



Urban Development

Debreceen, 14. October 2011

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www.energieeffizienzverband.de

INTELLIGENT ENERGY EUROPE
UP-RES
Urban Planners with Renewable Energy Skills


WÄRME | KÄLTE | KWK

Urban Energy Conference
Debreceen, 13.-15. October 2011

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» AGFW - Who We Are



- » AGFW is the efficient, independent and impartial association promoting (district) heating, cooling and CHP at national and international levels
- » AGFW reunites about 450 (regional und municipal) district energy suppliers and industrial operators of this industry in Germany and Europe
- » AGFW represents over 95% of the heat load connected to German district heating systems – the largest scale in Western Europe
- » AGFW means 40 years of experience in this field

HEATING | COOLING | CHP

AGFW | Energy efficiency association for heating, cooling and CHP

Source: AGFW

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» German Energy Policy - Political Targets of the Government

	Climate	Renewables			CHP	Energy efficiency			
		GHG Base 1990	Share Electr.	Share Heat		Share overall FEC	Share Electr.	Primary-energy	Electr.
2020	-40%	35%	14%	18%	25%	-20%	10%	increase to 2,1%/a	-20%
2030	-55%	50%		30%					Renovation rate from 1% to 2% p.a.
2040	-70%	60%		45%					
2050	-80-95%	80%		60%		-50%	25%		-80% PEC and RES

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Source: AGFW / BMU

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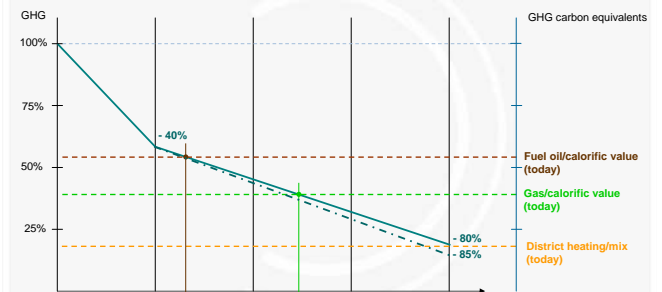
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» The Phase-out Curve of Technologies

Reduction of GHG emissions according to the "Energy Scenarios for an Energy Concept of the German Government" (Project 12/10)



GHG carbon equivalents

100%
75%
50%
25%

1990 2020 2030 2040 2050

end of Oil end of Gas

-40%
-80%
-85%

Fuel oil/calorific value (today)
Gas/calorific value (today)
District heating/mix (today)

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Source: AGFW

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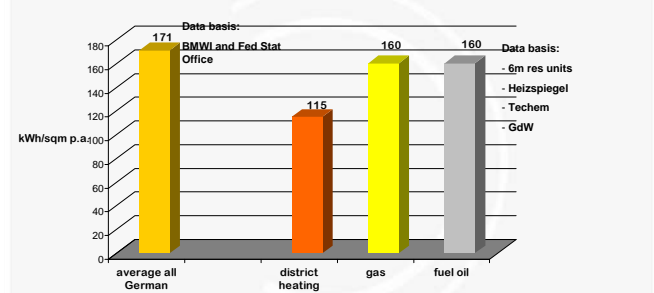
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» Energy Consumption of Residential Buildings by Type of Service

Heating water and hot water consumption (only heating approx. 15 - 30 kWh/sqm p.a., across all classes of buildings; years under review 2006 -2009, data basis > 6 million residential units (double counting possible))



kWh/sqm p.a.

171 115 160 160

average all German households district heating gas fuel oil

Data basis:
- BMWI and Fed Stat Office
- 6m res units
- Heizspiegel
- Techem
- GdW

Buildings using district heating service feature the lowest heating energy usage and the lowest carbon emissions in an all-German comparison!

Data sources: AGE, Federal Statistical Office and Techem study, GDW statistics, Heizspiegel
BMWI = Germany Ministry of Economics

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Source: AGFW

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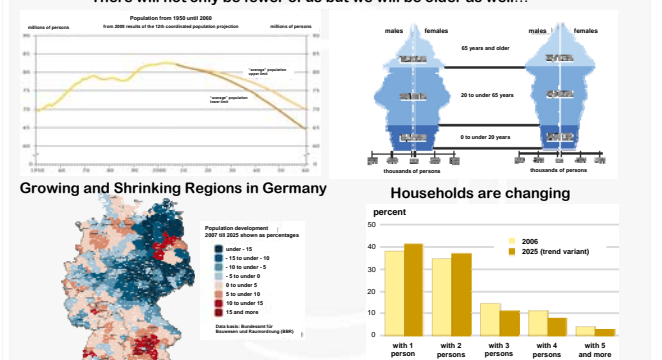
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» Demographic Changes

There will not only be fewer of us but we will be older as well...



