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BIM digital competencies to evaluate and improve the energy efficiency of European buildings.
A digital way towards positive energy districts

# Climate Neutral & Smart Communities

Speaker: **Dr. Dorin BEU**

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ALBA IULIA
Ayuntamiento de Ceutí
UNIVERSITATEA TEHNICĂ DIN CLUJ-NAPOCA
VILNIAUS STATYBININKŲ RENGIMO CENTRAS
Universidad Politécnica de Cartagena
RAMBOLL

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# H2020 CoME EASY 2018-2021


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Vama Buzăului
Iași
Alba Iulia
Cluj-Napoca
Turda
Gherla
Sighetu Marmatiei
Oradea
Buteni

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# Increase importance of communities:

Public building management (schools, hospitals, etc.)

Public transport, alternative transport

Water supply, district heating, public lighting

Improving energy efficiency in multi-dwelling buildings

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# Step 1: Professionalization of energy efficiency departments

## Combination of transdisciplinary knowledge involving continuous training and the possibility of having one's own budget and a certain degree of freedom

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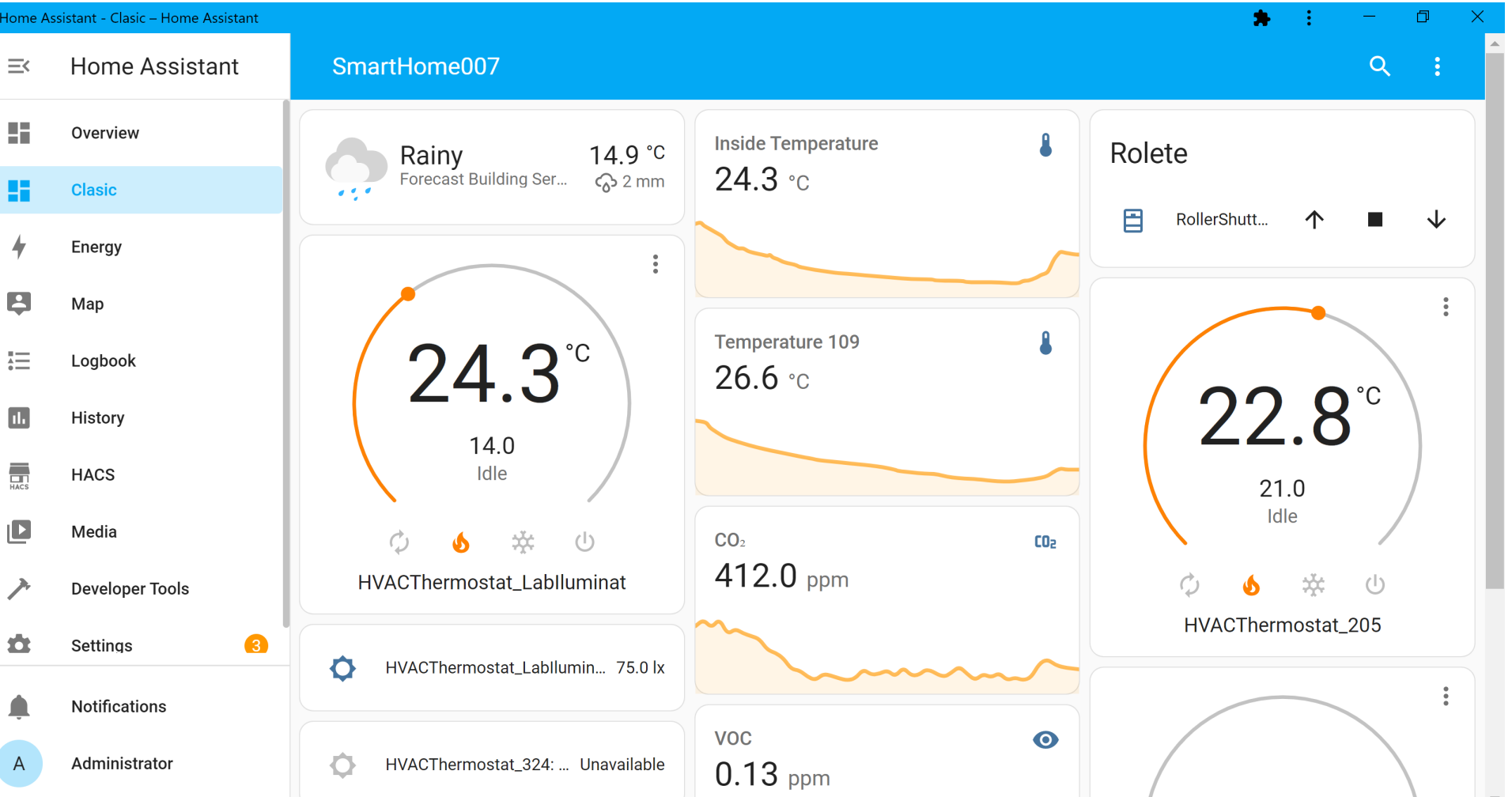
# Step 2:
# Monitoring the existing situation



