Energy-efficient Magdeburg – Climate Protection and Model City for Renewable Energies

Challenge/Question to resolve:
How to transform Magdeburg into an energy efficient city and a model for renewable energies?

Contribution to the Launch Event of the International Cities Platform „Connective Cities“, 24.06.2014 in Leipzig

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1: Selected Frame Conditions and Actors in Magdeburg

1) ***Objective: Environment- and Climate-friendly city*** *as part of a liveable city*
2) ***Initiative*** *by* Department for Business development, Environmental Office and Economic Development Agency of the City of Magdeburg
3) ***Use of Financial Support from various sources:***
   - ***Federal Ministry for Education and Science:*** Project „Magdeburg: Energy Efficient City – Model City for Renewable Energies (MDE^4)“,
   - Project to certify Magdeburg as „energy efficient model city“ by German Energy Agency (dena)
4) ***Establishment of Energy- und CO_2- balance sheets***
5) ***Involvement of a multitude of stakeholders***

The City of Magdeburg has established the target to reduce climate relevant emissions to 3,2 Tons of CO_2 per capita until2050!

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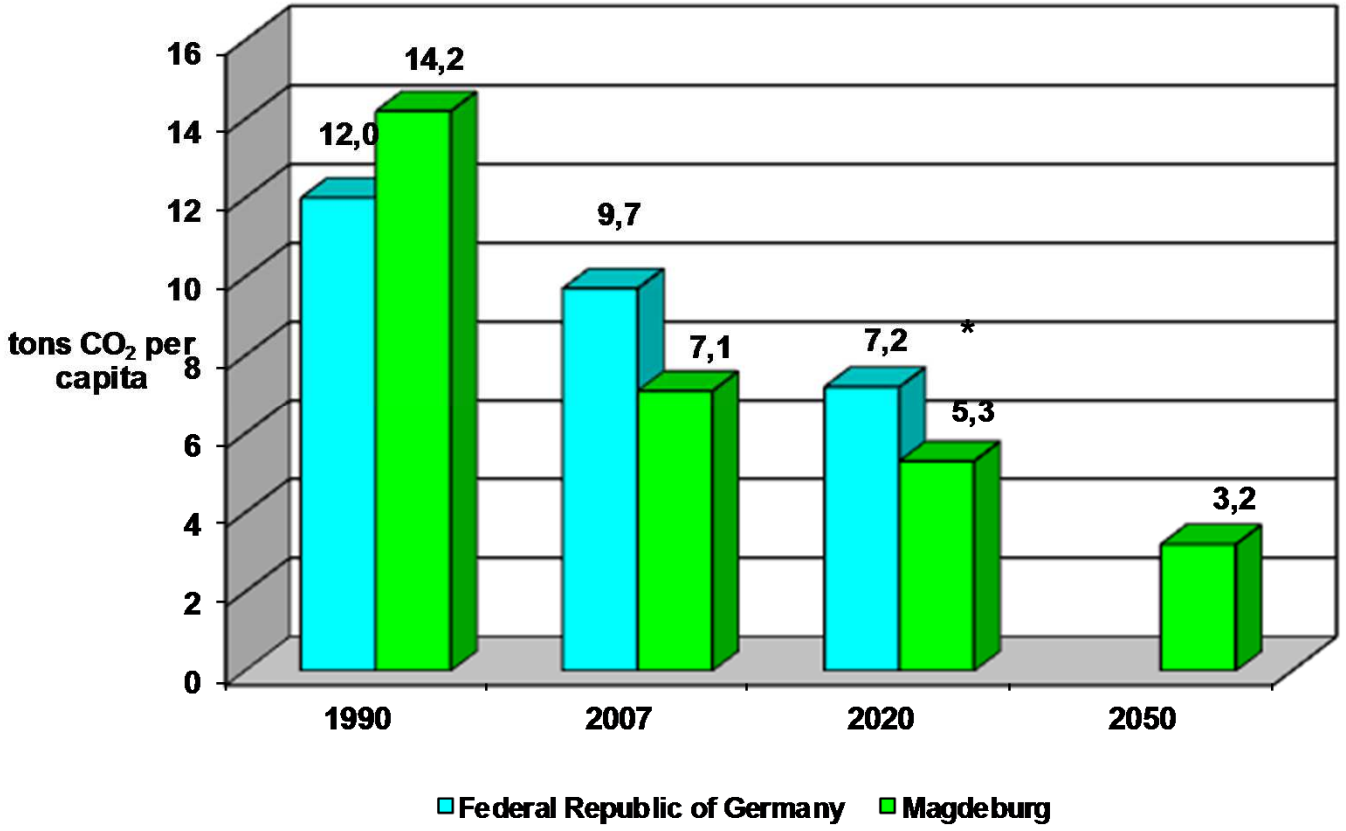
CO_2 Emissions per Capita (Federal Level versus Magdeburg)



