

#### PACITA

#### Technology assessment in policy areas of great transition Smart infrastructure for Competitiveness

Rut Bízková Prague 15th March 2013





#### **Content:**

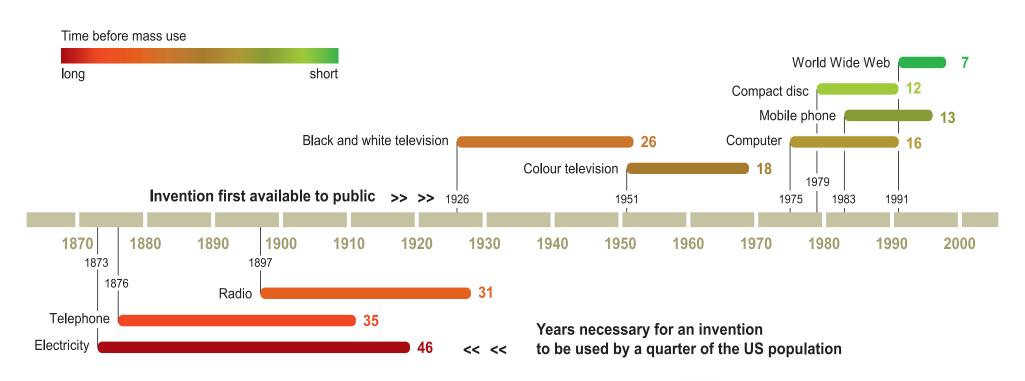
- 1. Introduction
- 2. Megatrends prediction of the future development
- 3. Czech Republic an example of the changing world
- 4. Smart cities
- 5. Examples from the Czech Republic Projects funded by TA CR related to the smart technologies



### Figure 1:



Shortening time lapse before mass use of technological inventions (EEA 2010)



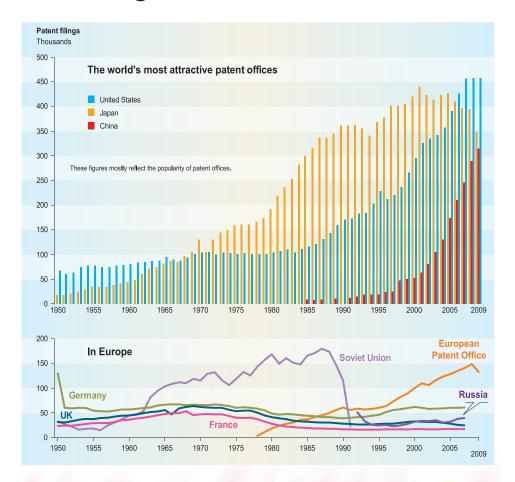
Source: Kurzweil R., 2005. The Singularity is Near: When Humans Transcend Biology.

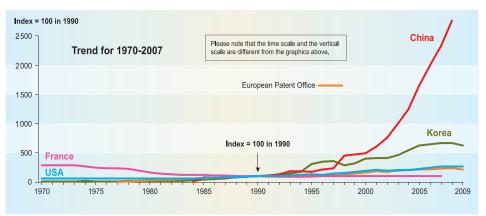


# Figure 2:

#### Technology Agency of the Czech Republic

#### Patent registrations, 1950-2009 (EEA 2010)

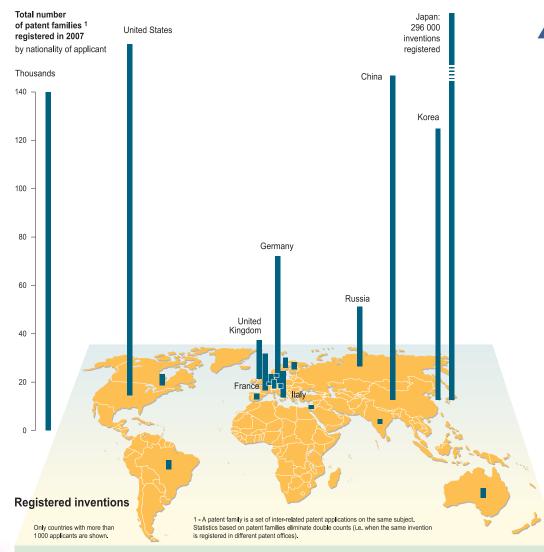




Source: WIPO Statistic Database, 2009.

