Innovative cities in V4 countries
HOW TO SPEED UP THE DEVELOPMENT OF SMART CITIES

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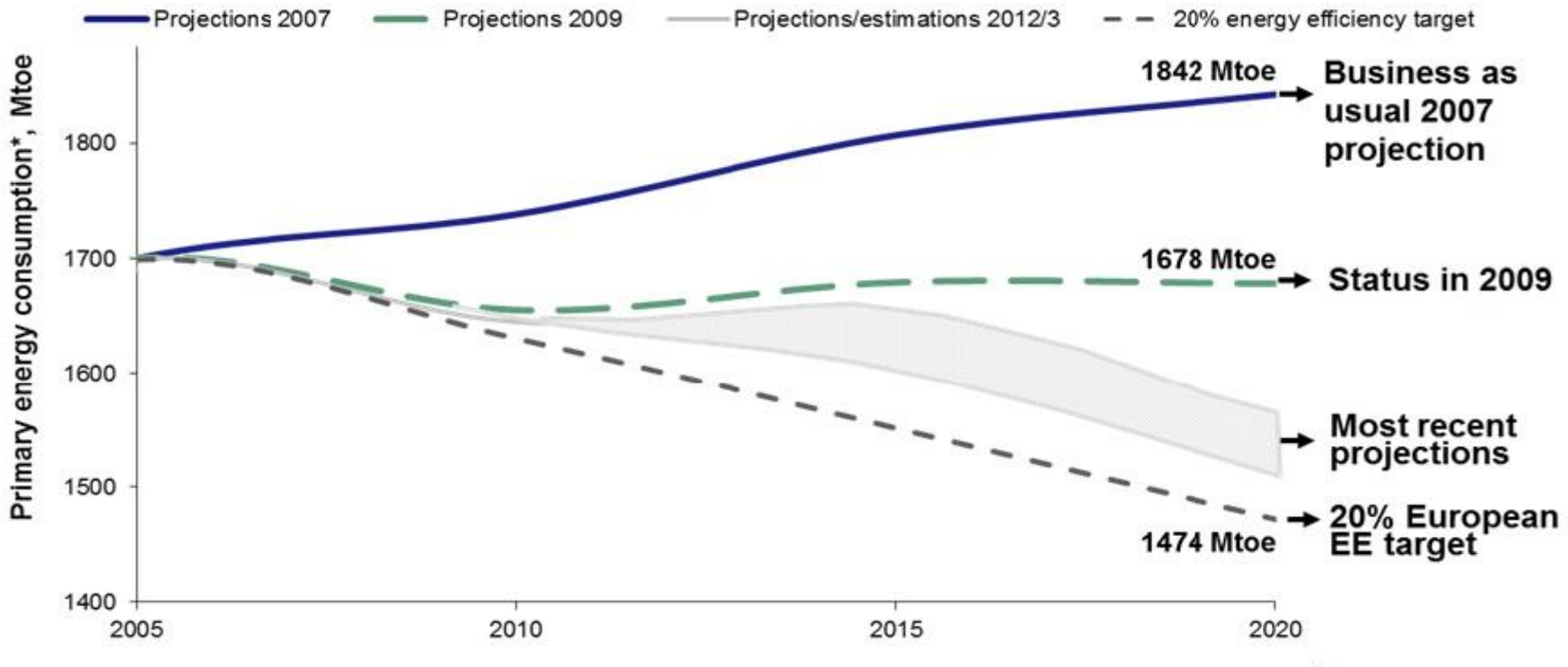
V4 FOR 3RD MISSION - THIRD MISSION OF HIGHER EDUCATION AND INNOVATION NETWORKS IN THE VISEGRAD GROUP
Budapest, Hungary

EU
SMART CITY STRATEGY

EU primary energy consumption scenarios for 2020



The initial positive effects after 2009 did not prevail, and the system was restored in 2013 to essentially the same growth path gradient (green line).

EU primary energy consumption scenarios for 2020 (source: http://ec.europa.eu/eip/smartcities/files/sip_final_en.pdf pp 5)

EU 20/20/20
the need of sustainable solutions

EU 20-20-20 objectives

(20% pollutant emission decrease, 20% renewable energy and 20% energy efficiency increase)

The EU considers drastic changes closely related to each other necessary in the following areas:

- energy production and energy utilization,
- transport and delivery systems,
- infrastructure (build environment – building, public utility), and
- information technology and communication technologies.

Cities in the focus

- 75% of the population lives in cities
- uses 70% of the utilized energy, and
- the proportion is the same in the area of pollutant emission.

