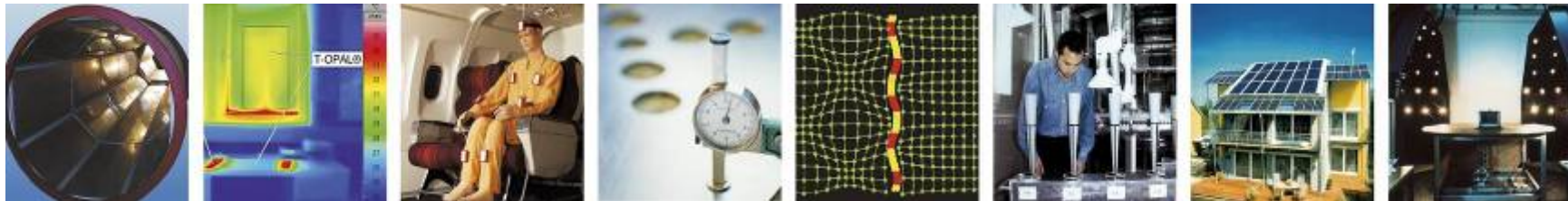

Wolfhagen goes renewable...

Annex49 Conference Munich, October 19th – 21st, 2010

Christina Sager

Fraunhofer Institute for Building Physics, Kassel

Auf Wissen bauen



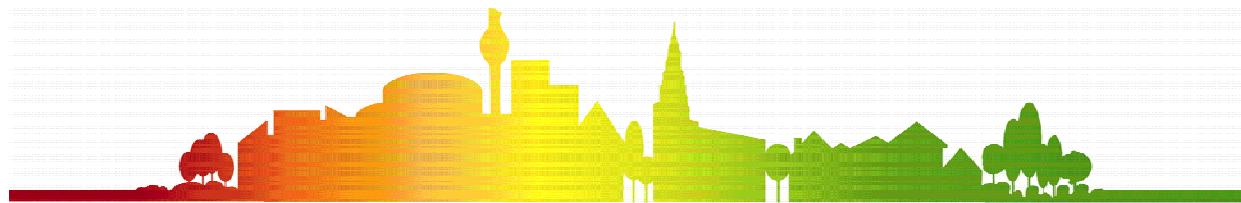
Targets of the Energy Efficient Cities Program of BMBF

- **The participating communities should anticipate an ambitious reduction in energy demand within a given time frame. The targets of the Federal government for climate protection (40 % CO₂-emission reduction until 2020) should be the minimum target.**
- **innovative strategies, technologies, instruments and services to transform a „normal city“ into an energy efficient city shall be developed and tested. From this impulses for innovative structures and processes for the changing and redevelopment of urban functions and economics are expected.**
- **The entire city system shall be taken into account.**

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of Education
and Research



Frame of the community contest

Proposals: Submission of project ideas.

Until August 2008 **72 proposals were submitted** for the community contest

Phase 1: Development of implementation plans.

