

**KLIMA-ALLIANZ
HANNOVER 2020**

A Strong Alliance for Climate Protection





Solar panels mounted on the roof of the Pavillon cultural centre

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Foreword

The City of Hannover and the Stadtwerke energy utility are jointly organising an exciting participative process – the Climate Alliance Hannover 2020. The many participants from the industrial and service sectors in Hannover, from the city administration and the utility companies, from many other institutions and organisations, are working together towards the goal of reducing CO₂ emissions by 40 per cent by the year 2020. This makes Hannover one of the most ambitious cities, both in Germany and internationally, when it comes to climate protection.

The climate protection programme launched in 2008 is no paper tiger; rather, it lives from the participation and commitment of our city's people. The process is ongoing in all three networks that constitute the Climate Alliance Hannover 2020 – now it is time for action to follow agreement. In order to ensure that this happens we will conduct an evaluation every two years.

In this brochure we would like to introduce you to the steps that have already been taken or are in planning in a variety of areas.

We wish to thank everyone involved for their work and commitment to the Climate Alliance Hannover 2010.

Stephan Weil
Mayor of Hannover
Capital of the Federal
State of Lower Saxony

Michael G. Feist
Commercial Director
and Chief Executive
Stadtwerke Hannover AG



Neues Rathaus (City Hall) in Hannover

A Strong Alliance for Climate Protection

Schoolchildren are showing their teachers how to save energy. Tenants' representatives and the real estate industry are finding common ground. Companies are voluntarily paying more for green electricity, and churches are joining forces with the sports federation to pursue a common goal. Has the world turned on its head in Hannover?

On the contrary. But there is something special happening in the Lower Saxon capital. Setting an example for the entire country to follow, Hannover has assembled a broad alliance for climate protection: the **Climate Alliance Hannover 2020** (Klima-Allianz Hannover 2020). Together with nearly 80 stakeholders from all sections of society the city administration and the utility companies are making a commitment to climate protection. Their goal is to reduce local CO₂ emissions by 40% of their 1990 level by the year 2020; in other words, the city will emit 1.8 million tonnes less of damaging greenhouse gases every year!

To achieve these ends, Climate Alliance partners have conceived of a series of steps, including interlinked short-, medium- and long-term strategies.

The Stadtwerke Hannover AG (enercity) is adopting more efficient methods of energy generation and extending their involvement with renewable energies in order to save 700,000 tonnes of CO₂ emissions per year in the city region – and all without resorting to nuclear energy.

Thanks to the unanimous City Council decision in December 2008, the city administration's CO₂ reduction goals are bound by law. Measures adopted will not only affect municipal buildings, but also the city's central purchasing department, the way city employees travel, and information-related and campaign activities.

And that's not all. Climate Alliance partners have identified numerous activities and implementation measures for climate protection at a local level. Some of the key focal points include **modernisation of existing buildings, construction of energy-efficient buildings, intelligent energy use, power generation**, as well as **informational and motivational initiatives**. Some companies have even developed their own climate protection programmes. This brochure will present exemplary measures from every area of the city's life. We hope it will be a source of inspiration to you.



Climate Alliance steering committee and task force spokesmen (from left to right): Harald Noske (Technical Director, Stadtwerke Hannover AG), Andreas Lange (HC Zementwerk Hannover GmbH), Christoph Sundermann (Evangelical-Lutheran Church in Hannover), Mayor Stephan Weil, Bernd Meyer (vdw e.V.), Hans Mönninghoff (Directorate of Economic and Environmental Services, City of Hannover), Björn Böcker (VGH Insurance, Hannover), Michael G. Feist (Chief Executive, Stadtwerke Hannover AG)

Climate Alliance Hannover: A City Commits to a Better Climate

The conditions are very favourable for a successful climate protection policy in Hannover: as far back as 1992 the City Council of Hannover passed a resolution to reduce the city's CO₂ emissions by one quarter within 15 years. An initial climate protection programme followed and important administrative measures were taken.

The challenge: 1.8 million tonnes of CO₂

When it ended in 1997, the first climate protection programme had achieved some success, but also revealed the need for further action. Emissions had been reduced since 1990, but to a lesser extent than expected. The city administration and the municipal utilities then initiated a new climate protection plan. Together with major stakeholders from industry, commerce and society they set a goal of reducing local CO₂ emissions by about 1.8 million tonnes per year by 2020.

Robust structures for shared success

As there already was a sound basis for climate protection in Hannover, the city was quick to formulate the steps that would be needed to reach the new goal. The process was controlled by a steering committee that included the Directorate of Economic and Environmental Services, the city treasury department, and the enercity management board. A core team composed of city planners, facility managers, climate protection experts, energy suppliers, power supply operators and corporate strategists organised the process. This support helped all stakeholders to agree on ambitious yet realistic measures.

