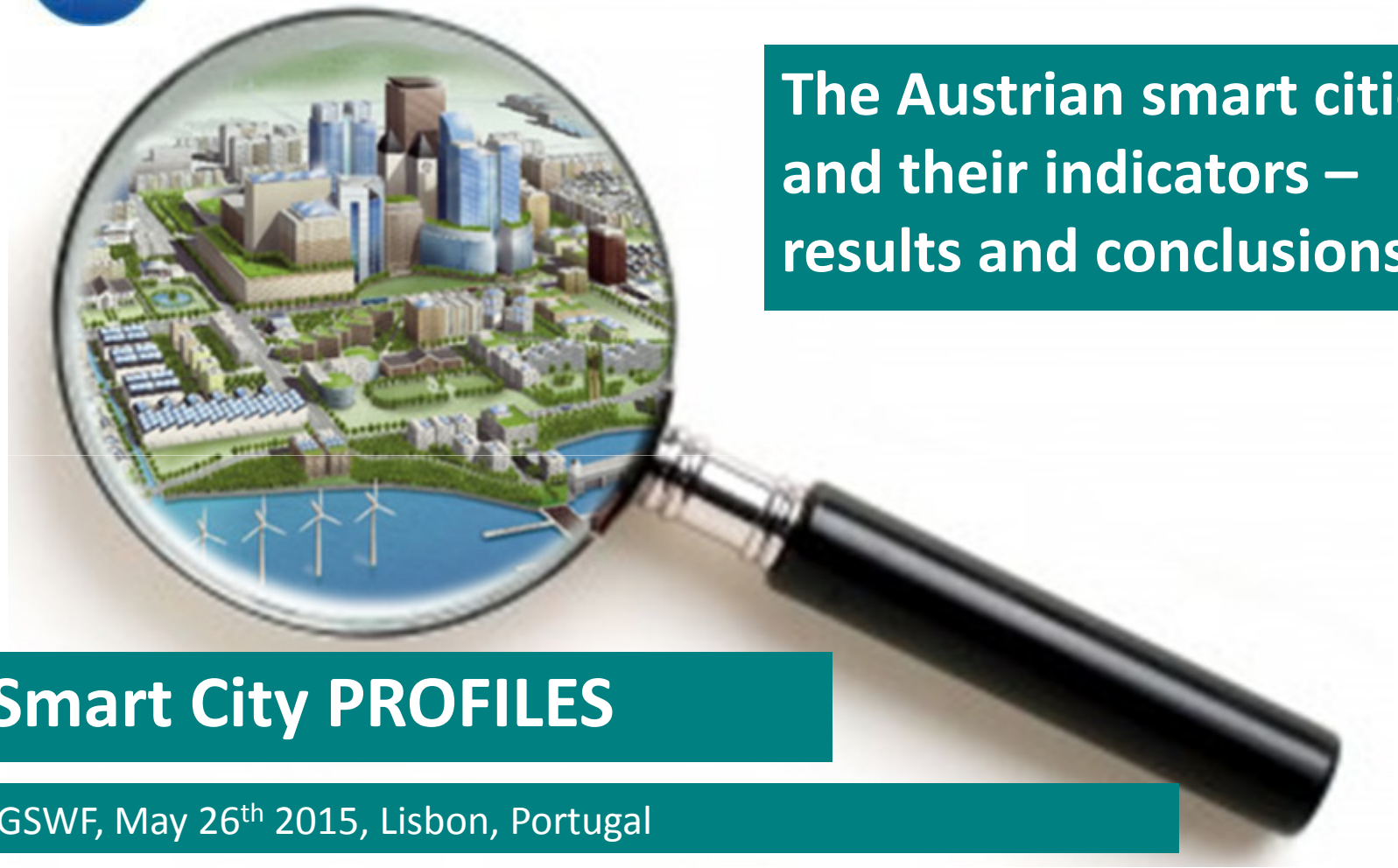

The Austrian smart cities and their indicators – results and conclusions

Smart City PROFILES

GSWF, May 26th 2015, Lisbon, Portugal

Andreas Littkopf ; Pia Thielen, Alexander Storch
Environment Agency Austria

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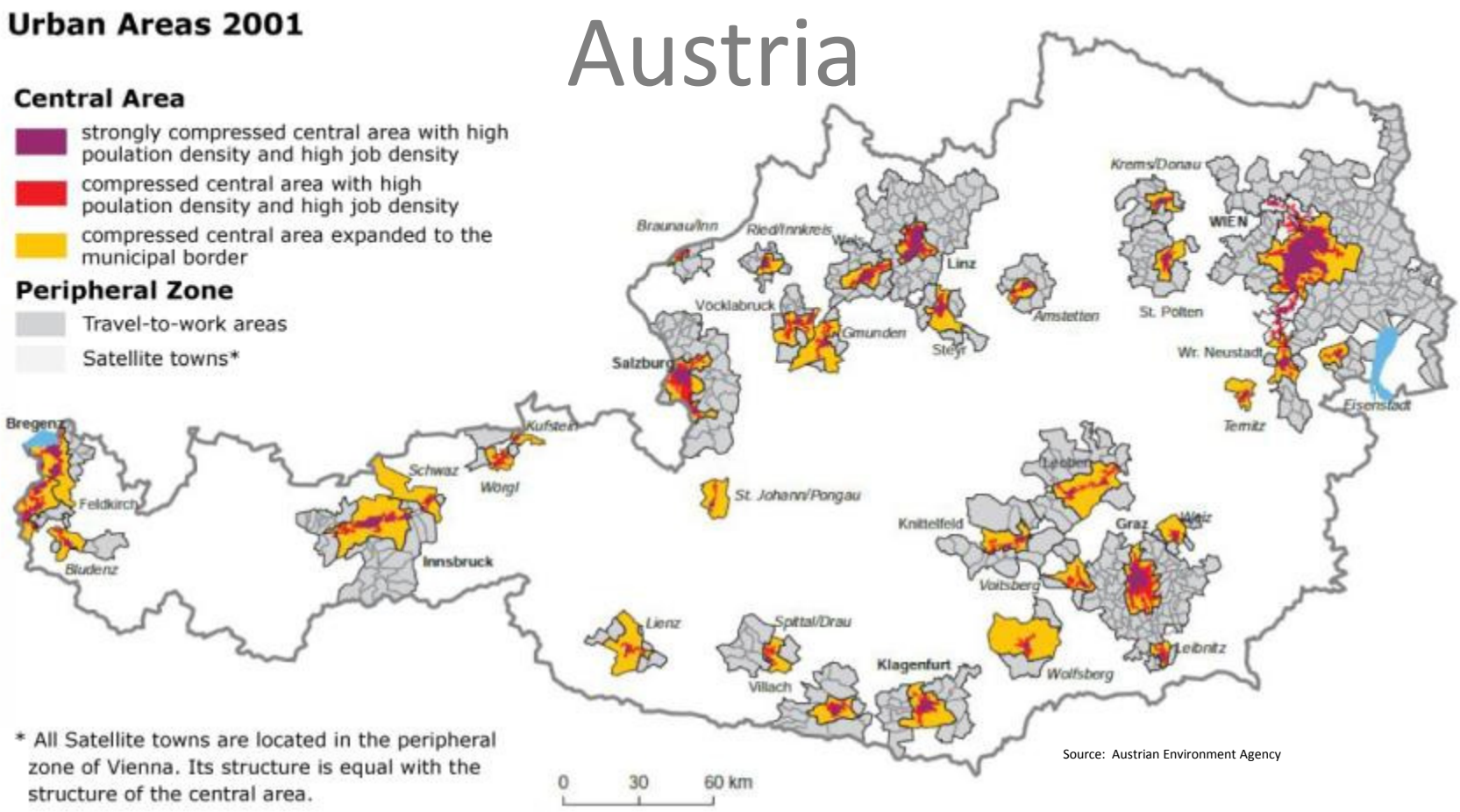
Total of 2102 communities and 8 499 759 inhabitants (2013-10-31)
Largest city and capital of Austria: Vienna (Wien) with 1 761 738 inhabitants
Second largest city and capital of Styria: Graz with 269 211 inhabitants
86 cities larger then 10 000 inhabitants, with 47.0 % share of total population

Austria



Source: Austrian Environment Agency

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What are Smart Cities ?

- Cities, which are ready to meet their economic, social and environmental challenges with implementation of **continuous learning** and **co-ordinated steering** the urban development at all relevant municipal activities.