# Figure 3:

Number of patents registered in 2007 (EEA 2010)





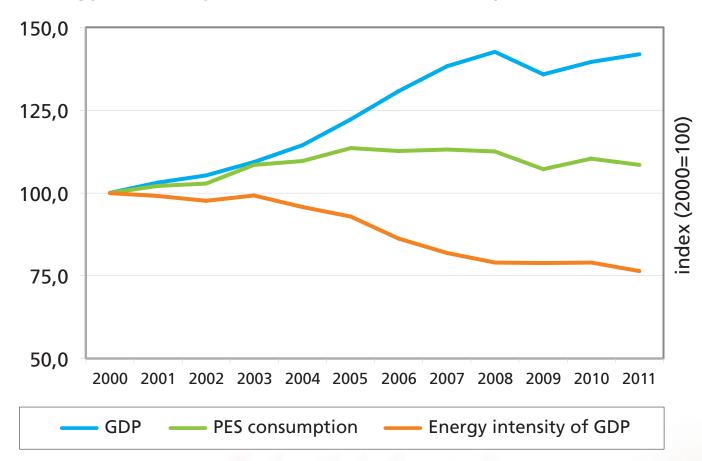




### Figure 4:



Energy intensity of the Czech economy



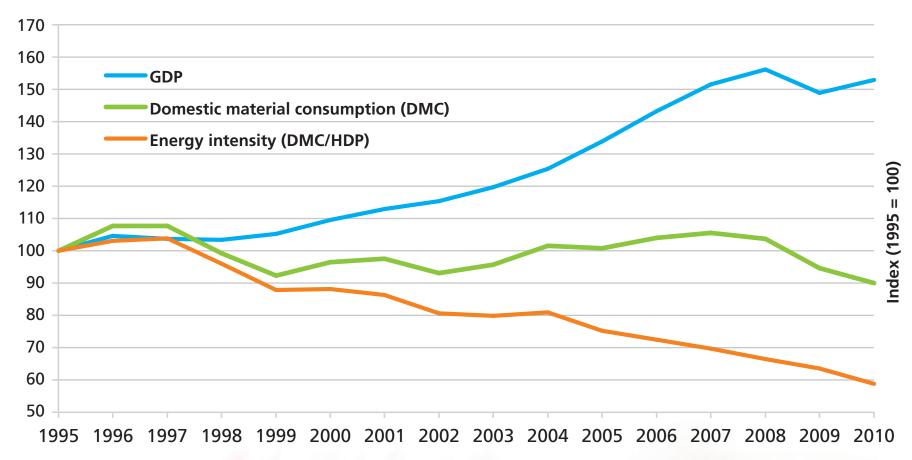
Sorce: Czech Statistical Office, Ministry of Industry and Trade

www.tacr.cz

### Figure 5:



Resource intensity, consumption and GDP in the Czech Republic (1995=100)



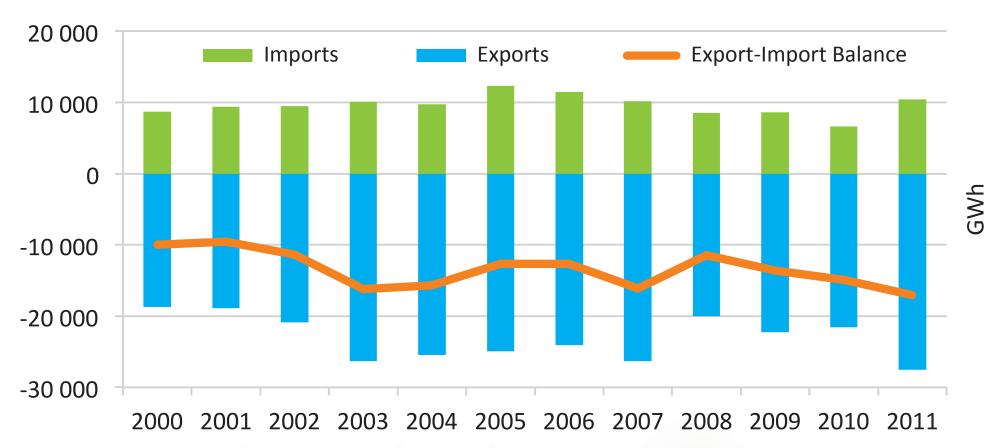
Source: Charles University Environment Center