The core team also included other local climate protection institutions, such as the **climate protection fund proKlima GbR** (www.proklima-hannover.de), which was founded by enercity, the City of Hannover, and other regional municipalities in 1998. It provides roughly five million euros per year in funding for energy-efficiency and energy-saving measures in the region. The non-profit climate protection agency **Klimaschutzagentur Region Hannover GmbH** (www.klimaschutz-hannover.de), which has been providing citizens, public authorities and companies in the Hannover region with information since 2001, is also involved.

By stakeholders for stakeholders

At the inception of the Climate Alliance in 2007, Mayor Stephan Weil invited representatives from industry, housing companies and various associations and citizens' groups to work together in task forces. They began by formulating concrete climate protection steps. In June 2008, the new climate protection action programme was unveiled to the public. Finally, on 11 December 2008, the City Council Assembly confirmed the legally binding status of the agreed reduction targets.



Award for commitment to climate protection: Director of Economic and Environmental Services Hans Mönninghoff (right) honours sports clubs who participated in the e.coFit advisory project



The **climate protection unit (Klimaschutzleitstelle) of the City of Hannover** was established in 1994 as a central coordinating office within the city administration. Its main area of responsibility is coordinating various climate protection initiatives within the city and cooperating with other local and regional government organisations at national and international level.

More: www.hannover.de, keyword climate protection

The City of Hannover holds a majority stake in **Stadtwerke Hannover AG (enercity)**. This company meets, with its own power stations, the total electricity and heat requirements of the city area. In the broader Hannover region enercity supplies over 650,000 people with electricity, natural gas, district heating and drinking water. enercity has been deliberately moving into services that are closely related to its core business areas, such as contracting.

More: www.enercity.de

Six sectoral task forces drafted the steps included in the climate protection programme:

- Industry
- Residential buildings
- Commercial buildings
- Opinion leaders
- City administration
- Municipal utilities