Population from 1950 until 2050
from 2008 residents of the 100 smallest population regions

millions of persons

0 10 20 30 40 50 60 70 80 90 100

1950 1960 1970 1980 1990 2000 2010 2020 2030 2040 2050

Population development 2007 till 2025 shown as percentages

- under -15
- 15 to under -10
- 10 to under -5
- 5 to under 0
- 0 to under 5
- 5 to under 10
- 10 to under 15
- 15 and more

Data basis: Department for Information and Forecasting (BfL)

Households are changing

percent

50
40
30
20
10
0

with 1 person with 2 persons with 3 persons with 4 persons with 5 and more persons

2006 2025 (trend variant)

Sources: Stat. Bundesamt/BBR

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Source: AGFW

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» National Urban Development

- » EU: 'Leipzig Charta' on sustainable European Cities (2007): Integrated urban development as a process.
- » Germany: National Programme of Urban Development Policy (2003) Laws, grants, assistance, R&D
- » Saxony: Urban Development Strategy Concept (2007) Grants, laws, assistance
- » Local Municipal Concepts Implementation Energy and Environmental Concepts Integrated Urban Development Concepts



» Urban Development Strategy Saxony in 2020



Rules:

- » Inner development takes precedence over external development
- » Living (and business) in the inner city - for young and old
- » Heritage (building conservation) has priority (identity)
- » central places
- » Innovative energy concepts have priority

» Integrated Urban Development Concepts

Struktur integrierte urban development concepts

- Demography and Conditions of Life
- Specialised Concepts
 - Housing
 - Centers
 - Economy and Employment
 - Traffic and Technical Infrastructure
 - Open Space and Environment
 - Sport
 - Culture
 - Education
 - Social Concepts
- Urban (re)development strategy
- Urban (re)development areas

Integriertes Stadtentwicklungs-konzept der Stadt Leipzig (SEKu)

Zwischengebieten des SEKu Leipzig

Legende

- Stadtgrenze Leipzig
- Schwerpunktbereiche
- Handlungsgebiete auf Grund gemeinschaftlicher und über-regionaler Wirkung
- Handlungsgebiete auf Grund lokalspezifischer Wirkung
- Prüfung der Handlungsgebiete
- bestehende Gewerbegebiete und Programmgebiete des städt. beschränkten Dienstleistungs (Funktions)

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Quelle: Stadt Leipzig

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» UP-RES / Urban Planners with Renewable Energy Skills

Long Term Courses in Germany

- » Target group:
 - » Main group: Municipalities, especially urban developers/planners, environment/construction offices
 - » Downstream group: external planners, architects, and supply companies
- » Start of the courses: January 2012

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Structure of the Long Term Courses in Germany

- Module 1** (2 days à 8h): Fundamentals and introduction into the city as a system - technical infrastructure
- Module 2** (2 days à 8h): Basic conditions and characteristics - energy and energy-efficiency
- Module 3** (2 days à 8h): Physical / technical background / forms of energy / energy sources / building
- Module 4 + test 1** (2 days à 8h): Definitions and capabilities / limits of RES
- Module 5** (à 2 days 8 hours): Basic economic data - to module 3 and 4
- Module 6** (2 days à 8h): Creating a concept
- Module 7 + test 2 + excursion** (1 day à 8h + 1 day excursion and test 2): Legal framework for the implementation of energy- / climate-political and urban planning objectives
- Module 8 + Certification** (1 day 8 hours + 1 day à certification): Implementation measures - Best and Worst Practice with examples

Programme can be found on: <http://www.agfw.de/stadtentwicklung/eu-projekt-up-res>



See you again at the largest DH Trade Fair

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my best choice district heating ...

because it's clean and helps,
to save CO₂ for a better environment.

district heating
smart heat for my home.



www.smart-heat-grid.de

Many thanks for your attention!

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Thank you for your attention

Dipl.-Ing. Sarah Vautz

For more information please contact:

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