WP 4 Energy Supply

Baltic Sea Region Programme 2007-2013

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URB Energy

Energy Efficient and Integrated Urban Development Action

Enhancing energy performance of buildings and energy supply systems

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15.06.2009 – Kick-Off-Conference

Enhancing energy performance of buildings and energy supply systems

1. Introduction
2. Relevance for Brandenburg
3. 20 years of experience in changing urban development
4. Current situation and problems

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Enhancing energy performance of buildings and energy supply systems

1. Introduction

- Potsdam Chamber of Commerce and Industry since 1898
- Self-governing body and voice of the economy in West-Brandenburg
- About 70,000 companies in industry, trade and services are CCI member by law
- Six regional centres

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1. Introduction

- **Strong motivation to take part in the INTERREG IV B-Project "Urb.Energy"**
- **CCI Potsdam has a main focus on the energy sector, since more than seven years managing the Brandenburg Energy Technology Initiative (project of the Brandenburg Ministry of Economy)**
- **Initiated as common platform for all stakeholders of the energy economy, ETI developed rapidly and became a major player for promoting innovative energy supply solutions. Conferences, workshops and brochures of ETI meet the interest of thousands of experts in Brandenburg and other federal states as well. ETI is an important partner for implementing the Energy Strategy 2020.**

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1. Introduction

- Bundling competences and fostering communication of experts from economy, science, policy and administration is done in 10 ETI task groups, two directly linked with the subject of URB Energy:
  - Energy efficiency in companies/energy services
  - Energy efficient construction/buildings energy efficiency

- Project experiences of Potsdam CCI in general (e.g. INTERREG, IEE, Interprise, Asia-Invest) and in energy in particular (e.g. BBN, Dendrom, Setcom, Bioenergy Promotion)

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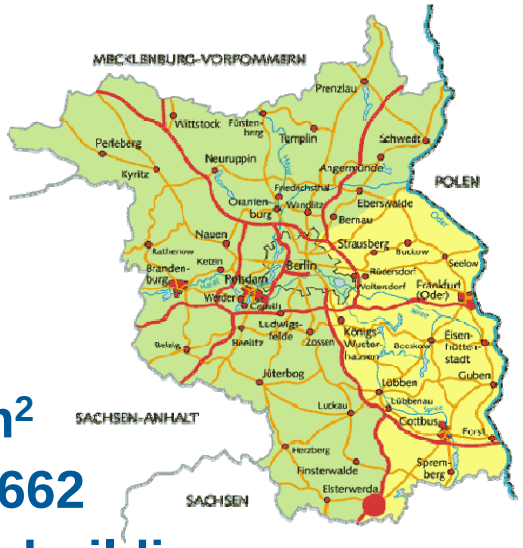
2. Relevance for Brandenburg



- **Infrastructure**
- **30,000 km²**
- **2,6 million inhabitants**
- **density of population 85 inhabitants per km²**
- **Residential buildings: 608,293; flats: 1,275,662**
- **Over 380,000 flats in pre-cast concrete slab buildings**

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2. Relevance for Brandenburg

- **Urb Energy subjects are of high importance due to following factors:**

- **Urban infrastructure and housing situation inherited from former GDR (old buildings in historical centres in very bad conditions, rising vacancy in buildings made with pre-cast concrete slabs)**
- **Targets of Energy Strategy 2020 concerning reduction of CO_2 emissions and energy saving by energy efficiency measures**

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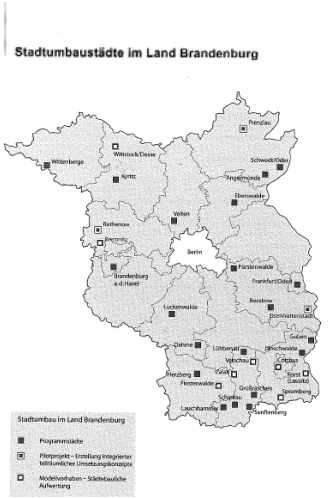
3. 20 years of experience in changing urban development

- Collapse of industrial enterprises caused rapidly growing vacancy in many cities. Problems were sharpened by demographic change.
- Typical example is Wittenberge, a small town in the Prignitz Region. Number of inhabitants decreased by 31% between 1990 and 2006. Some quarters are nearly empty whereas the area close to the Elbe River is marked by residential growth.
- Urban Renewal Programme: dismantling of roughly 40,000 housing units. Recommended ratio 50:50 between dismantling and refurbishment exceptionally well implemented in Brandenburg due to a dual strategy The vacancy level is about 10 % now (2002: 16 %)



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3. 20 years of experience in changing urban development

- A drastic change happened in heating systems, coal fired were replaced by oil and gas fuelled heating facilities during 90^{ies}. After 2000, renewable energy based heating won rising importance influenced by the dramatic increase of fossil fuel prices.
- Dismantling and refurbishment of ailing urban quarters including change of heating systems and energetic rehabilitation were induced and promoted by different support programmes financed by EU, federal government and state authorities.