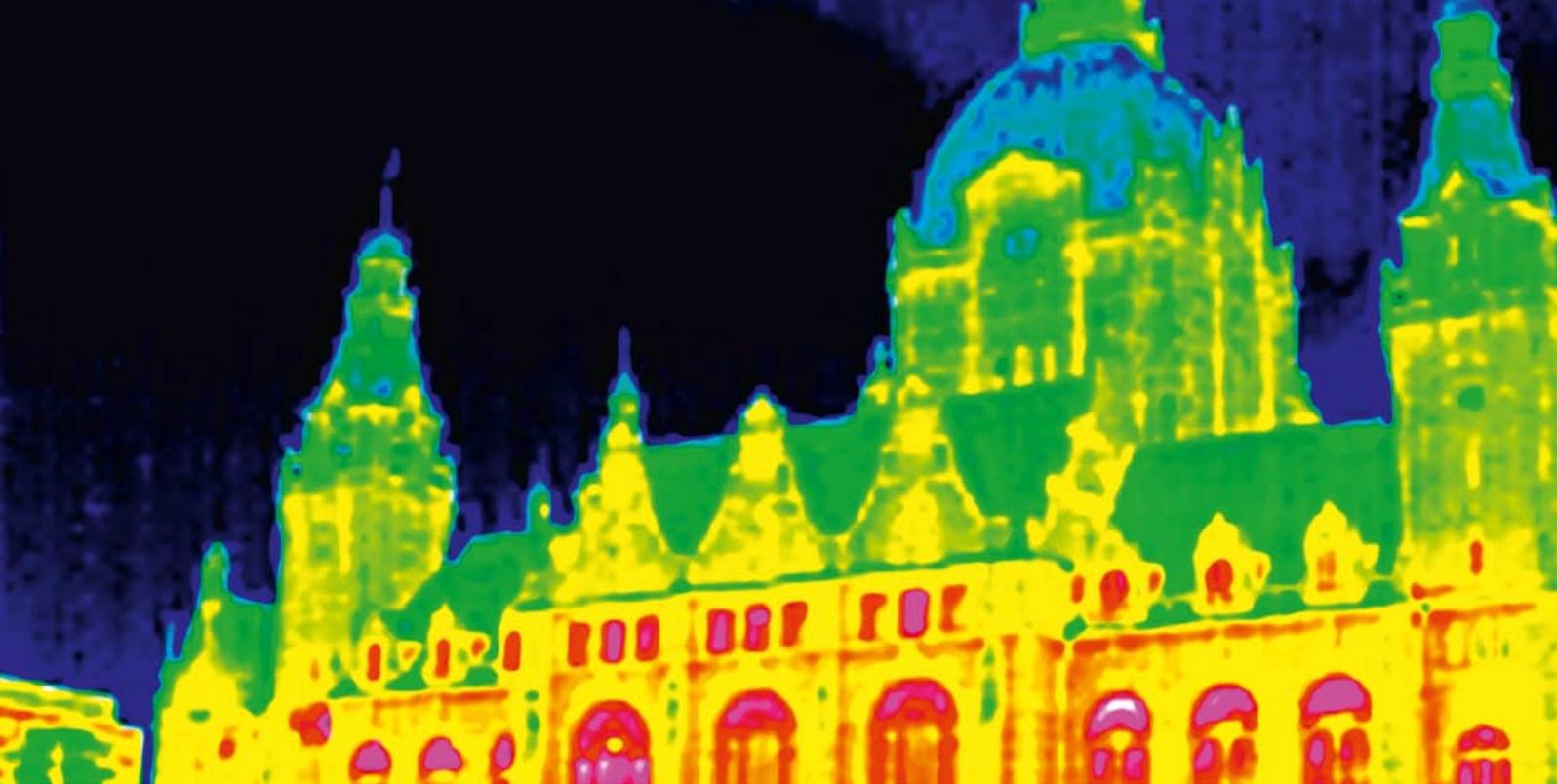
Measuring success

An independent engineering office will regularly measure how Hannover's CO₂ emissions are developing. Every two years the city will publish results concerning the degree of success of the climate protection measures. Moreover, an additional monitoring process is conducted every five years to observe the energy savings that have already been made. A report of this kind will be produced in 2010, 2015 and 2020.

City administration and municipal utilities as models

As initiators and sponsors of the Climate Alliance, the city administration and the utilities have also set ambitious goals for themselves. The city administration is implementing CO₂ reduction measures in all areas under its control. The most important of these are:

- **Modernisation of buildings:** energy-efficient renovation of all older municipal buildings by 2020
- **Construction of all new buildings to passive-house**



Beautiful but energy-intensive: The Neues Rathaus is being refurbished, in compliance with its status as a listed building, to become more energy-efficient



standards: incorporation of climate protection priorities in urban planning, municipal tenders and land sales

- **Intelligent energy use:** energy efficiency in building management and procurement of materials, efficient street lighting and traffic signalling systems
- **Information and motivation:** involvement of users in the energy-efficient running of municipal properties

The Stadtwerke contribute to the process in the following areas:

- **Energy generation:** increasing efficiency, reducing CO₂ emissions per kWh of electricity generated
- **Renewable energies and co-generation of heat and power:** expansion of these approaches as far as current circumstances allow

The measures undertaken by the other stakeholders, which are described below, may also be classified in the categories mentioned above.

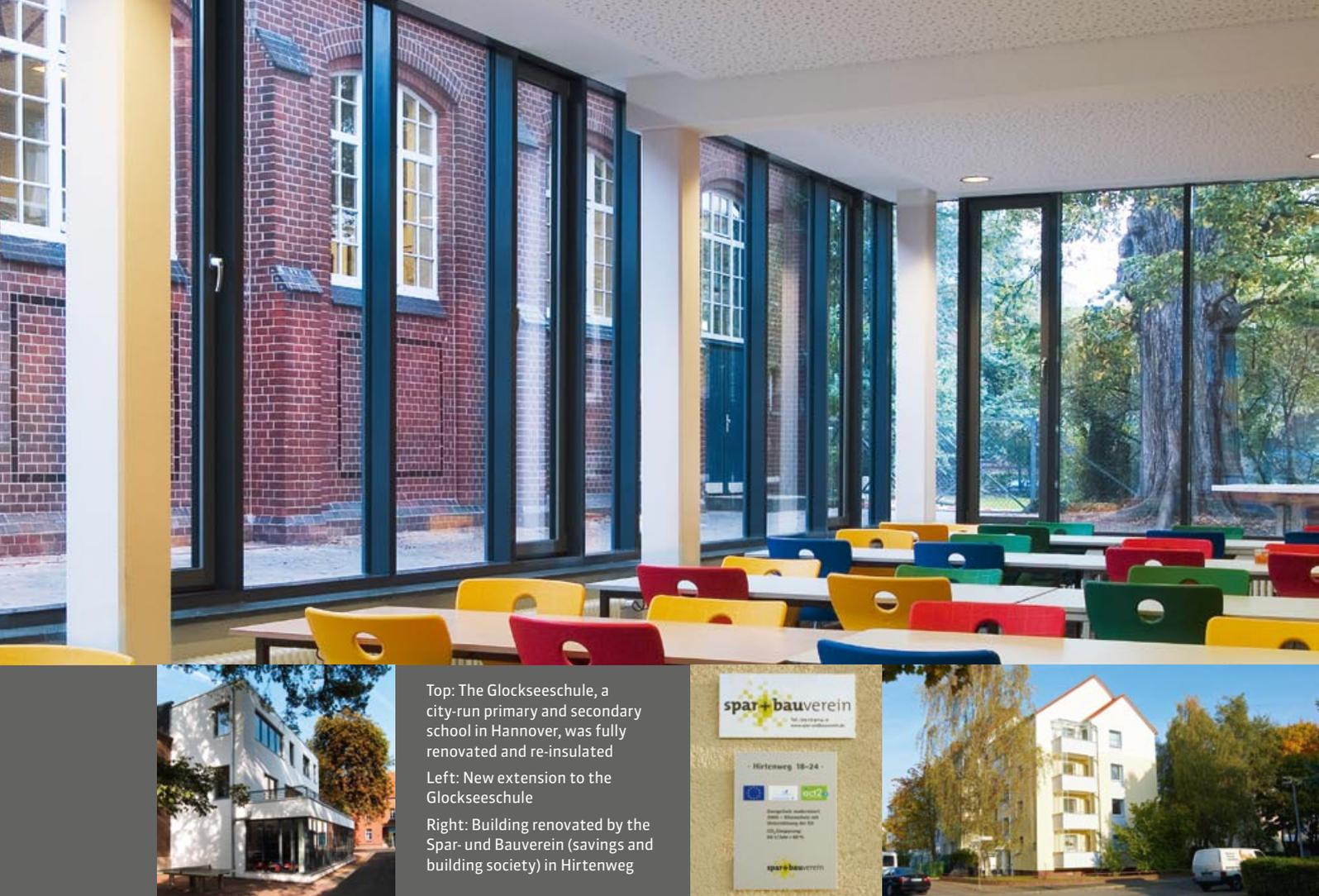
The activities of the Climate Alliance Hannover 2020 focus on energy supply and consumption, as electricity and heat generation are by far the greatest source of CO₂ emissions (83 per cent) in the Hannover region. The themes traffic, waste, land and forest management are covered by the framework programme for climate protection of the Hannover Region, and are therefore not included in the city's Climate Alliance.