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# Step 3:
# Prioritization of energy efficiency projects

## Priority for ROI under 3 years, which lends itself to investments from the City Council budget

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# Step 4:
# Use of energy efficiency project financing programmes

## For projects with a ROI of more than 3 years

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# Step 5:
# The importance of pilot projects

## For innovative smart city projects

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# Step 6:
# Communication with citizens

**Communication at the project phase**
**In the implementation phase, many projects have disruptive effects that need to be communicated, as well as direct benefits to citizens from project completion.**
**There are groups with diverging interests (motorists/public transport/cyclists)**

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# Step 7:
# Feedback and corrections

## Following the pilot projects, an analysis of the positive and negative sides must be made

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# Step 8:
# System maintenance

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# european energy award comunitate sustenabilă

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SWISS-ROMANIAN COOPERATION PROGRAMME

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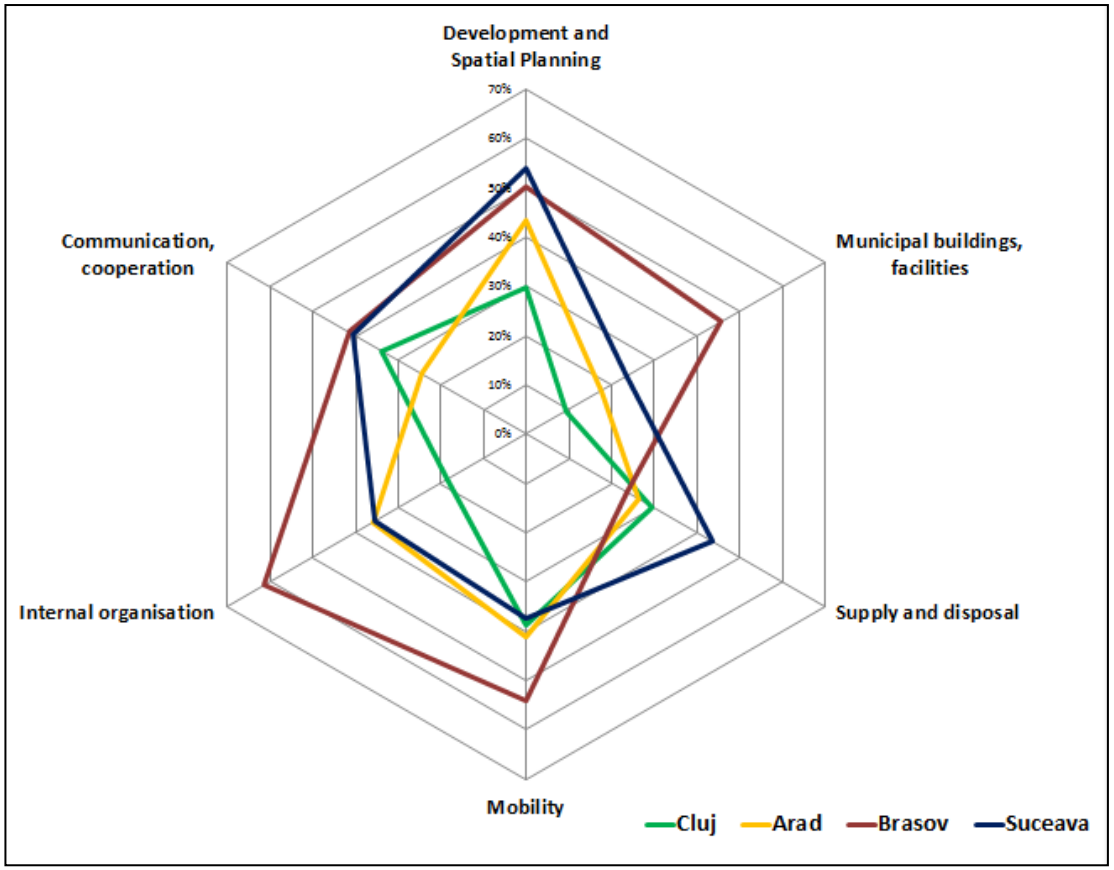
# RO-EEA – cele patru orașe în 2012