Key components for the smart cities

The key cornerstones:

- traditional solutions (interests) are not sustainable;
- new approach is necessary, which is:
  - market oriented and sustainable in the long run,
  - based on individual-community (public-private cooperation),
  - unification of complex urban needs and service industry interests.

Elements of a business model related to Smart Cities:

- modular approach,
- adaptability of local (operating) ecosystems, and
- creates the European market of solutions, technologies and products-services designed for smart cities.

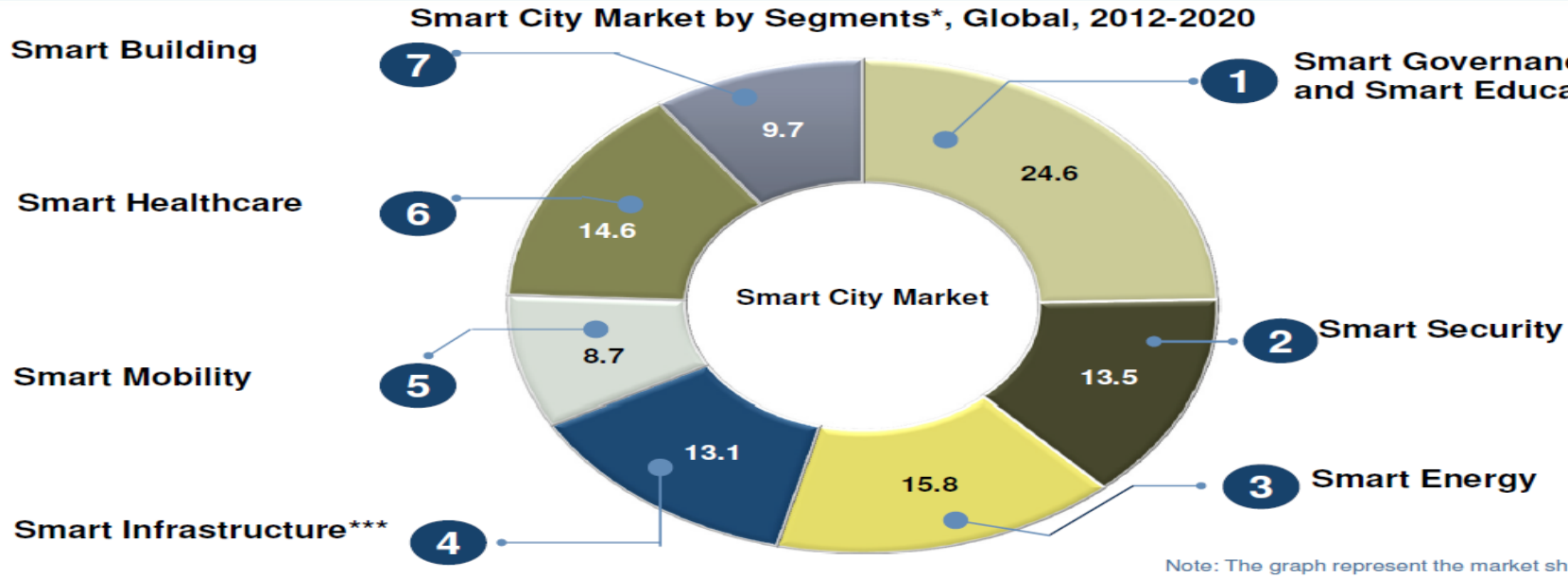
Implementation of Smart City Strategy

http://ec.europa.eu/eip/smartcities/files/operational-implementation-plan-oip-v2_en.pdf

Smart City Market – Business Opportunities (by FROST & SULLIVAN)

Executive Summary—Summary of Smart City Market

Smart cities are anticipated to create huge business opportunities with a market value of $1.565 trillion by 2020.



Note: The graph represent the market share of each segment in the smart city market.
For more information on smart city market sectors please refer to appendix.

*These numbers represent the entire smart solutions eco-system in each segment for both urban and non-urban panoramas.
**Smart Education includes eLearning services for schools, universities, enterprises, and government entities.
***Smart Infrastructure includes sensor networks and digital management of water utilities not included in other segments.
Source: Frost & Sullivan

M920-MT FROST & SULLIVAN 8

Problems

- **Gap between**
  - **Industry – wants to sell**
  - **People – need to be educated**
  - **City – doesn't always have clear smart strategy, needs sustainable business modell**
- **Adressing the gap**
  - **University based ecosystems can bridge the gap: education-developement-application**

Problems

- **Method: showing use- and business- cases with real pilots**
  - **Industrial partner ensures the sustainable business approach**
  - **City has the chance to gather XP and educate people**
  - **UNI**
    - **trusted advisor**
    - **R+D partner – financial support**