*** Based on 40%-target of Federal Republic of Germany related to per capita value in 1990**

Quelle: Zadek, H.; Schulz, R.: Magdeburg: Energieeffiziente Stadt – Modellstadt für Erneuerbare Energien (MD-E4), Abschlusspräsentation BMBF-Forschungswettbewerb „Energieeffiziente Stadt“, Berlin, 2010.

MD-E^4: The co-operating partners

Magdeburg produces energy from waste

The utility can burn around **650.000 Tons** of waste p.a. This enables to utilize household and industrial waste from around **4 Mio. inhabitants.**

By means of efficient technology around **370.000 MW hrs of electricity** and around **350.000 MW hrs of district heating** are produced which supply approx. **44.000 households** in Magdeburg.

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2: Approach

1) **Establishment of a project consortium from science, business sector and local administration**
2) **Formation of discussion circles and working groups** for specific thematic issues
3) ***Participation of citizens and institutions (council and commissions)***
4) ***Exchange with other cities, particularly partner cities,*** for instance annual business meetings on„ green“ topics in Harbin (China), visit of experts from Le Havre (France), workshops with the city of Saporoshje (Ukraine)
5) ***Implementation of conferences,*** for instance, international „green cities - green industries“ conference since 2012

Magdeburg invests in green electricity from wind energy

ENERCON which is the biggest producer of wind energy utilities in Germany with several thousand employees based in **Magdeburg** has constructed the world's most powerful **wind energy plant** E-126/7,5 MW in Magdeburg-Rothensee.
Public Utility Company Magdeburg GmbH (SWM Magdeburg) will invest 24 % of total shares in the private operator agency.
"With the energy produced of about **14 Mio. kW hrs of a single utility around 15.000 people** in Magdeburg can be provided with clean energy."