- Cities, which strive to increase energy efficiency and renewable resources, to reduce environmental pollution or which plan and implement climate change mitigation measures applying multi-disciplinary **system thinking** and **participative approaches**.

- Cities, which starting transformation to an **attractive** and **intelligent** community regarding long-term policy targets improving **quality of live** for citizens and increasing **power to compete** for the economy.

PROFILES - Projektkonsortium

Umweltbundesamt	**Environment Agency Austria** **Project coordinator**
Österreichischer Städtebund	**The Austrian Association of Cities & Towns**
IFZ Interuniversitäres Forschungszentrum für Technik, Arbeit & Kultur	**Inter-University Research Centre for Technology, Work and Culture**
Umweltdachverband	**Environmental Umbrella Organisation Austria**
TU Wien - Department für Raumplanung & Energy Economics Group	**Vienna University of Technology – Department of Spatial Development, Infrastructure and Environmental Planning**
co2 – Werbe- und Designagentur	**co2 Advertising and Design Agency, Coproduction GmbH**

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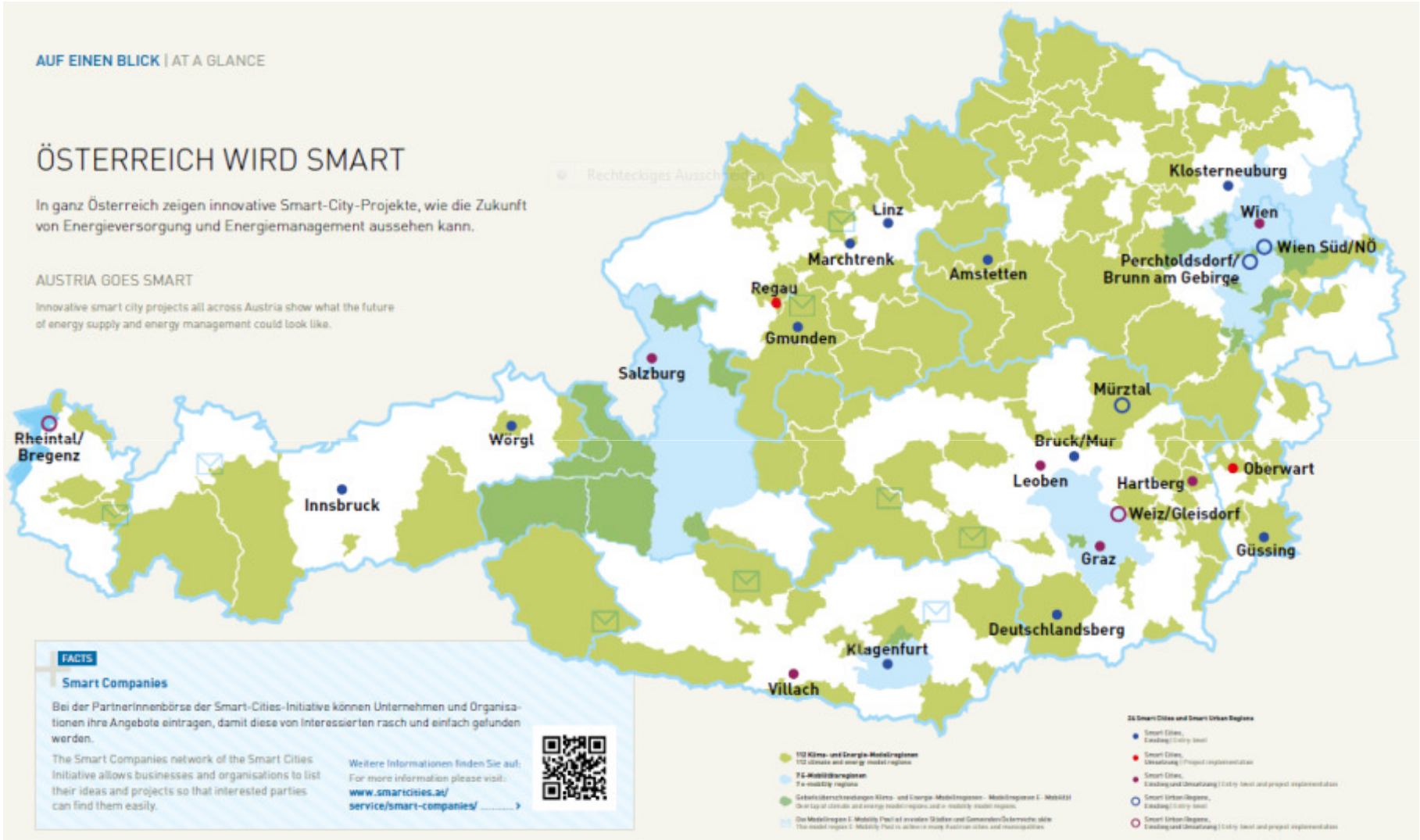
Promoted Smart Cities and Regions in Austria