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### Figure 6:



Export and import of electricity (TWh)

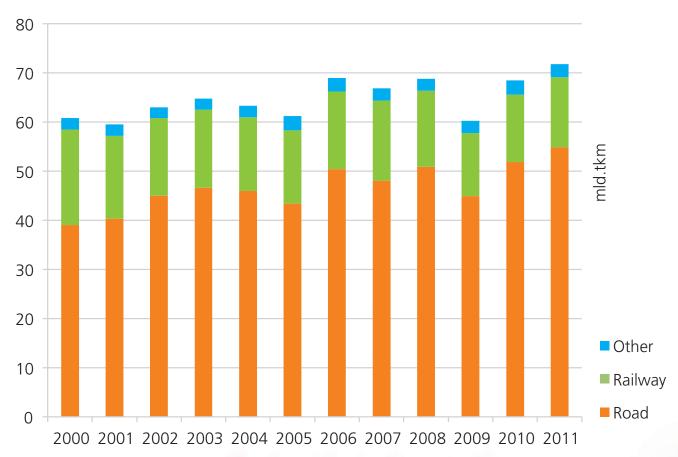




# Figure 7:



Road transport of cargo in the Czech Republic (bln. ths. km)

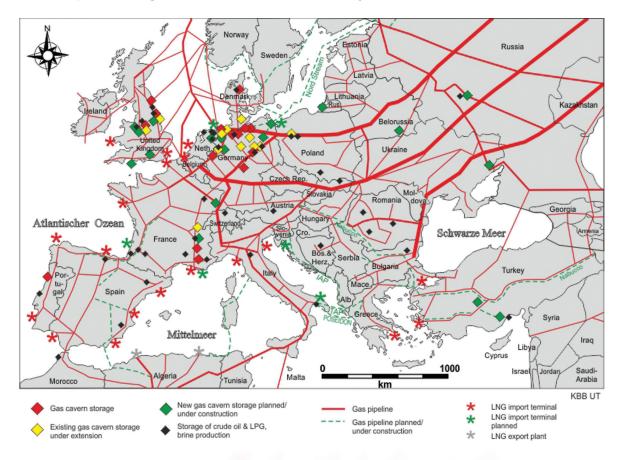


Source: Ministry of Transport

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# Figure 8:

#### European gas distribution system







### Figure 9:



#### 3i – Strategy of International Competitiveness

#### institutions



Financial constitution

**Basic registers** 

High-quality legislation

Early childhood education system

State services map

Legal effect days

#### innovation



Future demand forecast

Promotion of technical education

Application of science results

Innovative business support

#### infrastructure



**Digital Czech Republic** 

Conceptual creating of infrastructure

Transport Energy



# Figure 10:



National Priorities of Oriented Research, Development and Innovations

- Sustainability of energy and resources
- Safe society







The Smart cities concept and the three pillars

#### Buildings

- Low-energy buildings
- Building energy management
- Materials
- Smart metering
- Home/build scale production

# Technological infrastructure

- Production
   of electricity,
   heating and cooling
- Energy accumulation
- Energy distribution
- Street lighting
- Water and waste

#### Transport

- Planning and control, telematics
- Green mobility (HEVs, EVs, CNG, energy-saving vehicles)
- Energy accumulation in transport

Control, information and communication

Security of the system



### Figure 12:



Technology Agency of the Czech Republic:











### Thank you for your attention!

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