

The Energy Transition Chronicles

**HEIDELBERG (GERMANY): THE EPIPHANY OF SUSTAINABLE
URBAN DEVELOPMENT**



This document is an extract from the publication entitled **“The Energy Transition Chronicles”** prepared by Energy Cities with the support of the Franche-Comté Regional Council and of ADEME (French Environment and Energy Management Agency). You can get the full-text version (with the stories of Schönau, Växjö, Burgenland, Brussels-Capital and Heidelberg) via Energy Cities’ website WWW.ENERGY-CITIES.EU - Resources > Publications.

The Energy Transition Chronicles

Energy Cities provides local authorities with support for implementing their own energy transition process. The *Proposals for the energy transition of cities and towns* (www.energy-cities.eu/30proposals) are illustrated with around a hundred of inspirational examples from all over Europe. In this document composed of five case reports, Energy Cities goes further and tells the tale of energy transition success stories. Because it is important to show that energy transition is “possible”. Why, how, with whom, for what results? We interviewed local players and decision-makers to find out more. Here are their stories...



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The city



Heidelberg
Germany
150,000 inhabitants

Symbol



With its 116 hectares, Bahnstadt will be the world's largest passive district

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Key figures

40% is the CO₂ emission reduction rate achieved in the building sector between 1987 and 2011

5,000 people will live in the world's largest passive district (Bahnstadt) and a further 7,000 will work there

3.1% is the unemployment rate for young people in Heidelberg – half the national average

Milestones

1990 Beate Weber, the newly elected mayor of Heidelberg, decides to make sustainable development a priority – Internal restructuring and creation of the Environmental office

1991 The municipality entrusts the Institute for Energy and Environmental Research with developing a CO₂ emission reduction programme.

1992 The 200 measures presented by the Institute are included in the Heidelberg's Climate Protection Concept

1993 Implementation of an energy management system in municipal buildings – Launch of a financing programme for retrofitting existing buildings

1995 Launch of roundtable discussions on energy and the climate: the city wants to engage local players – Large-scale campaign on energy savings in schools

1997 Following the roundtable discussions, Heidelberg creates the energy and climate protection agency in association with a neighbouring city

2001 The roundtable discussions lead to the "Heidelberg Circle for Energy and Climate Protection" - Launch of the "Sustainable management in SMEs" project

2007 Wide-ranging energy-saving awareness campaign

2009 Beginning of the construction of the world's largest passive district

CONTENTS

- Key points to remember 5**
- Part 1 – Heidelberg’s energy transition chronicles 6**
- 1. Heidelberg, a green city open to the world 6**
- 2. Energy transition, a key component of municipal strategy 6**
 - 2.1. It all started with a political change 6
 - 2.2. The early stages: Heidelberg develops an energy management strategy 7
 - 2.3. Local players’ involvement and financial support 8
 - 2.4. Consolidation and institutionalisation of the transition process 9
- 3. Results and impacts of Heidelberg’s energy transition 11**
 - 3.1. End energy use and CO₂ emissions 11
 - 3.2. Socioeconomic state of the art 12
- Part 2 – Analytical inputs 14**
- 1. The governance model 14**
- 2. Action drivers 15**
- Part 3 – Resources 16**

KEY POINTS TO REMEMBER

The energy transition process was initiated by the City of Heidelberg in the early 1990s, triggered by growing awareness of climate protection issues and, ultimately, a change in the leadership of the city. The first steps consisted in analysing emissions and redefining the municipality's internal organisation so as to offer optimal working conditions with the creation of an environmental office and the allocation of additional staff. In 1992, the city council adopted the first climate protection concept and the energy concept prepared by IFEU, Heidelberg's energy and environmental institute. The climate protection concept covered energy management in municipal buildings and city-wide, thus addressing all the energy-using sectors and players concerned. The originality of the concept lay in the fact that as well as providing technical solutions, it also included an analysis of the obstacles and avenues for raising key players' awareness. Implementation of the concepts was monitored through periodic CO₂ emission reports.

