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**Climate Protection Activities in Hannover, Germany:
Taking Stock after 15 years
Prospects for Local Climate Protection Strategies**

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Hannover in Europe



City of Hannover
520,000 inhabitants

Region Hannover
administrative entity of
1,1 million inhabitants



Hannover

Fifteen Years of Commitment
to Climate Protection

1990:

Founding member of ICLEI

1992:

The City Council adopted a resolution to reduce CO₂ emissions in Hannover by 25% between 1990 and 2005, and approved a detailed energy efficiency programme.





Good Framework Conditions

- Since 1988: Stable political majority on the City Council, which supports environmental and climate protection measures.
- Solid support from the administration, with a Directorate of Environmental Affairs at the highest level.
- Energy and Climate Protection Unit founded in 1994 to devise and implement the municipal climate protection programme in association with all local stakeholders.
- A strong network of committed local organisations, businesses and institutions.

Strong Network of Local Stakeholders

The local energy utility, 'Stadtwerke Hannover', 76% owned by the City

Regional Climate Protection Agency, established in 2001, with over 30 private and public sector partners

Constructive collaboration with NGOs

Important financing model: the 'KlimaFonds' climate protection fund



Stadtwerke Hannover's 'ProKlima' energy fund

- Grants totalling 5 million € every year to over 1,000 projects
- Optimised energy efficiency retrofitting
- New power plants fuelled by renewables
- 70% subsidy for investments that are not yet economically viable



Financing the 'ProKlima' Fund

- 2m € from a small surcharge on gas bills
- 2m € from the energy utility's profits
- 1m € from the municipal budget

**Taking stock after nearly 15 years of
climate protection work:**



Successes in Heating Energy Savings

- 11% reduction in heating energy demand from 1990-1997 (interim figure) within the city area
- 8-10 % reduction in heating energy demand by municipal buildings since 1995 through simple non-investitive measures alone e.g. energy saving advice, training, environmental education
- Around 20% reduction in CO₂ emissions from heating energy 1990-2005 (estimate – precise figures available at the end of 2006)



Successes in Optimising Energy Supply

- 'Stadtwerke Hannover' meets the entire electricity needs of the city from power stations fuelled by coal, gas and (to a small extent) renewable fuels - no nuclear power.
- Expansion of district heating provision - system capacity rose from 642 MW (1990) to 1074 MW (2004).
- 91 decentral Combined Heat and Power plants with an installed load of 7.6 MW (2005)
- Use of landfill gas at the central dump and methane from a waste fermentation plant (approx. 15,000 MWh/a)

Successes with Renewable Energy

Within the city area:

- 466 registered solar thermal units, total area 4,500m²
- 209 solar-powered electricity units totalling 1,600 KWpel capacity
- Exploitation of the hydro-electric potential of Hannover's river (1.38 MW rating)

In the Hannover Region:

- Approx. 225 large wind turbines, which can meet the electricity needs of around 170,000 homes





Kronsberg Ecological Development

- new city district with 3.000 dwellings
- built 1996 -1999
- comprehensive example of visionary urban planning and construction
- overall 80% less CO₂ emissions than from normal developments

CO₂ Reduction

Aim: 60% less CO₂ emissions through:

- LEH construction methods with quality assurance monitoring
- district heating network, supplied from CHP plants
- electricity saving programme

Result:

currently 45% less CO₂ emissions compared to conventional new constructions

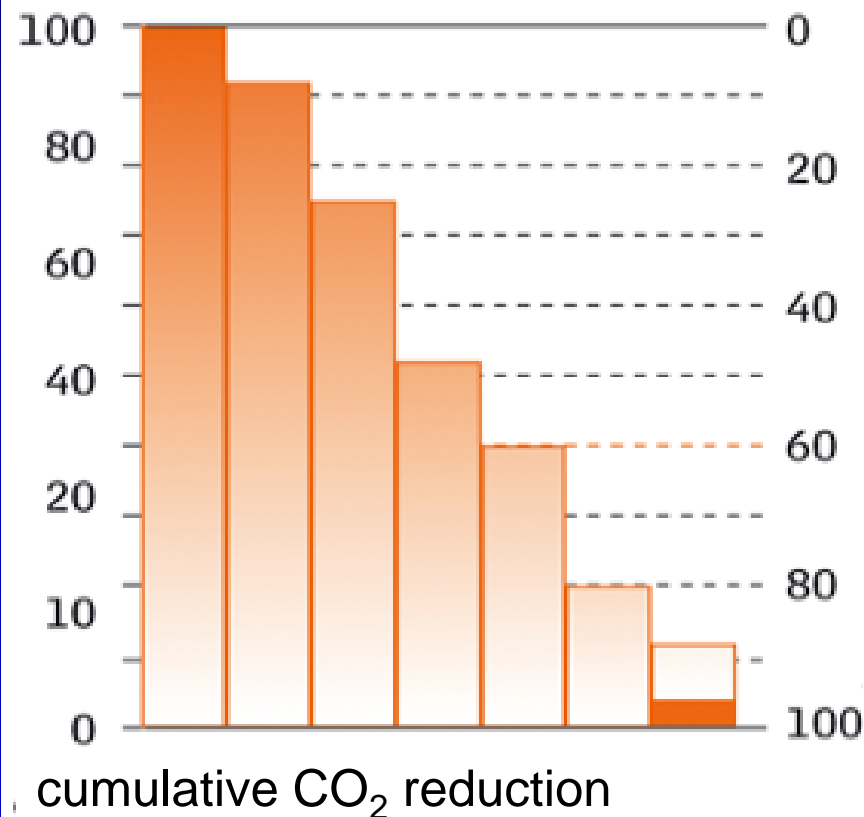
(2 tonnes per household, total 6,000 t)

Reduction of CO₂ emissions at Kronsberg

CO₂ emissions in %

CO₂ reduction in %

100% = 23.800 t CO₂ p.a.



+ quality assurance (-7%)

+ LEH standard (-17%)

+ CHP & district heating (-23%)

+ electricity saving (-13%)

+ wind energy (-20%)

+ photovoltaic, solar district heating,
passive houses > a further 5-15%
reduction

Problems with Electricity Consumption

Minimal reductions in consumption despite electricity saving campaigns; factors are:

- ever-increasing number of electric appliances, computers and other home technology
- wastage from more and more standby devices

Problems with Traffic

Despite massive investment in public transport and an excellent rail and bus network, no reduction in CO₂ emissions from transport:



- Although the number of private vehicles in the city has been constant for 10 years, the cars themselves are bigger.
- More truck journeys (just-in-time service to industry and retail)
- More air travel

Summary

Within the possibilities available to a municipality, Hannover's CO₂ reduction policies have been successful.

Overall, CO₂ emissions within the city area have fallen, not by the 25% target for the period 1990-2005 but by only about 10% (not including traffic - exact figures available at the end of 2006)

We will not give up!

Continuation of the Climate Protection Agency's work and annual grants of 5m € from the 'ProKlima' fund have recently been approved by the City Council.

Current and forthcoming model projects:

- New housing development of 300 homes to Passive House standard.
- Exemplary district retrofitting programme for older buildings with renewable fuel applications (emphasis on wood fuels)
- Special programme to increase provision from decentral Combined Heat and Power plants