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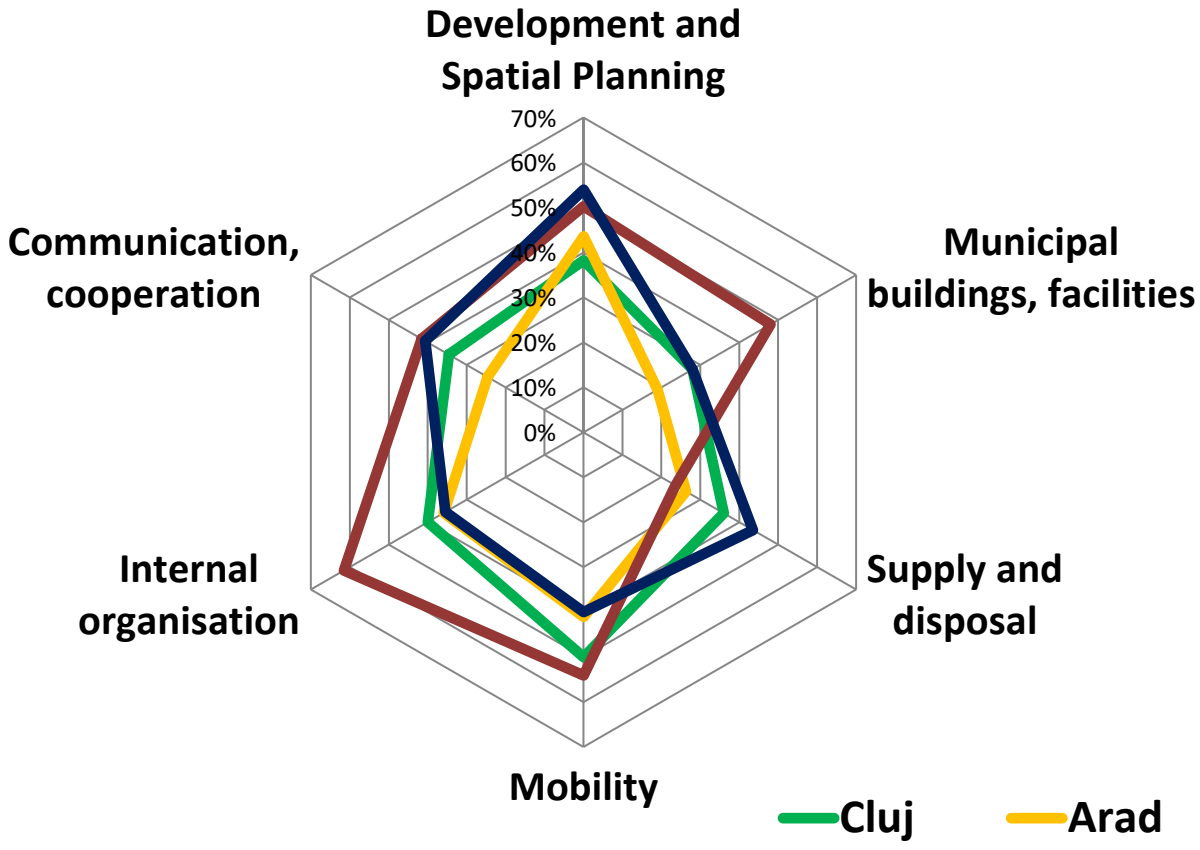
# RO-EEA – Cluj-Napoca in 2012(2012 – 28%, 2016 – 36% și 2018 aprox. 40%, 2022 – 45%)