The energy transition process has been built jointly with key local players through roundtable discussions. The city has developed a truly participative approach with the energy and climate protection circle as its most emblematic symbol. The city council wants Heidelberg to be a role model in energy management. The energy concept has led to the adoption of low energy standards for new municipal buildings that are stricter than national regulations and to low energy requirements for building plots sold by the municipality. The climate protection concept and the energy concept were reviewed in 2004 and again in 2010. Between 1987 and 2011, CO₂ emissions in the public building sector dropped by 40%.

The municipality works in close cooperation with schools through various projects to include energy education in the curriculum and with SMEs to implement an environmental management system. The municipality considers communication as a means of raising citizens' awareness and has developed an innovative communication strategy. Participation in regional, national and international projects has also enabled Heidelberg to benefit from additional funding and to promote further interest in the energy issue. The municipality has become a member of European local authority networks and has joined the Covenant of Mayors.

The world's largest passive district is currently being built in the heart of the city. In 2012, Heidelberg became a model municipality for "Masterplan 100% Klimaschutz", a climate-neutral-city programme led by the Federal Ministry of the Environment, with the following targets: reduce CO₂ emissions by 95% and cut energy use in half by 2050.

PART 1 – HEIDELBERG’S ENERGY TRANSITION CHRONICLES

1. HEIDELBERG, A GREEN CITY OPEN TO THE WORLD

Heidelberg is a city situated on the River Neckar in a mountainous region in the Land of Baden-Württemberg, south-west Germany. The municipality lies at an altitude of 114m and covers 109 km²¹, 30% of which are inhabited. Heidelberg is part of the densely populated Rhine-Neckar² urban area. It is home to 150,000 inhabitants and has a young population (35% are under 30 and 16% are over 65). With 17% of foreigners, the city is known for its international atmosphere and openness to the world. Around 38,000 students study at the oldest university in Germany, founded in 1386, or at one of the many engineering university institutes. Heidelberg has research centres of international renown. In this city of knowledge, the municipal departments and the scientific community work in close collaboration. The city employs 111,000 people, of which 87% in the tertiary sector. The unemployment rate was 5.3 % in 2012³.



Climate protection and the environment are a tradition in Heidelberg. Over the years, the city has made a name for itself as an environmental protection and sustainable development capital thanks to its wide-ranging network of partners. Heidelberg was the first German city to develop a climate protection concept in 1992. The world’s largest passive district (Bahnstadt) is also being built in Heidelberg. The city has received two European Sustainable City awards and is a model municipality under the “*Masterplan 100% Klimaschutz*”⁴ programme of the Federal Ministry of the Environment. Its objective is to reduce its CO₂ emissions by 95% and to halve its energy use by 2050.

2. ENERGY TRANSITION, A KEY COMPONENT OF MUNICIPAL STRATEGY

2.1. IT ALL STARTED WITH A POLITICAL CHANGE

Increased global awareness of the importance of sustainable development and environmental conservation resulted in the creation of the World Commission on Environment and Development in 1983 and led to the Brundtland report, “Our common future”, in 1987. In Heidelberg as in the rest of the country, debates were organised on the theme of environmental protection. One of the main issues for the municipality was the local transport policy, because of its environmental impact and the large number of commuters travelling to and fro the city daily. In the energy field, Germany -like the rest of Europe- was deeply shocked by the 1986 Chernobyl nuclear disaster and debates on energy-related issues were organised in many municipalities.

In 1990, Beate Weber was elected mayor of Heidelberg. It was a transition year in local political life for it marked the end of a very long series of terms of office (24 years) held by her predecessor. Beate Weber joined the Social Democratic Party (SPD) in 1970. Before becoming mayor, she sat for ten years as city

¹ <http://ww2.heidelberg.de/datenatlas/>

² <http://www.m-r-n.com/>

³ http://www.heidelberg.de/site/Heidelberg_ROOT/get/documents/heidelberg/Objektdatenbank/12/PDF/12_pdf_HeidelbergerStatistik2012.pdf

⁴ <http://www.klimaschutz.de/de/projekt/masterplan-100-prozent-klimaschutz-der-stadt-heidelberg>

councillor (1975-1985). She was also a member of the European parliament (1979-1990), where she chaired the environmental, public health and consumer policy commission. At that time, there were few mayors with experience in environmental issues, most having a political science and administrative background. On taking up office, Beate Weber made sustainable development her central priority, giving it a triple-faceted economic, environmental and social dimension.