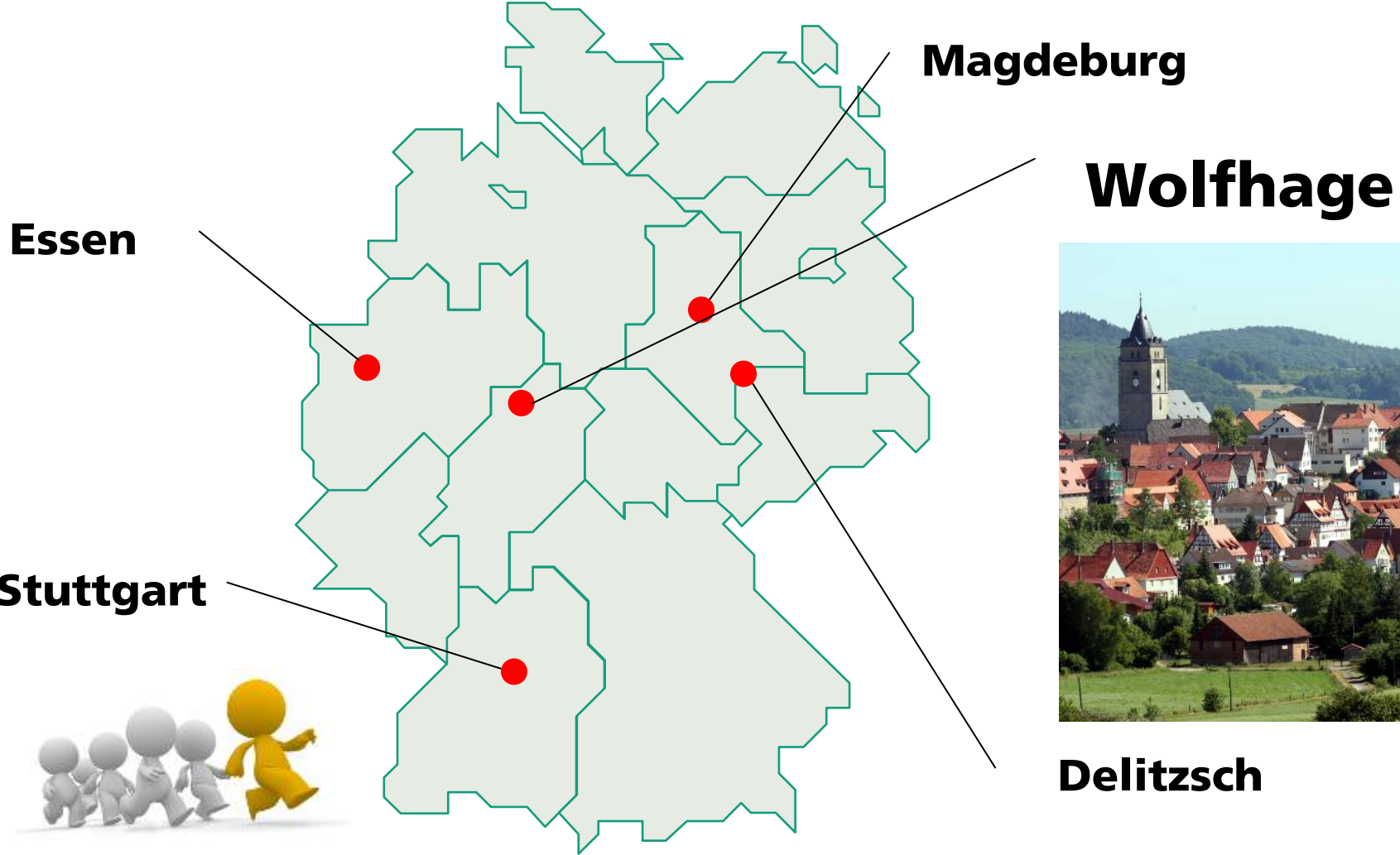
From the proposals the **most promising 15 ideas** were selected to work on implementation plans. This was funded by the Ministry with € 200.000 per project.