Source: Smart Cities Initiative #2 2014, The Climate and Energy Fund, Austria

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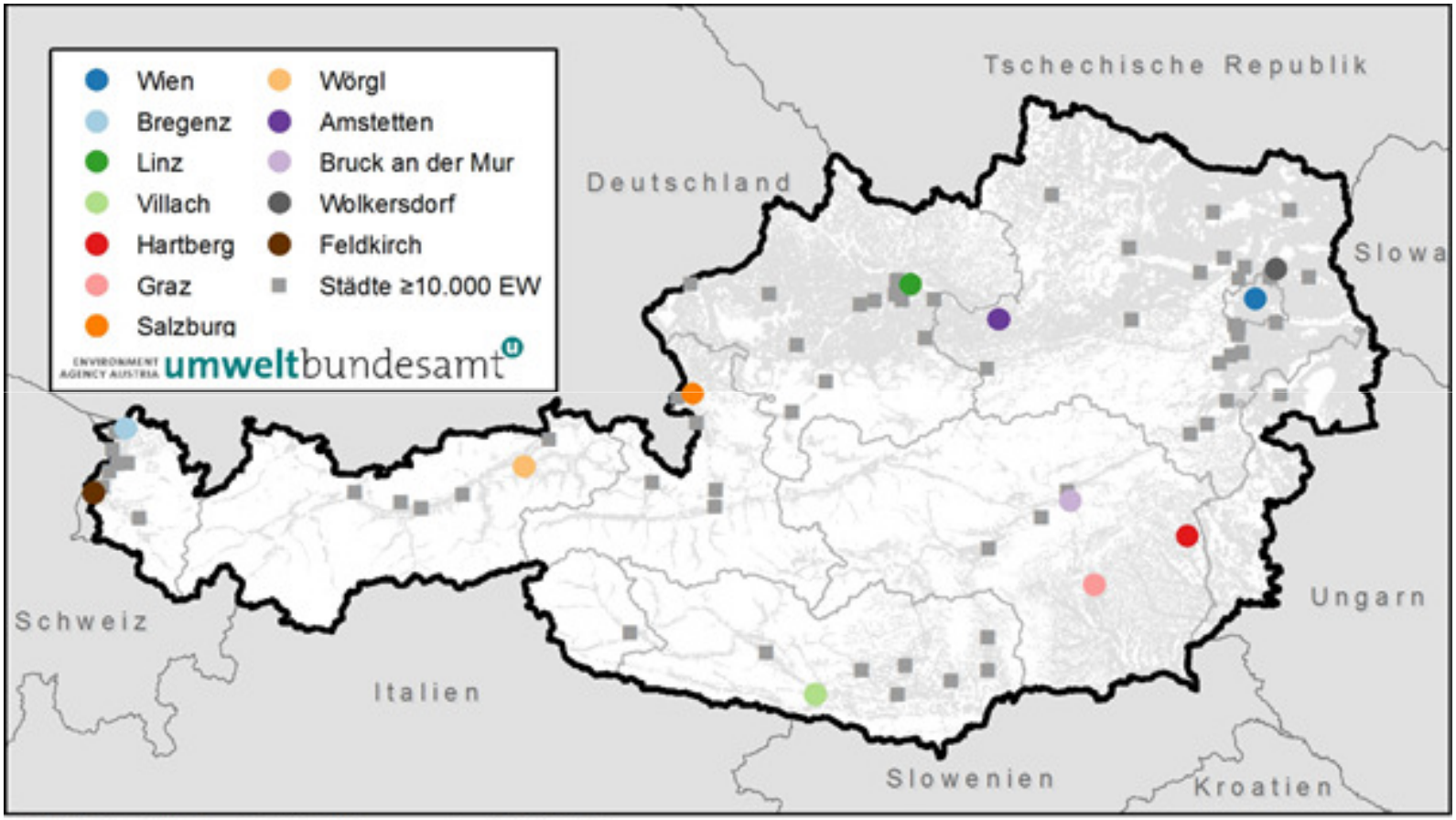
Participating cities