Herbert Flecken:
*"In 1995 **Verlagsgesellschaft Madsack** became the first company in the media sector to produce an ecological balance sheet. A further analysis in the year 2000 contained a balance sheet of all local*

and global environmental impacts of our newspaper production. We set ourselves the target of reducing the CO₂ emissions from our newspaper production by 40 percent by 2020."

Since 2007 the **Hannover Rückversicherung AG** has been implementing measures to sustainably preserve resources. The company has also calculated the impact in terms of CO₂ emissions of its operations at its Hannover headquarters. Last year this came to 9,000 tonnes, of which the company has offset 98 per cent. The offset payments are used to fund climate protection projects in developing countries.



Top: The Glockseeschule, a city-run primary and secondary school in Hannover, was fully renovated and re-insulated

Left: New extension to the Glockseeschule

Right: Building renovated by the Spar- und Bauverein (savings and building society) in Hirtenweg

Older Buildings Get a Makeover

Thermal heating alone accounted for around a third of Hannover's CO₂ emissions in 2005. A large proportion of these emissions could be avoided through building renovation. Particularly thermal insulation of exterior walls, roofs and cellars, as well as highly efficient windows reduce energy demand while simultaneously increasing comfort levels of residents and other building users. This is an issue that all property owners need to address.

Improving climate protection – improving buildings

In particular, the task forces on residential buildings, commercial buildings and city administration emphasised the issue of energy-efficient renovation and set ambitious targets. For example, companies belonging to the **vdw (Verband der Wohnungs- und Immobilienwirtschaft in Niedersachsen und Bremen e. V. – Association of the housing and property development industries in Lower Saxony and Bremen)** will invest approximately two billion euros in climate protection measures in Hannover alone by 2020. This will result in CO₂ emissions reductions of more than 25 per cent in buildings owned by vdw members.

Meanwhile, the task force on residential buildings is continuing its efforts under the title of the **Partnership for**

Climate Protection (Partnerschaft für Klimaschutz).

The key topics discussed by this group include energy-efficient renovation and construction. This involves property owners' and tenants' organisations such as **HAUS & GRUNDEIGENTUM Hannover** and the **Deutscher Mieterbund Hannover e. V.** joining forces. Proposals include a jointly developed information website to promote greater acceptance of renovation measures among both tenants and property owners.

Many stakeholders – one goal

Gundlach GmbH & Co. KG Wohnungsunternehmen and the **Spar- und Bauverein eG** carried out energy-efficient renovation of apartment buildings as part of the EU-funded Concerto project. In both cases rows of houses



Top: Building owned by the property development company Gundlach following renovation

Far left: Renovated residential building owned by the Zusatzversorgungskasse property and pension fund

Left: Energy-efficient renovation of the student residence at Jägerstrasse



constructed in the 1950s and 1960s were insulated in compliance with the German government’s energy saving directive (EnEV) for new buildings, and were connected to the district heating grid. This improvement will result in long-term CO₂ emission reductions of 70 per cent.

The municipal housing development company **GBH Gesellschaft für Bauen und Wohnen Hannover mbH** has committed itself to reducing emissions from its buildings by one third of the 1990 level by 2020.

The housing and pension fund **Zusatzversorgungskasse der Stadt Hannover (ZVK)** will also invest approximately 39 million euros to modernise one quarter of all its apartments by 2020.

The savings bank **Sparkasse Hannover** also modernised its branch office in the Hämelerwald district to the highest energy standards. The façade and roof were re-insulated, and a wood-pellet heating system, solar thermal heating and photovoltaic electricity systems installed. The cooling ceiling is fed with cool air from two 70-metre-long ground spikes, thus removing the need for a refrigerating machine. The building now emits 89 per cent less CO₂ than before modernisation.