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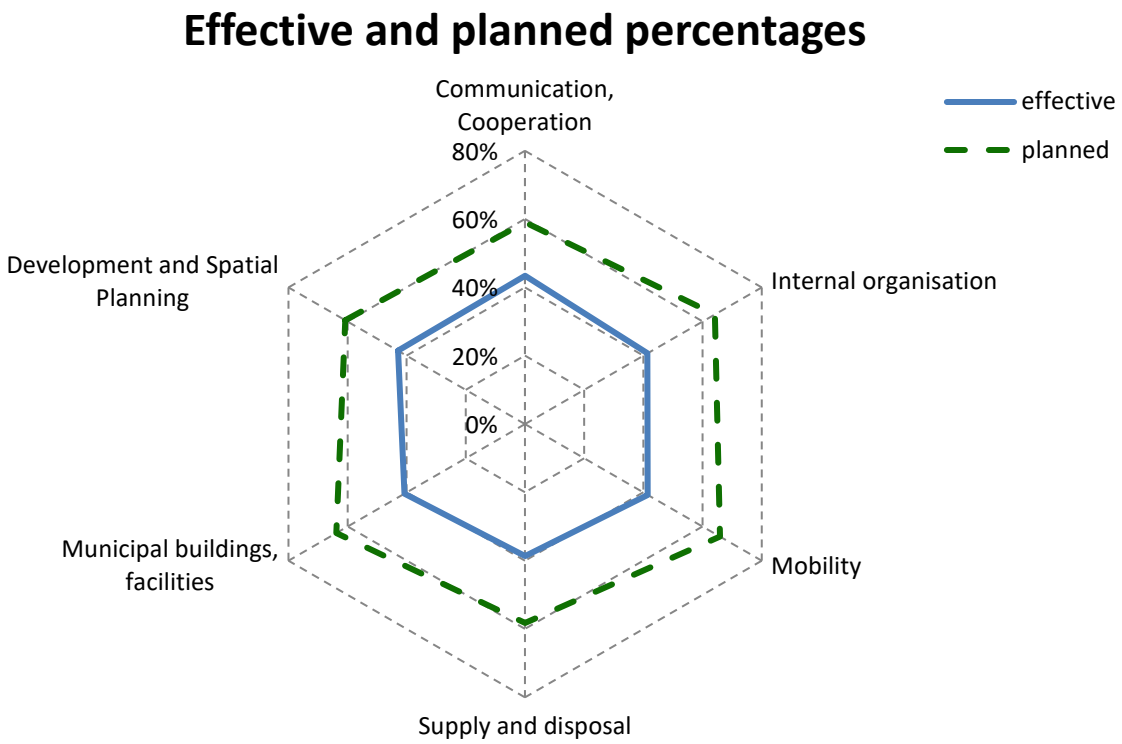
# Alba Iulia – gradul de îndeplinire/domeniu

Puncte realizate (din numărul total de puncte maxim care poate fi obținut) exprimat in %