Quelle: Statistik Austria: Bevölkerungsstand 1.1.2012

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Benefits using indicators for city planning

- Identification of **strengths** and **weaknesses** with regard to areas of activity in urban development
  - Facts about the structure and performance of areas
  - Information about their change and reasons up to the present
  - Identification of city characteristics and up-coming trends
- Supporting **objectified communication**: Targeted discussions and support in deciding which action is needed
  - regarding certain topics within these areas of development setting priorities
  - in defined areas of development or as an integrated overview
- Basis for **monitoring**

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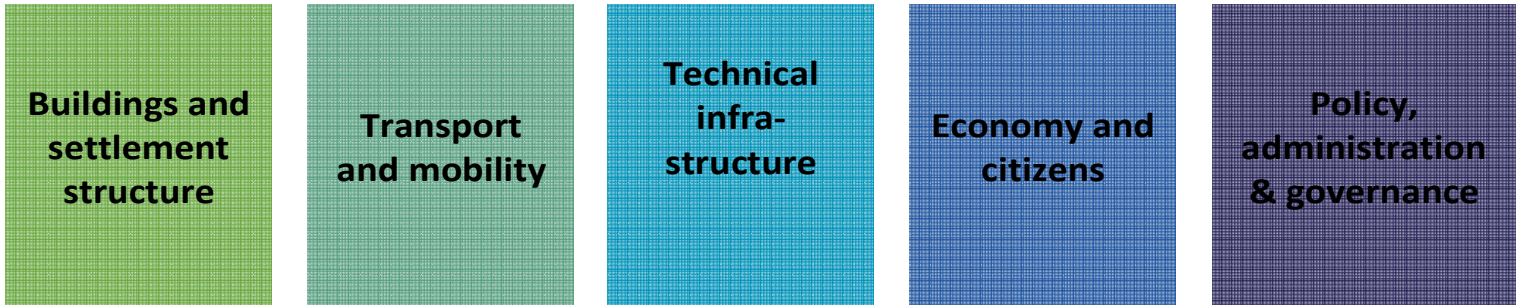
Dedicated areas of activity in urban development



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Components of the areas of urban development

Buildings and settlement structure	Transport and mobility	Technical infra-structure	Economy and citizens	Policy, administration & governance
Infil development versus urban expansion	Modal Split	Electricity consumption	Innovation (patents)	Environmental information
Changes in population density	Basic infrastructure	Recycling rate	Research (EU projects)	Vision, strategy, activities
Compact residential clusters	Sustainable mobility	Waste generation	Creative industries	Municipal subsidies to mitigate climate change
Energy efficient buildings	Parking management		Education network	Involvement of city administrations
			EMAS-certified businesses	Cooperation between cities and their surrounding areas

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Presentation of results

A Smart City Profile consists of

- **Basic data** of a city
- **Spider diagram** showing all areas of development including most relevant evaluation summaries
- **Five spider diagrams for each area of development** including some explanations and interpretation
- **Individual components** (optional) as a starting point for targeted, in-depth analysis