Hans Mönninghoff, Hannover City Administration: *“All of the city’s schools and daycare centres that are in need of modernisation are being improved step by step. As a city administration we have made a commitment*

to exceed the requirements of EnEV 2009 by 30 per cent. Since 2005 we have carried out thorough energy improvement on 20 properties with a total area of around 47,500 square metres.”

Burghardt Dierker-Ochs, Studentenwerk Hannover:

“We are currently carrying out energy-efficient renovation of our student residences at Jägerstrasse and Nobelring, which together house around 240 students. We’re also planning to carry out large-scale renovation of other buildings, and will possibly construct a new energy-efficient residence.”





Top: Passive house in Rehmer Feld
 Left: The Klaus-Bahlsen-Haus nursing home in the Bothfeld suburb with a highly insulated external shell and heat recovery system
 Right: Architect's sketch of the 'zero-E' zero-emissions housing development at In der Rehre in the Wettbergen district



New Buildings of the Highest Quality

Strict ecological standards apply when constructing new buildings in Hannover. Whoever purchases a plot of land from the city commits to constructing low-energy buildings, if possible connected to the district heating grid. The benchmark standard is the German government's 2009 energy saving directive (EnEV), which in fact must be exceeded by 15 per cent. Moreover, property developers who build passive houses are given preference in the awarding process. As a result there are already more than 300 passive houses in Hannover. A similar number of passive houses are being built in the suburb of Wettbergen.

Those who purchase municipal land for commercial purposes receive in-depth advice on energy efficiency. Many agree as a result to implement even higher energy standards as they realise that this will result in considerable operational savings. The best current example is the completed supermarket building for the food discounter **Lidl** in the Wettbergen district. This building serves as a model of energy efficiency for the entire discount retail trade in Germany. From 2010 the technical equipment and fittings used in this store will become standard for the entire company. The store is also equipped with photo-voltaic solar panels.

Innovative construction

Urban planning was a major element even in the first climate protection programme. The first 3,000 low-energy houses were built in the Kronsberg district in 2000. The **proKlima** funding programme provides ideal conditions for climate-conscious home-builders. This fund also puts home-builders in contact with expert technicians. For this reason the Lower Saxony **Architectural Association (Architektenkammer Niedersachsen)** and the **Hannover Chamber of Trades and Crafts (Handwerkskammer Hannover)** are committed to providing further training for their members in the fields of climate-friendly construction and modernisation.



New passive-house construction for a primary school at In der Steinbreite

Left: New office building for VGH Versicherungen

Right: Passive-house construction of children's daycare centre in Ricklinger Strasse



Reduce consumption – increase comfort

In June 2009 the insurance company **VGH Versicherungen** moved into the final section of its new office building in Hannover. A variety of technical solutions were considered in the architectural plan in order to ensure minimal energy consumption. Concrete core activation, heat recovery and solar energy enable this building to operate with 40 per cent less energy than comparable buildings.

In late 2008 the statutory health insurance fund **AOK Niedersachsen** moved from several decentralised locations to its new service centre. The new building is far more efficient than the previous offices, resulting in a decrease by more than half in energy consumption.

The **City of Hannover** has made the decision to consistently construct all new buildings to passive-house standards. In the coming years, the City will build 14 new buildings with a total (net) floor area of 37,000 square metres. Already six passive-house projects are in the process of planning or construction. The new primary school in the Davenstedt district has heating requirements of less than 15 kWh per square metre.

Matthias Herter,
**meravis Wohnungsbau
und Immobilien GmbH:**

“meravis is going to build a local shopping complex and terraced housing to passive-house standards in the ‘zero-E’ in Wettbergen, Hannover’s first zero-emissions housing development. Whatever minimal CO₂ emissions cannot be avoided will be offset against renewable energy generation.”



Angelika Blencke,
**Lower Saxony Archi-
tectural Association:**

“To successfully carry out low-energy construction and renovation you need to ensure a good working relationship between developers and architects. That’s

why the Architectural Association has developed a comprehensive range of services, from energy consulting to seminars for developers.”



Top: Production plant of Columbian Carbon Deutschland GmbH
 Left: Head office of NORD/LB bank in the centre of Hannover
 Right: Deutsche Messe Convention Center

Intelligent Energy Savings Using the Latest Technology

Hannover is a highly coveted location for industry. The city on the River Leine is home to numerous companies and has a proud tradition of manufacturing industry. The price of this success is the fact that more than a third of the city's CO₂ emissions come from industry. However, the energy savings between 1990 and 2005, during which industrial CO₂ emissions decreased by 13 per cent, prove that productivity and climate protection are not mutually exclusive.

Well connected for reduced consumption

Efficient processes reduce energy consumption, save money and therefore secure competitive advantage. The greatest energy-saving potential for office buildings lies in the technical equipment and the information and communication technology. The task forces on industry and commercial buildings came up with numerous ways to reduce energy consumption. To ensure that they continue to benefit from innovative solutions the groups are continuing their work of information exchange in the form of an **Energy Efficiency Network (Energieeffizienz-Netzwerk)**.

Production and processes

All production divisions and locations of **Continental AG** have been required by the management board to embrace common corporate targets: between 2008 and 2012 alone the production-related energy consumption and the associated CO₂ emissions are to be reduced by approximately 15 per cent.