SMARTPOLIS PROJECT

TO ESTABLISH

THE BUDAPEST REGIONAL CENTRE OF EXCELLENCE FOR SMART CITIES

BME Egyesült Innovációs és Tudásközpont
1111 Budapest, Egry J. u. 18. V1 ép. C 201.
www.eit.bme.hu

BME Federated Innovation and Knowledge Centre
H-1111 Budapest, Egry J. u. 18. bldg. V1 C 201.
www.eit.bme.hu

The Smartpolis project

- **The overall and general goal of the proposed project is the utilization of the innovation capacity, knowledge creation and knowledge transfer in the Central Eastern European region for reaching the European goals defined by Horizon 2020.**
- **The Centre will become an incubator of smart city concepts and solutions in the region through its high level theoretical research, system and technology developments, accelerated deployment, as well as its educational and consulting activities.**
- **The members of the consortium:**
  - **Budapest University of Technology and Economics**
  - **Hungarian Intellectual Property Office**
  - **Fraunhofer FOKUS (Berlin)**
  - **The Urban Institute (Chemnitz)**

SmartPolis - Objectives

- **Establish the Budapest Centre of Excellence for Smart Cities**
  - **organized and performed within the organizational framework and premises of BME;**
- **Strengthening the research and innovation capabilities of BME**
  - **communication technologies, building development, sustainable and green energy supply, urban transport, and city administration;**
- **Centre will become an incubator of smart city concepts and solutions in the region**
  - **high level theoretical research, system and technology developments, accelerated deployment, as well as its educational and consulting activities;**
  - **regional partners: R&D – universities, companies; Service – public service companies, ICT and energy suppliers; Public – local and government authorities, civic associations and organizations; etc.**

SmartPolis - Objectives

- To have considerable influence on local smart city programs
  - (i) developing new solutions, new technologies, new knowledge,
  - (ii) developing the knowledge transfer policy and strategy based on the concept of open innovation
  - (iii) supporting smart city developments;
- The business plan will elaborate the extension of the centre:
  - broadening its scope of activities, realizing a regional reach, increasing the number of employees, having substantial revenues from industrial cooperation and from local and international grants;
  - projects initiated by the Centre like innovation activities, publications and research projects as well as new patent applications.
- Measurable impact

Core activities

Research excellence

Applied research based on 5G core technology

- PhD program – industrial training
- Co-operation with lead partners
- EU project coordination and participation
- Industrial research projects
- Exchange programs, guest researchers
- Articles in peer viewed journals
- Patents

Education and training

- BA and Masters program for BME
  - Masters in English
  - International enrollment
- Doctoral school - PhD
- Training programs with narrow focus
  - Local training courses in local languages
- Online training
- Webinars

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Smart City Centre of Excellence