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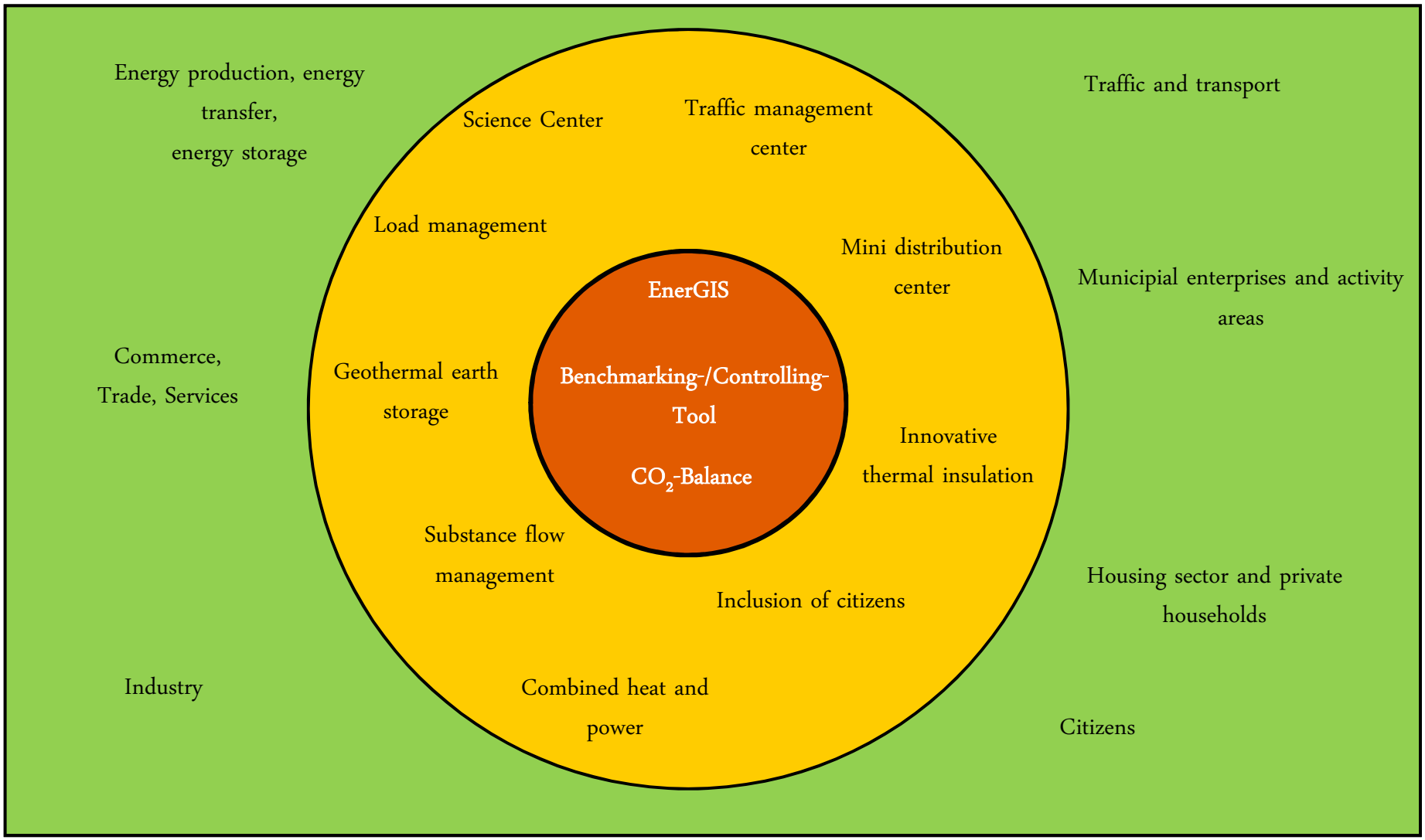
Comprehensive systematic approach in Magdeburg



4. Examples related to public services for energy in Magdeburg:

1) Energy consumption advisory services

2) Environmental traffic management office (ifak-Institute, University)

- ***Goal: traffic management and reduction***

3) City-logistics // Construction of mini-distribution centres (Fraunhofer-Institute)

4) Development of Energy Atlas Magdeburg (Hochschule Magdeburg)

5) Load management on local network (ifak, University, network operator)

Magdeburg invests in ecologically sustainable inland water transportation

Transport of goods on inland waterways are energy efficient and ecologically sustainable. They open up opportunities for transport of big and heavy products.
Investments of around 4 Mrd. € were made in **Magdeburg** to develop an effective **waterways, harbour and logistics infrastructure.**
This supports an environmentally friendly transport of goods which is connected to the Hamburg overseas harbour. This secures access to global resources and product markets for heavy industries as well as energy sector companies from the region.

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Magdeburg invests in public transport

A flexible and efficient regional public transport is an important aspect of a modern and liveable city.

Without public transport no city is able to survive!

Magdeburg is well established in this regard: **„Investments of about 500 Million Euros were made for modern infrastructure and for safe transport technology."**

Concepts to **interlink local and long-distance public transport** are being developed and implemented to **reduce individual traffic.**

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5: Initial lessons learnt

1) ***Very close cooperation*** between **science, business sector** and **local government** required
2) ***Many different project ideas*** have to be developed, of which only a portion will be implemented eventually
3) ***Continuous participation of citizens and institutions*** *necessary*
4) ***Various persons taking up responsibility required*** to fill projects „with life“
5) ***Tremendous effort required for project applications*** – *yet it‘s worthwhile!*
6) ***Positive international response***, for instance requests for participation in international conferences, international expert visits and exchanges.

6: Open Questions ...

1) How to secure financial resources in the medium- to long term future?

2) How to observe requirements for data privacy, also upcoming ones, in a solid manner?

3) What will be the implications from demographic development ?

4) How to preserve „sustainability in sustainability“ (for instance, (e.g. consideration of all energy related aspects in sustainable urban development)?

5) How to motivate and mobilise the regional business sector in a sustainable manner?