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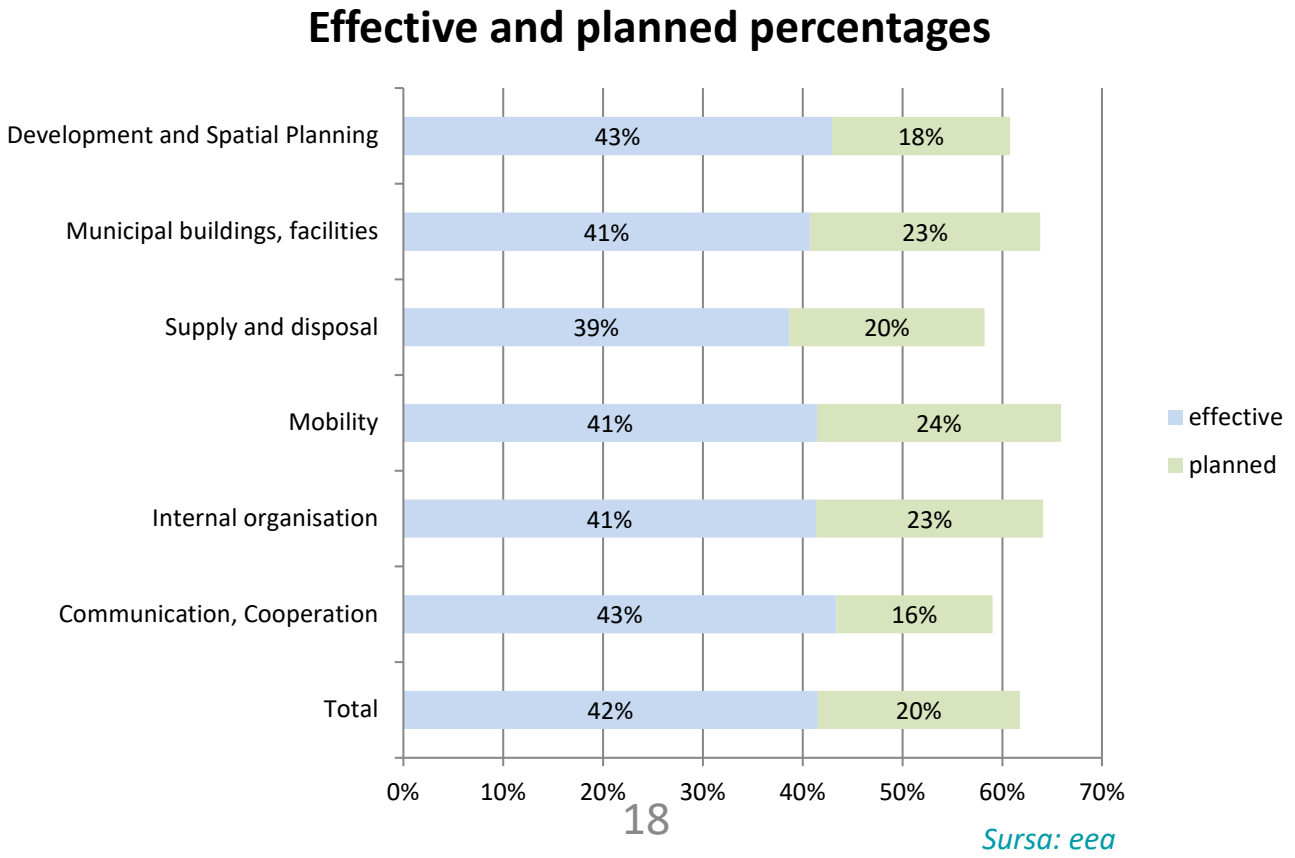