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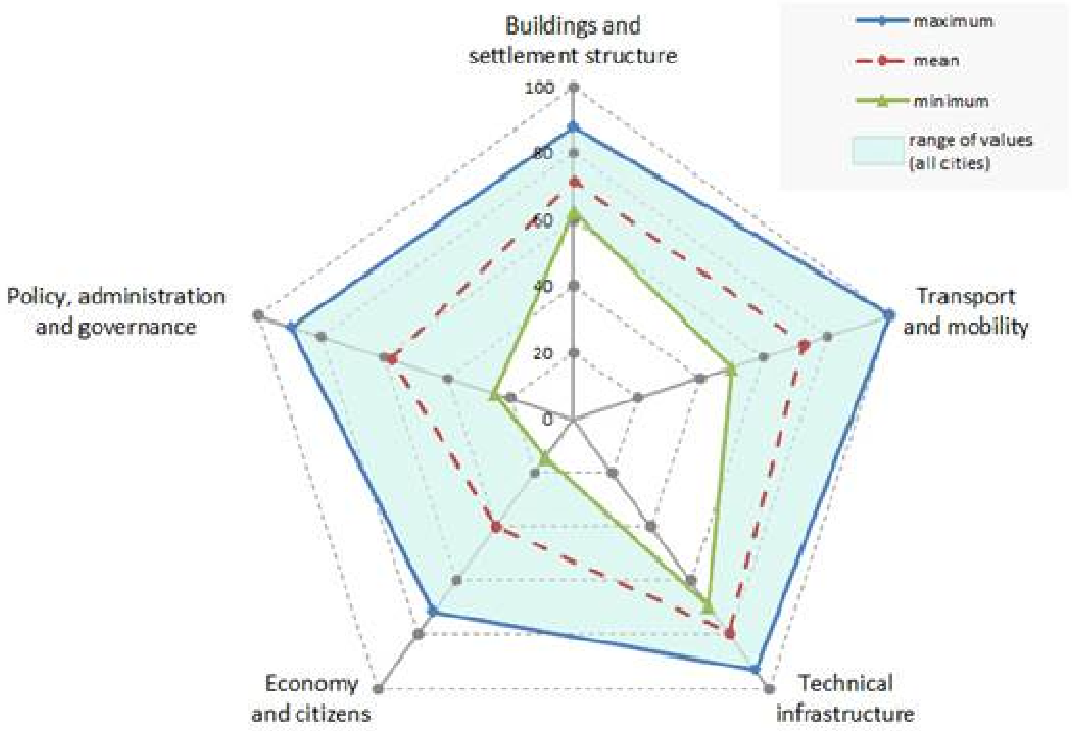
resulting presentation – spider diagram



City Profile for the 12 cities, which participated in the development of smart cities indicators and city profiles.

The diagram shows the range of results for the 12 participating cities across the 5 core areas of activity in urban development.

It allows cities to make better evaluations of their current status and their development in relation to defined indicators.

The maximum of all core areas/indicators (100) gives the fictitious smartest city.

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Example: **Buildings & settlement structures**

Overview and decription of indicators

GS 01 **Infill development vs. urban expansion**

GS 02 **Changes in population density**

GS 03 **Compact residential clusters**
Relation: principle domicile per building

GS 05 **Energy efficient buildings**
share of improved buldings/reconstruction potential
(building envelope)

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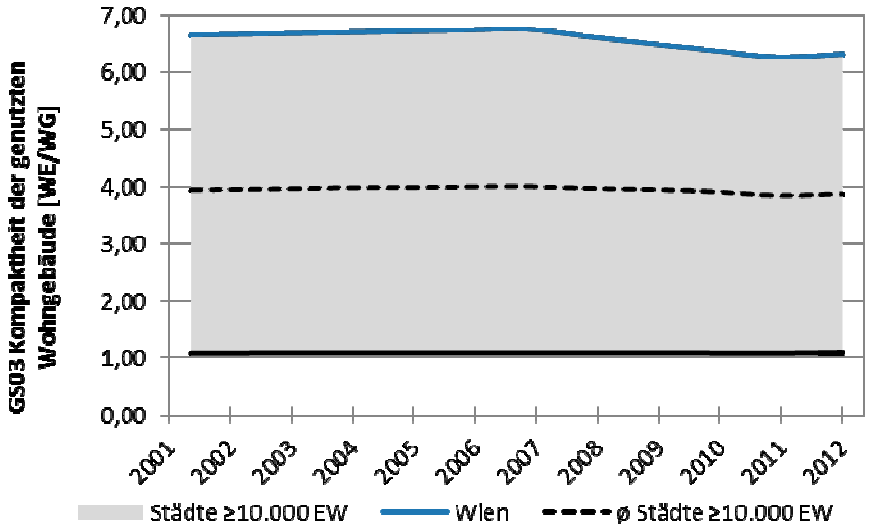
Compactness of residential clusters