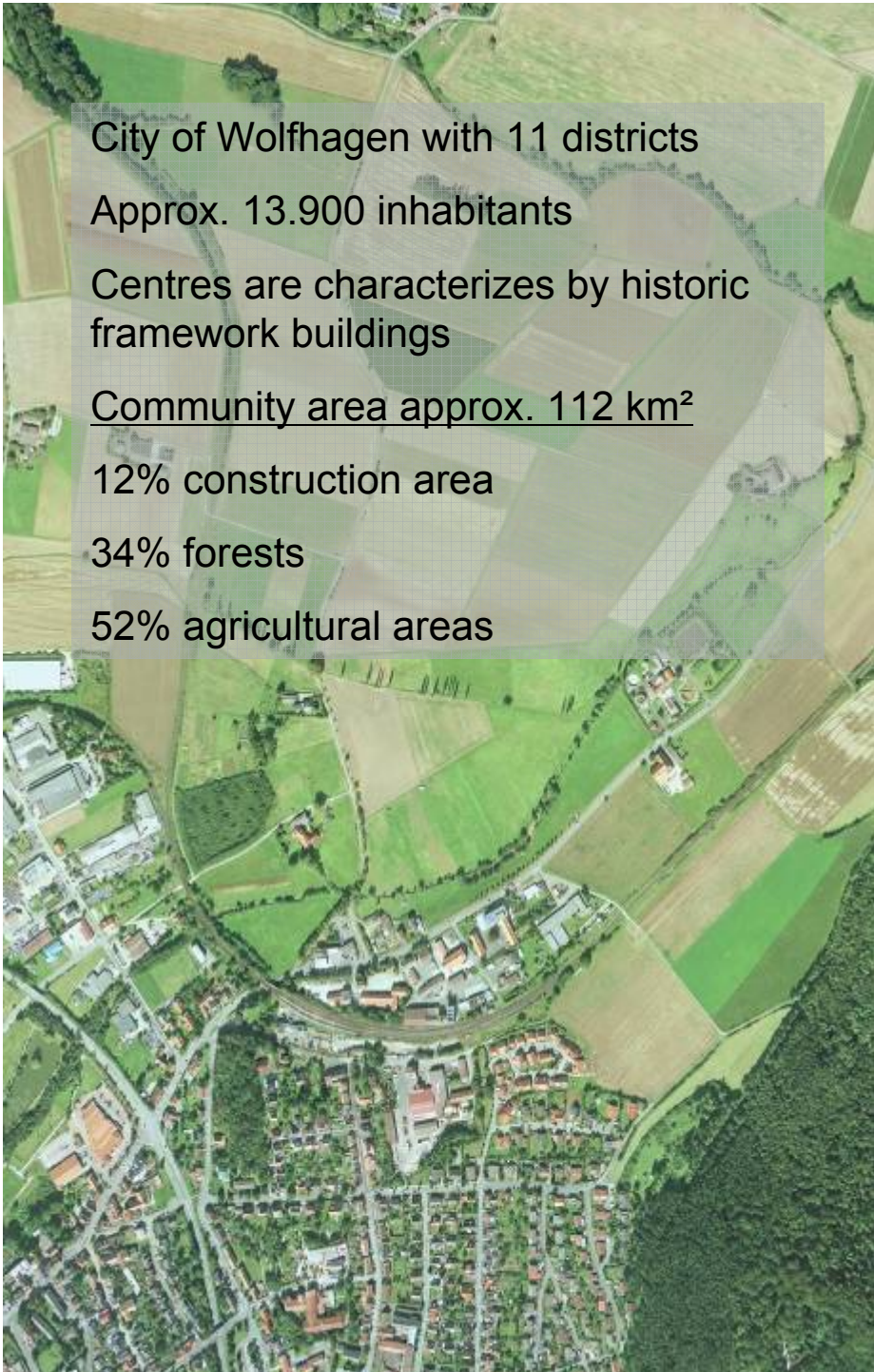
Phase 2: Implementation of selected winner concepts

On September 15th 2010 the **five winner concepts** were announced by the Minister for Research and Education. From 2011 until 2015 they will receive € 5 Mio. funding for the implementation of the concepts.



The winners





Structure of the transition projects

		Project scope BMBF			
		Implementation Projects "Wolfhagen activ"	Research and Development "Wolfhagen remains Top-Runner"	Education and Information "Wolfhagen participates"	
Key Areas of Projects	Refurbishment of existing building stock	Associated and free financed projects	Efficiency-package and modularity to increase refurbishment rate	GIS-based monitoring of the energy system	"Energenial"-Office
		Revitalising of city centre "Active City Centres"	Modular Refurbishment Concepts	Digital Representation of results for public	"Energenial-Management"
		Refurbishment of communal buildings "Konjunkturpaket II"	Refurbishment-Cluster "Energy-Efficiency in historical buildings"		
	Connected Energy Supply	Communal wind park "Rödeser Berg"	Development of modular Energy supply	Field test demand-side-management in households	Marketing for Implementaion projects
		wood gas CHP	Energy-Efficiency-Fund		Informationen for the inhabitants of Wolfhagen
		LED-Street-Lighting	Electricity-Benchmark		Energenial qualification and on-the-job training
		Heatpump-Contracting Firedepartment Bründersen			
	Electromobility	E-mobility and soft tourism	E-Mobility Pilot		
		Solar-Draisine Solar-Railbus			
		E-mobility and Cooperation Herwig - Blankertz Berufsschule			

Key area refurbishment of the existing building stock



targets:

- Increase of refurbishment rates and efficiencies
- reduction of barriers
- securing regional economic development

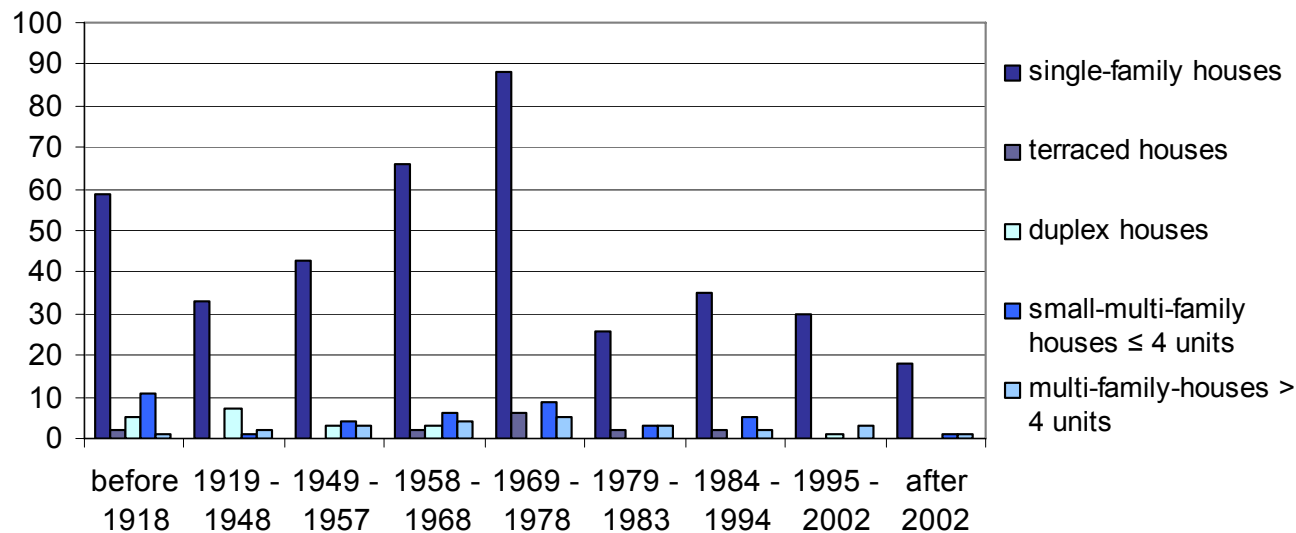
measures:

- modular refurbishment concepts
- model refurbishment for historic framework ensembles
- renewable heat supply for city centres
- coporations with craftsmen, planners and local banks

Barriers for refurbishment – building ages

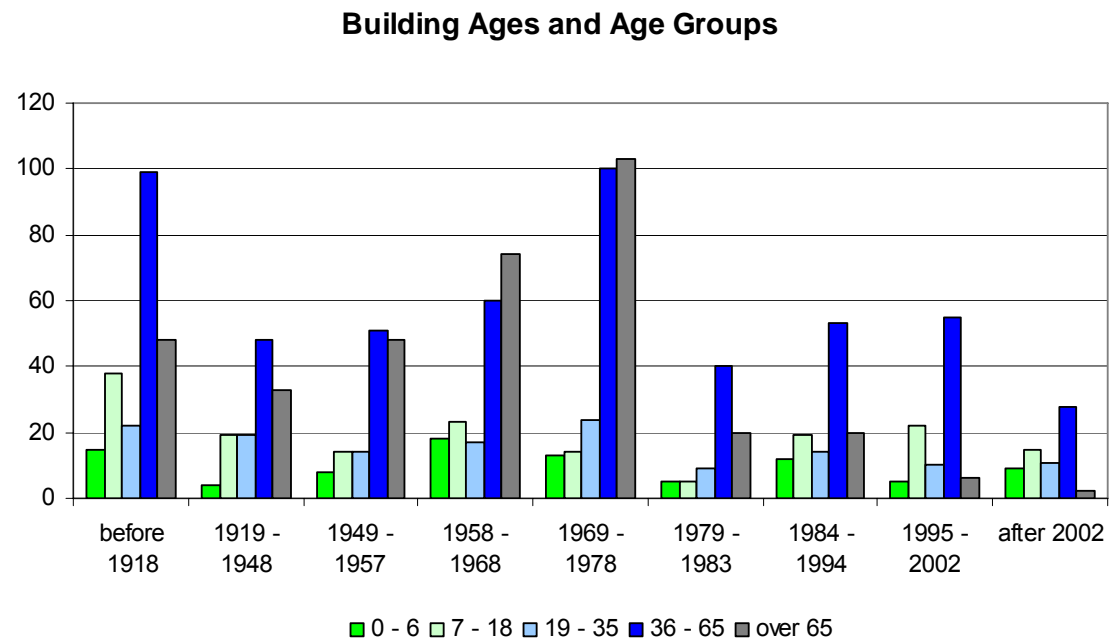
- strong dominance of single-family buildings
- large number of individual owners
- majority of buildings was built before 1980 (first heat conservation ordinance in Germany in 1984)