INBEV Deutschland has achieved impressive energy savings at its Hannover subsidiary, **Gilde Brauerei AG**. In the past five years the brewery managed to reduce energy consumption per hectolitre of beer produced by over 10 per cent.



Top: Mayor Stephan Weil and enercity CEO Michael G. Feist replace the last mercury-vapour light bulbs with energy-efficient bulbs

Right: Highly efficient kiln line 7 at the HC Zementwerk Hannover GmbH (formerly TEUTONIA Zementwerk AG) with a cyclone preheater and flue gas purification system.



Lighting and power

The street lighting in the **city of Hannover** is already provided for by energy-efficient lamps and bulbs. LED lighting will be employed more extensively in the future in order to further reduce electricity consumption. The **Stadtwerke Hannover AG** is responsible for implementing these measures on behalf of the city. All new traffic signalling systems will be equipped with LED technology.

The **Deutsche Messe AG** is equipping all of its trade fair and convention halls with energy-efficient lighting. The company is also testing whether the roofs of its halls are suitable for installing solar technology. In its offices, the focus is on reducing to a minimum the energy lost through keeping machines on standby. One solution is to use master/slave power strips.

As part of the process of improving its company's sustainability management system the **NORD/LB** bank has added CO₂ emissions to its environmental balance sheet, and has published this information in its annual reports since 2007. To continually reduce its impact on the climate the bank has put particular emphasis on energy efficiency as part of its corporate environmental protection plan.

Matthias Dorsch,
AWD Holding AG:

"We were able to greatly reduce our consumption of electricity and heat by implementing technical improvements to the ventilation system in our office and datacentre. Since

summer 2009 a new energy-efficient ventilation system with heat recovery saves us over two million kilowatt hours per year in heating costs."



Andreas Lange,
HC Zementwerk Hannover GmbH:

"We are planning to invest in cement production plants that would allow us to switch to less CO₂-intensive products. This will allow us to save at least 30,000 tonnes in CO₂ emissions per year. The construction period will be approximately two years."



Top: District heating pipelines at the power station in Hannover-Stöcken
 Left: CHP unit in Ostwender Strasse
 Right: CHP unit of the sports club Sportgemeinschaft von 1874 in Hannover-Herrenhausen
 Far right: CHP unit at the GBH Mieterservice



Combined Heat and Power: Energy Efficient Generation

Combined heat and power (CHP) uses energy to double effect: waste heat produced during electricity generation is used to heat air and water. Around one-third of Hannover's electricity is already being generated in this manner – well above the average in Germany. The city administration and the Stadtwerke Hannover AG are both determined to further extend the use of CHP.

enercity – a pioneer in combined heat and power

The Stadtwerke Hannover produces enough electricity to supply the entire municipal area of Hannover. In line with the steadily growing generation capacity, enercity will also further develop combined heat and power, and will modernise the entire power plant complex.

Extension of the Linden thermal power station

The thermal power station in Hannover-Linden has been generating electricity and heat from CHP since 1962, and since 1998 with a gas and steam turbine. Its current modernisation phase is due for completion at the end of 2011. The plant will be modernised through the addition of a new, higher-performance steam turbine and an additional gas turbine. As a result, the plant's output will more than double. This development will be accompanied by an extension of the district heating supply.



Linden power station with gas and steam turbines. In the foreground is the Anzeiger building, which belongs to the Madsack publishing company

The energy CHP power plants

Location	Commissioned	Output
Linden (natural gas, gas and steam plant)	1999	100 MW _{el} / 95 MW _{th}
Linden (extended gas and steam plant)	2011 (planned)	130 MW _{el} / 90 MW _{th}
Hannover-Stöcken (hard coal)	1989	230 MW _{el} / 425 MW _{th}
Herrenhausen (natural gas)	1975	100 MW _{el} / 116 MW _{th}
36 CHP	since 1994	5,1 MW _{el} / 7,8 MW _{th}

Decentralised CHP units in Hannover

Decentralised CHP units form an additional element in the climate-friendly energy supply system. These units produce CHP electricity and heat for individual buildings or building complexes. The proKlima climate protection fund has provided funding for the installation of CHP units – with great success. By the end of 2009 over 170 units had been installed in Hannover. In the Kronsberg district, where a model low-energy housing project was constructed as part of EXPO 2000, two CHP units continue to supply the entire district with heat.



Dieter Cordes,
Gesellschaft für Bauen und Wohnen Hannover mbH (GBH):

“Since 2005, MSV, a subsidiary of GBH Gesellschaft für Bauen und Wohnen Hannover mbH, has already installed 19 combined heat

and power units. These heat 1,019 apartments and save 1,500 tonnes of CO₂ emissions per year.”

Harald Noske,
Stadtwerke Hannover AG:

“The extension of the Linden thermal power plant is the single most effective measure taken by the Climate Alliance. The new gas and steam turbines will allow us to save 200,000 tonnes of CO₂ emissions per year from 2011.”