Consulting services

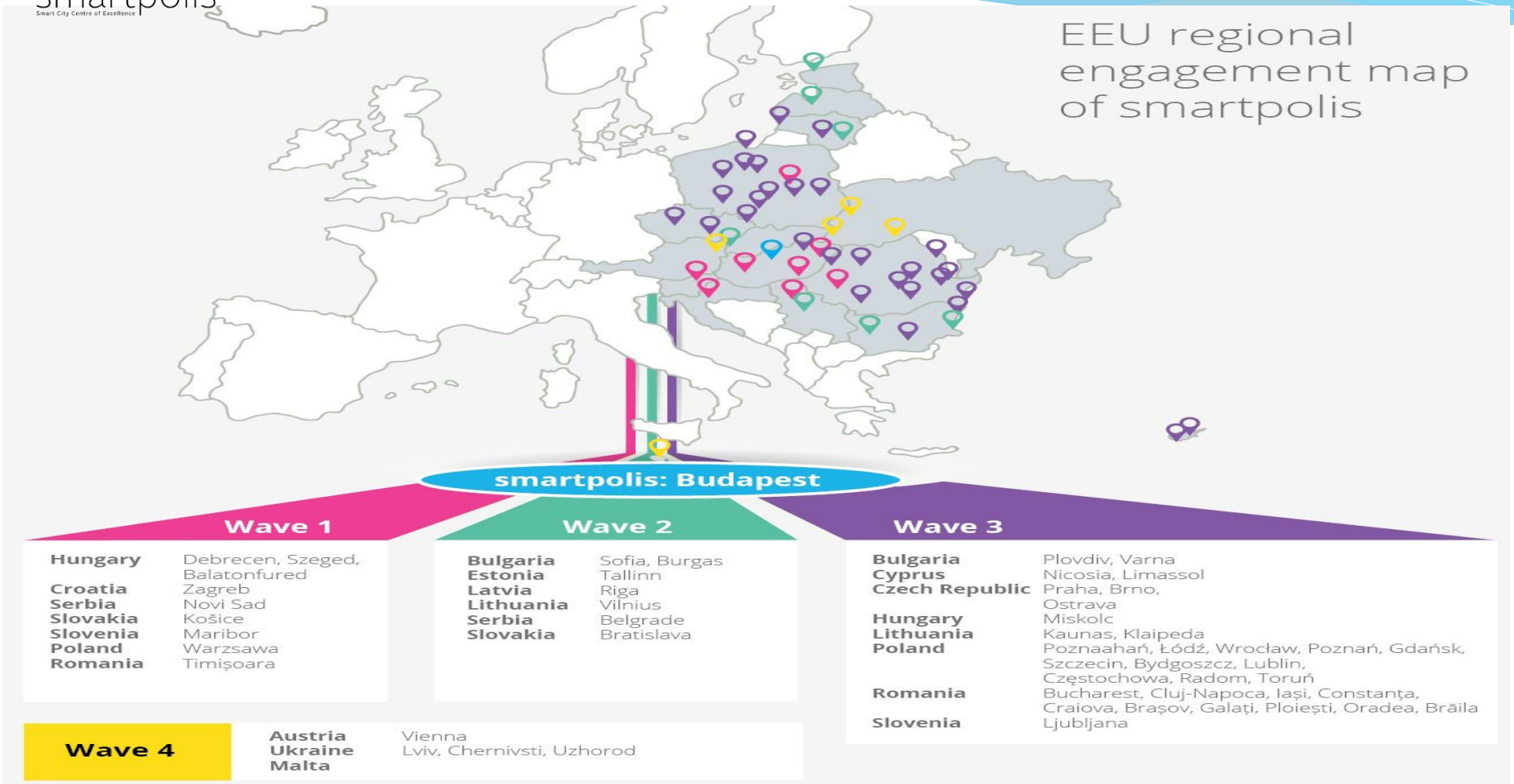
- Leveraging research results
- Adaptation of best practices
- Serving municipalities and industry partners
  - Strategy development
  - Assessment and best practices
  - Digital transformation
  - Program preparation - financial modelling
  - Technology selection
  - Quality assurance
  - Project management
- Feed back to research and education

Incubation and investments

- Supporting innovative ideas from CEE
  - Facilities, mentoring, training, contacts
- Seed funding to best in class results
- Support for initial operation
- Match making for later stage investments
- Management of investment fund on behalf of external partners

Areas of the R&D Activity Based on BME Competences

Regional Partners



SmartPolis

Budapest Regional Centre of Excellence for Smart Cities

built on the innovation capacity, know-how and expertise of the project partners

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V4 EXAMPLES

GDANSK - Poland

- Population: 460.000
- Open minded approach
- Metropolitan Electronic Ticket & Metropolitan Bike Sharing
  - Demand response tools
  - Multi modal transport with pricing
  - Traffic optimization
  - Free floating bike sharing
- Education
- Real engaged city leaders

Presov - Slovakia

TRANSPORT	**Increase traffic fluency and safety**
	Increase the proportion of non-motorized traffic
ENVIRONMENT	Improve the environment in the city (incl. waste & energy management)
SAFETY	Improve the protection of city residents and their property
SOCIAL CARE	

INNOVATION STRATEGY

- Regional Innovation Strategy of the Prešov Self-Governing Region 2015-2020 Priorities: 1) Development of innovation infrastructure ; 2) Enhancing human capital and innovation environment in the region; 3) Development of financial infrastructure for innovation financing

Presov - Slovakia

REGIONAL INNOVATION NETWORK:

- **R&D&Education centers**
  - RPIC Prešov (Tech. incubator)
  - University of Prešov (4 centers of excellence, 8 faculties)
  - Technical university in Košice (TECHNICOM 1 faculty in Prešov)
- **Public bodies:**
  - City of Prešov
  - City of Košice
  - Prešov & Košice Self-governing regions
- **Intermediarries**:
  - Clusters, associations…

CITY-GOVERNMENT OPENNESS

- the highest amount of data provided in Slovakia to citizens & companies (open DATA, GIS)
  - **Enabling tool for business creation**

Hungary - Kiskőrös

- Population: 14.446
- Area: 102 sqkm
- Modell for other small cities – similar problems in every town
- Focus areas:
  - Smart metering and energy management
  - Public security
  - Environmental monitoring
  - Smart agriculture
  - AAL

THANK YOU FOR YOUR ATTENTION !

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Smart City Centre of Excellence

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