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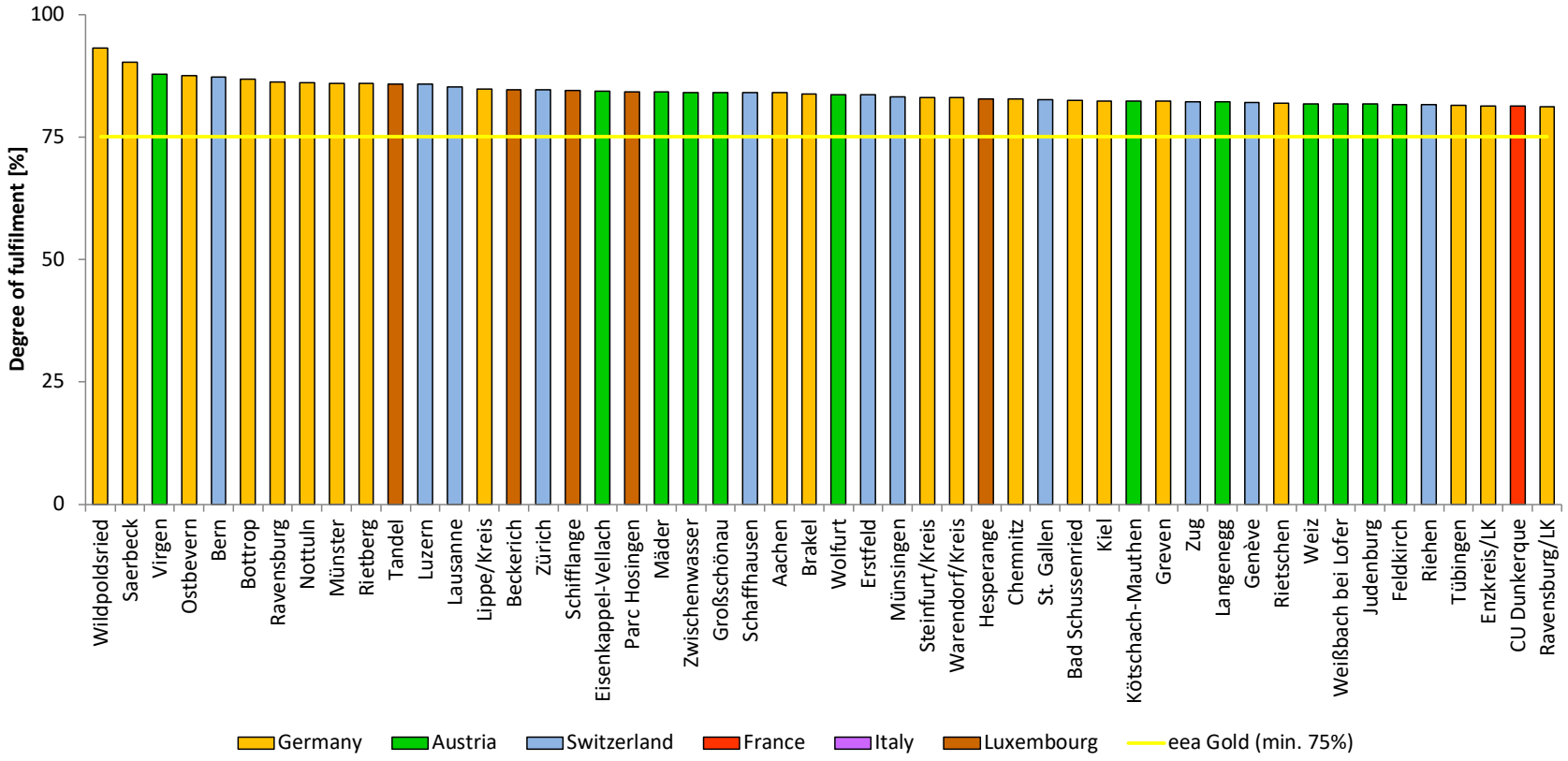
# eea – Gold Cities

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# VUCA – (Volatile, Uncertain, Complex, and Ambiguous) environment

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# VUCA – (Volatile, Uncertain, Complex, and Ambiguous) environment

# New occupation are emerging

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# VUCA – (Volatile, Uncertain, Complex, and Ambiguous) environment

# Traditional job roles are augmented with new skills and knowledge, particularly in green and digital transitions

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# VUCA – (Volatile, Uncertain, Complex, and Ambiguous) environment

Environmental sustainability and digital transformation require a workforce that is not only technically proficient but also adaptable and capable of continuous learning

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# Transversal Skills: The Cornerstone of Smart City Success

(digital literacy, stakeholder engagement and collaborative governance)

# Core Competencies: Shaping the Operational Landscape of Smart Cities

A skilled workforce is the backbone of effective smart city operations.

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## Resilience Management: Enabling Smart Cities to Thrive in a VUCA World

Resilience is an essential characteristic of smart cities, enabling them to withstand and recover from various disruptions, including natural disasters, cyber-attacks, and pandemics.

## Green and Technology Competencies: Shaping Sustainable and Technologically Advanced Urban Landscapes

The green transition is essential for smart cities aiming to develop sustainable, eco-friendly urban spaces.

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# Emerging occupation profiles for future urban development

1. **Management** Occupational Profiles: Roles that encompass strategic planning, innovation, and overall coordination of smart city initiatives.
2. **Technological** Occupational Profiles: Specialized positions focused on the implementation and management of technological solutions within urban settings.
3. **Smart City** Occupational Profiles: Positions dedicated to developing the smart cities.
4. **Green** Occupational Profiles: Professions centered on environmental sustainability, promoting green infrastructure and practices.