Energy as a school subject: Over 90 schools and 70 children's daycare centres are taking part in the city's energy-saving programmes 'GSE' und 'Klik'. Together with the 'Tatort Büro' programme, these result in annual savings of 2,000 tonnes of CO₂ and 500,000 euros

The Knowledge Needed to Act

Everyone needs to get involved in climate protection. Private households are responsible for almost a third of Hannover's CO₂ emissions. Information targeted at specific groups and selective incentives encourage the maximum number of people to play their part.

Involvement at the grassroots of society

There are numerous places where citizens of Hannover can go to receive advice and support on climate protection issues. These include the energy advice centre run by the **Stadtwerke** at the energycity expo Café, the telephone hotline run by the **Klimaschutzagentur** and the **Lower Saxony consumer advice centre (Verbraucherzentrale Niedersachsen)**. In addition to dedicated associations and clubs, such as the **Bürgerinitiative Umweltschutz (BIU)** or **Migranten für Agenda 21**, many organisations and companies are focused on informing and motivating their staff. Through the opinion leaders' task force these groups have contributed to the development of the climate protection action programme. Since August 2009 they have been continuing this work through the **Opinion Leaders' Network (Netzwerk Multiplikatoren)**.

Advice on energy savings for private households

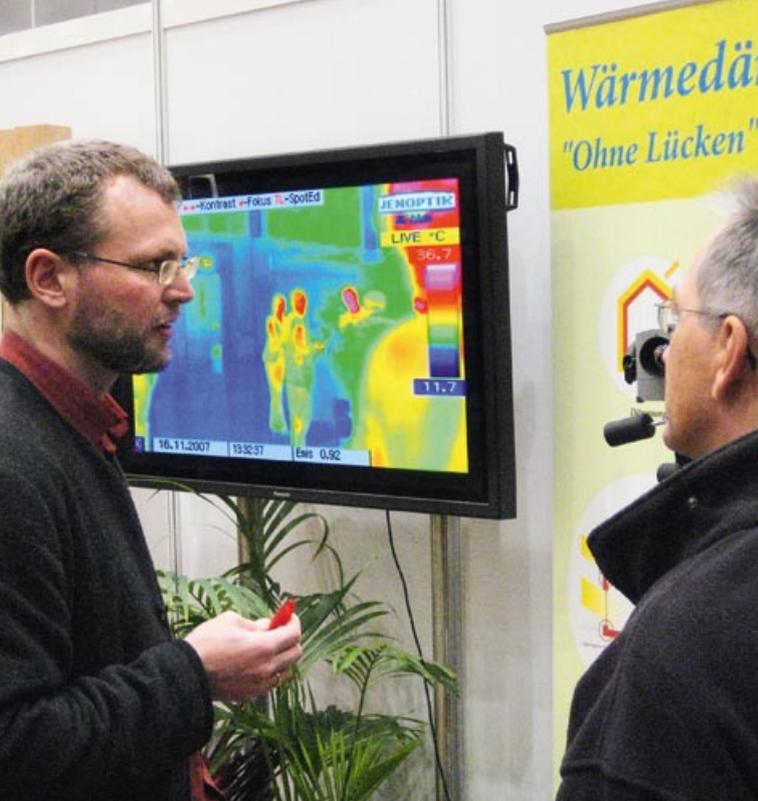
In response to growing electricity consumption in private households, numerous partners in the Climate Alliance have been participating in an advisory campaign. In 2008 and 2009, citizens in long-term unemployment received training as energy saving advisors. By 2010 these advisors will have conducted up to 2,000 advisory meetings in selected districts. The aim of this project is to reach low-income rental and immigrant households.

Energy advice for business and industry (construction)

The **City of Hannover** offers advice for investors in relation to the purchase of development land, the creation of development plans and urban planning contracts. It also offers information on passive-house construction and regenerative energy supply. The campaign 'e.coBizz – energy efficiency for enterprises' run by the regional partners **Klimaschutzagentur** and **proKlima**, in conjunction with the **Chamber of Commerce and Industry (Industrie- und Handelskammer)** and the **Chamber of Trades and Crafts**, is geared towards small and medium-sized businesses. These receive access to funding from the KfW Bankengruppe (promotional bank) and other services. The network **ÖKOPROFIT® Hannover**, which is run by the **City of Hannover** and **Hannover Region** administrations, has provided in-depth advice to more than 120 companies. Most of these were awarded prizes for their economically effective environmental protection measures.

Funding and advice for passive-house construction

Information campaigns run by the **Klimaschutzagentur** increase public familiarity with passive-house construction; while detailed consultations with expert energy advisors and the attractive financial aid offered by **proKlima** offer support in putting good intentions into action. Every year these two agencies jointly conduct passive-house days



Left: Modernisation advice from proKlima

Top: Prizewinners in the energy quiz at Volkswagen Commercial Vehicles

to inform and motivate the public. The City of Hannover also advises potential buyers of municipal land and gives preference to those who build passive houses.