Building Types and Building ages from Household Inquiry



Barriers for refurbishment – ownership structure

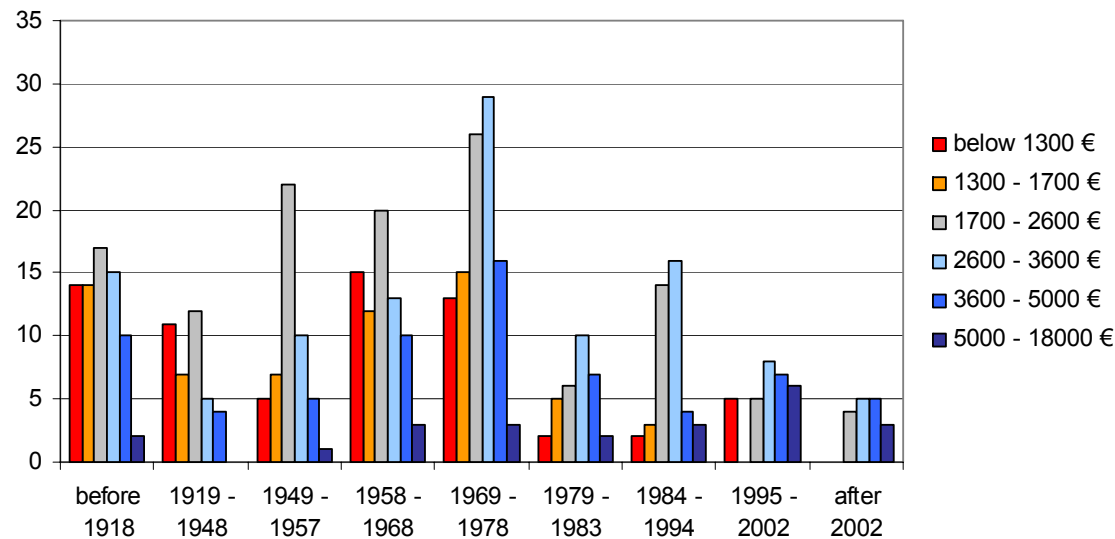
- dominance of older age groups in buildings 1958-1978
- often „doesn't pay-off for me any more“ mentality
- ownership change has taken place in buildings before 1949



Barriers for refurbishment – income structure

- low household incomes dominate the most difficult buildings to be refurbished (historic framework buildings)
- moderate and high incomes dominate new buildings
- low motivation for refurbishment due to age structure despite moderate or high incomes (different priorities)

Building Ages and Household Income



Key area efficient connected energy supply



targets:

- local renewable energy plants
- utilisation of load-management synergies
- cost and supply security

measures:

- Demand-Side-Management
- Modular energy supply, heat pumps and CHP
- Energy Efficiency Fund
- Benchmarking and Information

Key area electro-mobility



targets:

- development of e-mobility infrastructure in Wolfhagen
- utilization of load-management synergies

measures:

- pilot e-mobility vehicles
- development of infrastructure
- coporations in education
- field-test

Key area education and information



targets:

- establishing a new development target
- strengthening of citizens' initiatives
- change of paradigm
- securing positive local development

measures:

- local contact person and office
- education and information coporations
- marketing and communication

Thank you very much!

Auf Wissen bauen