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# Management Occupational Profiles

1. Chief Innovation Officer. The Chief Innovation Officer serves as the driving force behind innovation in a municipality, utilizing digital technologies and data-driven decision-making to transform urban governance.

2. Smart City Resilience Officer. Providing a strategic vision for enhancing city resilience, the Smart City Resilience Officer plays a crucial role in building a city's capacity to withstand various challenges, including natural disasters, cyber threats, and social disruptions.

3. Civic Technologist. Championing digital inclusion and public engagement, the Civic Technologist designs, implements, and manages civic technology solutions that foster enhanced citizen participation and service delivery.

4. Multi-cultural Facilitator. Integrating diverse perspectives and promoting cross-cultural understanding, the Multi-cultural Facilitator plays a critical role in fostering a harmonious and inclusive urban environment.

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# Technical Occupational Profiles

1. Smart City Data Analyst. The Smart City Data Analyst serves as a data maestro, collecting, analyzing, and interpreting vast amounts of urban data to inform policy decisions and optimize city operations.

2. AI & Machine Learning Scientist. The AI & Machine Learning Scientist harnesses the power of artificial intelligence and machine learning to revolutionize urban systems.

3. Digital Twin Expert. The Digital Twin Expert orchestrates the creation of a virtual representation of the city, integrating data from various sources to provide real-time insights into urban operations.

4. Cybersecurity Manager. The Cybersecurity Manager safeguards the city's digital infrastructure from evolving cyber threats.

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# Technical Occupational Profiles

5. Augmented Reality Designer/Developer. The Augmented Reality Designer/Developer creates immersive augmented reality experiences that enhance urban applications, such as tourism and education.
6. Smart Grid Engineer. The Smart Grid Engineer designs and maintains the infrastructure that powers smart cities.
7. Autonomous Vehicle Operator/Technician. The Autonomous Vehicle Operator/Technician monitors, controls, and maintains autonomous vehicles, ensuring their safe and efficient operation.
8. Digital Health Coach. The Digital Health Coach empowers individuals to manage their health using digital tools and platforms.

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# Smart City Occupational Profiles

1. Smart City Planner. The Smart City Planner serves as a visionary leader, conceptualizing and executing smart city projects to enhance urban livability.
2. Urban Mobility Manager. The Urban Mobility Manager optimizes urban transportation systems, ensuring efficient and sustainable movement of people and goods.
3. Urban Air Mobility Expert. The Urban Air Mobility Expert pioneers the integration of urban drone technologies, paving the way for innovative delivery, maintenance, and monitoring services.
4. Municipal Broadband Manager. The Municipal Broadband Manager spearheads the deployment of municipal broadband networks, expanding access to high-speed internet in unserved areas.

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# Smart City Occupational Profiles

5. Smart Building Manager. The Smart Building Manager optimizes energy-efficient and technologically advanced buildings, integrating smart systems like lighting and HVAC.

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# Green City Occupational Profiles

1. Green Infrastructure Specialist. The Green Infrastructure Specialist designs and implements green infrastructure projects, such as parks, green roofs, and rain gardens, to enhance urban sustainability and resilience.
2. Circular Economy Manager. The Circular Economy Manager develops strategies to promote the circular economy, a resource-efficient approach to economic development.
3. Climate Change Specialist. The Climate Change Specialist develops and implements strategies to mitigate and adapt to the impacts of climate change.
4. Biodiversity Protection Professional. The Biodiversity Protection Professional safeguards biodiversity, ensuring the health and diversity of plant and animal species in urban environments.

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# Green City Occupational Profiles

5. Local Energy Community Manager. The Local Energy Community Manager supports the creation and management of renewable energy communities, fostering local ownership of renewable energy generation.

6. Heat Managers are crucial professionals who oversee the strategic management of temperature within urban environments. They monitor, analyze, and mitigate urban heat island effects, promote green spaces and smart cooling solutions, educate communities, and collaborate with experts to create resilient, livable, and sustainable cities.

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# Mulțumesc!

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