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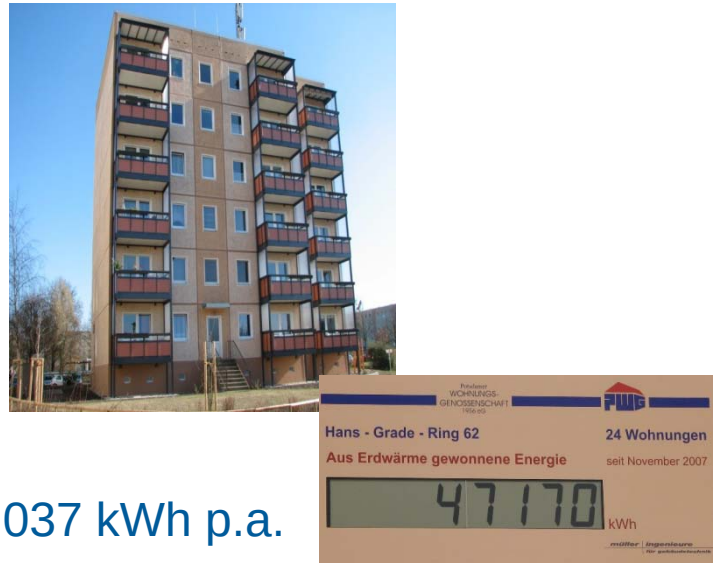
WP 4 – Energy Efficient Rehabilitation

3. 20 years of experience in changing urban development

Reference Project of an energy-efficient refurbishment in Brandenburg

- Potsdamer Wohnungsgenossenschaft 1956 eG – Hans-Grade-Ring 62
- Sustainable energetic rehabilitation of the building stock
- Energy consumption before refurbishment: 178,839 kWh p.a.
- Reduction of energy consumption by new heat insulation: 24,485 kWh p.a.
- Reduction of energy consumption by the use of a geothermal heat pump for heating: 65,767 kWh p.a.
- Reduction of energy consumption by use of regenerative heat recovery: 17,550 kWh pa.
- Energy consumption after refurbishment: 71,037 kWh p.a.
- Savings: 107,802 kWh p.a. or 60 %



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4. Current situation and problems to be tackled

- Approximately 75% of the buildings in Brandenburg have been refurbished since 1990. This is a great success but cannot be equalized with the most modern achievements of energy efficiency.
- Despite remarkable improvements, the vacancy rate in many urban quarters remains relatively high and requires further efforts to implement highest possible consonance between social, economic and environmental aspects of housing.
- Minimizing energy consumption of heating, cooling and domestic hot water: 40 % of the energy consumption are caused by heating, hot water supply and cooling. And these costs for utilities have a strong influence on the mobility of the lodger (what housing societies should have in mind).
- Supporting instrument: CO_2 Building Modernization Programme

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4. Current situation and problems to be tackled

- Demographic change will continue as well as the differentiation between municipalities in the so-called “bacon belt” of Berlin (suburban sprawl) and areas far from the capital. This requires tailor-made concepts reflecting the different framework conditions of the communities.
- Increasing role of renewable energy resources (different biomass options, solar energy, geothermal solutions) shall be taken into account by integrated urban development planning.



Solar Gym Vetschau, innovative low energy building in passive construction, 1250 sqm solar cells

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4. Current situation and problems to be tackled

- A holistic approach covering energy production, distribution (heating nets), combination of central heat supply and de-central solutions based on renewable energies as well as CHP units will be of growing importance for reaching ambitious energy efficiency targets.
- Energy Strategy 2020 demands: proofing/optimization urbanistic concepts following to energetic criteria, compact instead of extensive settlements, municipal energy concepts, decrease of energy consumption in public buildings.
- Climate change effects will lead to new questions concerning energy efficiency of buildings and supply systems. Future urban development concepts shall be elaborated in close cooperation with scientists and relevant research experts where we have a great potential with a view at climate adjustment here in Berlin-Brandenburg.

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Thank you for your attention. Looking forward to a fruitful co-operation with you.

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