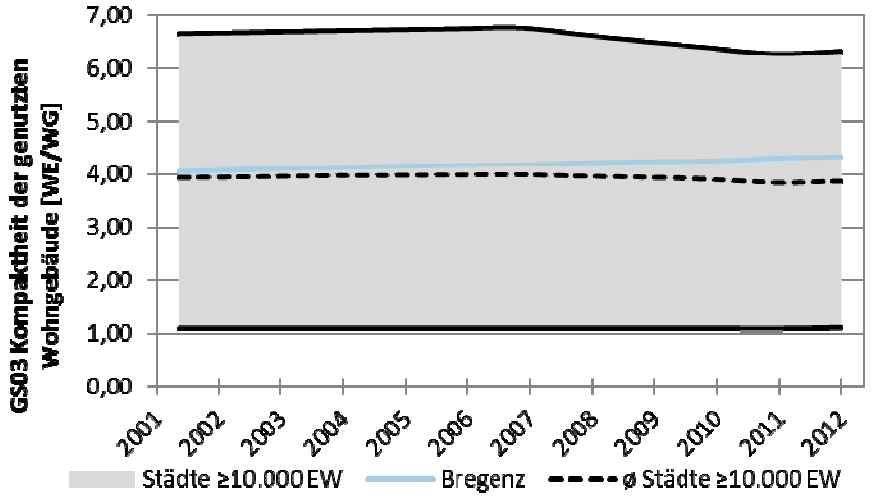
Vienna

Dense city centre and high number of citizens = high compactness, with decreasing trend



Bregenz

Good compactness of 4,32, increasing trend



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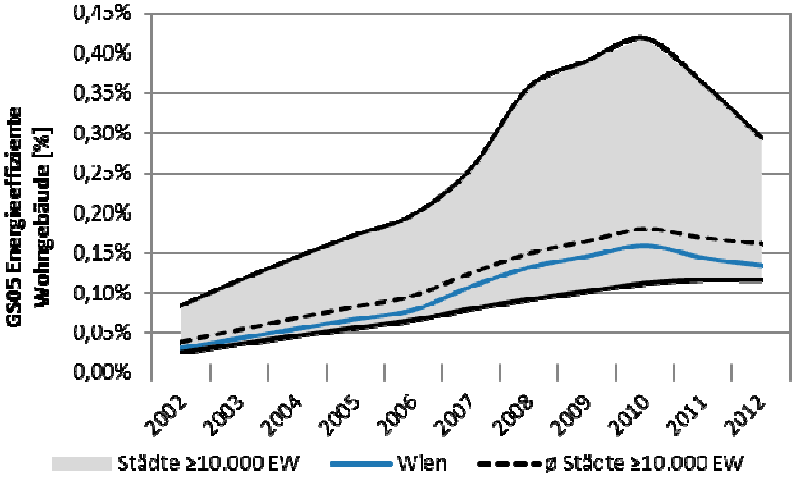
Energy efficient buildings