Bringing employees on board

At VW Commercial Vehicles, major CO₂ reductions were achieved by raising employee awareness about climate protection and repeatedly conducting energy-saving campaigns. One particularly successful campaign that gained a positive response was conducted in 2008, where employees took part in an energy quiz in which they could win attractive prizes, such as a training course in efficient fuel use.

VGH Versicherungen regularly conducts informational events for its staff in order to motivate them to adopt more energy-saving behaviour and to make them familiar with the company's sustainability guidelines.

The Evangelical-Lutheran Church in Hannover has set itself the goal of reducing its own CO₂ emissions by 15 per cent before 2015. To achieve this target it has launched an energy-saving programme with a range of financial support options. In addition to this, the "Grüne Hahn" project, in which around 50 church congregations are introducing and maintaining the European environmental management system EMAS, is being continued. The church's city administration office and the Haus kirchlicher Dienste (Church services centre) are also taking part in the ÖKO-PROFIT® initiative. The Catholic Church in the Hannover region is also exploring the issue of climate-conscious and energy-saving behaviour in its parishes and offices.

The City of Hannover provides training courses in fuel-efficient driving for its employees. Through the programmes

GSE – 'Gruppe schulinternes Energiemanagement' (Group for Energy Management in Schools), KliK – 'Klimaschutz in Kindertagesstätten' (Climate Protection in Child Daycare Centres), and 'Tatort Büro' ('Crime-scene Office') task forces from these organisations investigate the energy and water consumption in their buildings with the help of energy advisers. They then work out ways of saving energy levels, and receive a bonus for successfully implementing the measures.



Nadiya Dorokhova,
Migranten für Agenda 21:
"Our energy advisory services are tailored to the needs of immigrants and include information material in several languages. This way we are able to reach certain groups of people who are not targeted by other services."

Rita Girschikofsky,
Stadtsportbund Hannover e.V.:
"Through our e.coFit and e.coSport projects we offer energy consulting to all of our member sports clubs. This includes advice and support in modernising



their clubhouses to meet higher energy standards. We also regularly offer their members tips on how to save energy – both through our own publications and through the sports clubs themselves"



Top: Ronnenberg biogas plant run by enercity, where bio-methane is processed and fed into the natural gas grid

Left: Photovoltaic power plant Herrenhausen

Right: Filling up with wood chips

Far right: Hydroelectric plant in Herrenhausen



Energy That's Growing

The extension of renewable energy is an indispensable element of climate protection. However, because open spaces for wind parks or biomass production are scarce this is a particular challenge for large urban communities. In Hannover, solutions implemented within the city are complemented by others in the surrounding region.

Wind energy

Large open spaces are required for wind energy production, and there are few of these available in Hannover. The Stadtwerke Hannover is therefore examining possible methods of generating wind power at a regional level or through investment in wind parks further afield.

Biogas

There has been an operational biogas facility in Ronnenberg since 2008. There, biogas is processed and refined to natural gas quality, fed into the gas grid and sold to enercity customers. The Stadtwerke are also looking at other possible locations for similar plants.

Wood

City schools and apartments owned by the municipal housing development company GBH are already heated using wood-chip technology. Since November 2007, the enercity HolzenergieCenter run by the Stadtwerke in Hannover-Stöcken has also been providing firewood and pellets for private customers.

Hydroelectric power

Within Hannover's city limits, two barrages on the River Leine are currently in use: at Schneller Graben and in

Herrenhausen. Together they produce enough electricity to supply approximately 3,000 households. An additional power plant may be built in Döhren. This would represent near-maximum exploitation of the available local water resources.

Solar energy

A solar plant is used to heat water at the Lister Bad outdoor swimming complex. A solar energy plant at the city-owned Convention Center produces around 40,000 kWh of electricity per year. The solar energy systems currently installed on municipal buildings produce a total output of 644 kilowatt peak, while further areas are available to private investors. The solar plant installed by the Stadtwerke at the Herrenhausen power plant in 2009 delivered 71,000 kWh of electricity in its first year of operation.

Green electricity

Consumers can choose between a variety of green electricity providers, including local purchasing cooperatives such as the Bürgerinitiative Umweltschutz (BIU) or Grünstrom. Customers of the Stadtwerke can choose between two different green electricity options: enercity natural electricity (Naturstrom) with or without a surcharge for investment in renewable energy plants.



The large crowds that attended the Solarfest in Hannover testify to public interest in green energy

Our Alliance for a Better Climate

ENERGY EFFICIENCY NETWORK

AOK Niedersachsen
 AWD Holding AG
 Columbian Carbon Deutschland GmbH
 Continental Aktiengesellschaft
 Deutsche Messe AG
 Ev.-luth. Stadtkirchenverband
 Hannover Rückversicherung AG
 hannoverimpuls GmbH
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 (ehemals TEUTONIA Zementwerk AG)
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PARTNERSHIP FOR CLIMATE PROTECTION

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 VWE – Verband Wohneigentum Niedersachsen e.V.
 Werk-statt-Schule e.V.

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KLIMA-ALLIANZ HANNOVER 2020