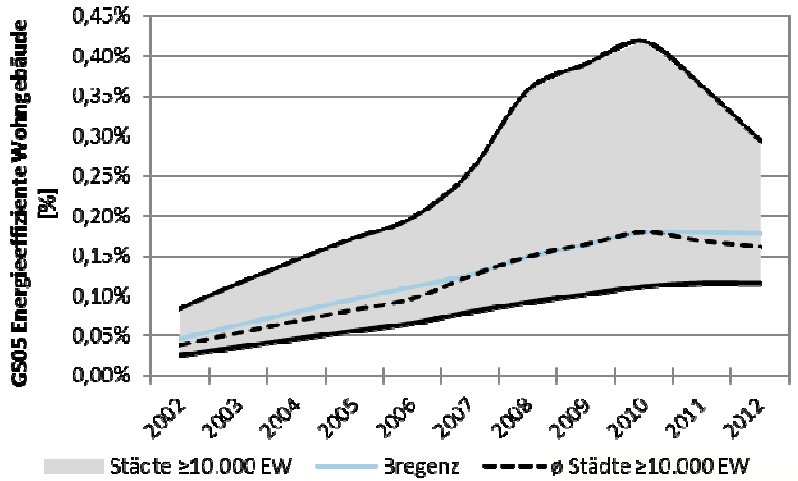
Vienna

0,13%, is below the average of communities >10.000 inhabitants



Bregenz

0,18% , is slightly better than the average of communities >10.000 inhabitants



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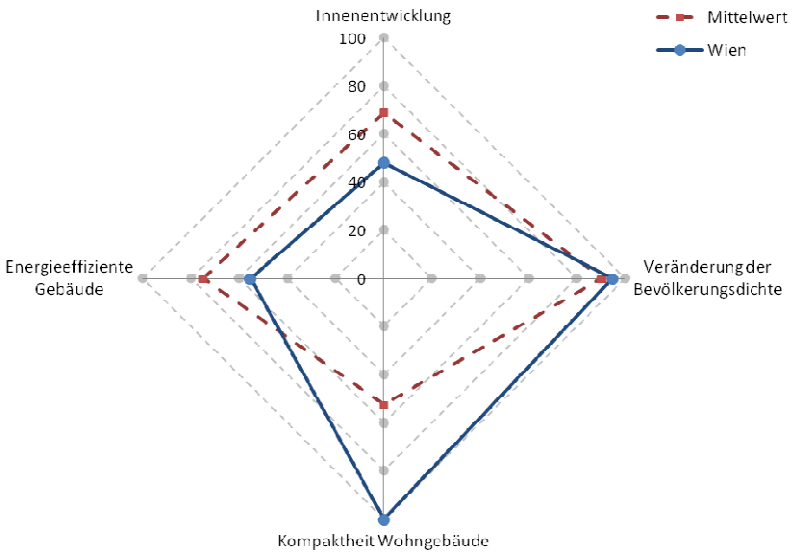
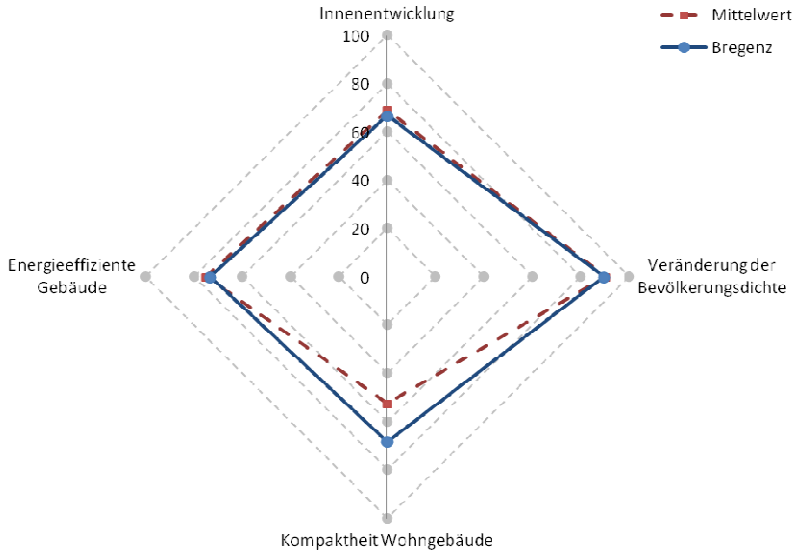
Buildings & urban patterns - Profiles

Vienna



Bregenz



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Buildings & urban patterns - Analysis

Vienna

- Slight increase of population in less dense areas
- Strong increase of population density in urban area (administrative border)
- High compactness and high number of inhabitants
- New residential and non residential buildings in urban periphery
- Share of potential energy efficient buildings is below the average of communities > 10.000 citizens

Bregenz

- Compact urban patterns and increasing inner city development
- Moderate increase of population density and strong increase of compactness
- More apartment houses than single family houses
- Compactness higher than the trend
- Share of potential energy efficient buildings is above the average of communities > 10.000 citizens

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measuring cities change from a policy perspective

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supporting integrated urban development

- Makes urban development and results **measurable** and **transparent**
- Encourages the **involvement** of relevant stakeholders
- **Fosters exchange** of experience and knowledge gain through an analysis of strengths and weaknesses
- Focuses on potential **needs for action** in urban development areas
- **Supports** strategic goals, implementation-oriented concepts and the resulting activities
- Reliable **Decisions** are based on facts
- Professional and visible **communication** of activities and results

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interaction with other integrated approaches

Examples of related policy issues and methodologies using integrated assessment based on indicators are

- Quality of live in cities
- Multifunctional eco-service optimisation of urban regions
- Urban Scenarios, analysis of Driving Forces and Horizon Scanning
- Resource efficiency over life-cycle and ecological footprint
- Climate Change mitigation and adaptation
- Vulnerability, Adaptability and Resilience

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