The Board of Inquiry of the German federal parliament launched a call to adopt measures aimed at reducing energy use and pollutant emissions as part of the “Atmosphere Protection⁵” programme. Later on, the United Nations Conference on environment and development organised in Rio de Janeiro in 1992 underlined the impact of energy usage on climate change and encouraged local participation, especially through Local Agenda 21 initiatives.

2.2. THE EARLY STAGES: HEIDELBERG DEVELOPS AN ENERGY MANAGEMENT STRATEGY



The new municipal team started by restructuring the organisational structure. The municipal authorities were required to be independent and to work transparently, but also to use and create better communication structures, to set up local networks and to provide services to citizens. Local centres were created in neighbourhoods so that citizens could carry out administrative procedures without having to travel long distances.

Restructuring included creating an environmental office (*Umweltamt*) to replace the pollution control office (*Immissionsschutz*), thus giving environmental issues a more cross-sectoral dimension. The new department covered a vast range of fields, including environmental protection, climate change, air and noise pollution. In terms of sustainable development, it appeared essential that the municipality should set an example. This is why the elected representatives decided to improve municipal buildings to promote the city as an

example of energy efficiency.

In 1991, Heidelberg commissioned Heidelberg’s Institute for Energy and Environmental Research (IFEU) to develop a programme to reduce CO₂ emissions. The survey was carried out as part of the Federal “Atmosphere Protection” programme aimed at reducing emissions by 25 to 30% by 2005. The IFEU institute identified 200 measures that were transposed into the Heidelberg climate protection concept adopted in December 1992.

According to the mayor, one of the key conditions for a successful sustainable development policy is the capacity to engage businesses, the government and civil society. The local participation mechanism emerged in the 1990s, when the mayor invited all interested citizens and organisations to participate in the transport forum (*Verkehrsforum*). For the city council, the objective was to collect input on transport. Over 60 recommendations were collected and adopted after minor revisions. Although some political parties were reluctant to adopt this participatory process, its usefulness was finally acknowledged when a number of citizens showed encouraging commitment and when results became tangible. Following this experience, the municipality felt better armed to promote active participation and the involvement of stakeholders and started to build the image of a city of dialogue. A whole series of public participation projects and public campaigns were then organised.

⁵ Enquete-Kommission “Schutz der Erdatmosphäre”

To play its role as a model, the city developed an energy management concept aimed at reducing both CO₂ emissions and energy costs. The environmental office, which only had two employees in 1992, recruited two additional experts in 1993. A baseline survey of municipal facilities was conducted in 1992 to draw up a list of the municipal buildings in most need of renovation. An energy management system was set up in 1993, allowing energy use in office buildings and schools to be measured and analysed. Behavioural changes helped reduce energy use by 5% for electricity and 15% for heating between 1993 and 1998.

The Heidelberg energy concept was prepared by a working group composed of representatives from the city council, the municipal company *Stadtwerke Heidelberg AG* and the municipal authorities. The concept included a “low energy” standard applicable to new municipal buildings and premises sold by the municipality, the definition of a “low energy” standard applicable to urban renovation projects and the transformation of the municipal company into a service company. Verifications were also made to ensure responsible, energy-focused urban planning. A report ordered from the Darmstadt environmental institute listed the official low energy building standards and a solar energy optimisation survey was carried out for local development plans.

2.3. LOCAL PLAYERS’ INVOLVEMENT AND FINANCIAL SUPPORT

In 1995, the city continued its climate protection work by organising a roundtable forum on energy as part of a national CO₂ emission reduction campaign. The roundtables had around 25 members, including influential local community members and representatives of businesses and service organisations. The discussions were led by moderators, with the support of environmental experts. The first roundtable forum was aimed at developing a joint initiative with all building sector players to adopt CO₂ emission reduction measures through retrofitting work. This first series of roundtables led to the creation of the “Heat Pass” (*Wärmepass*). A second series of roundtable discussions organised in 1998 focused on renewable energy, and solar energy in particular. The discussions were open to all stakeholders from the energy and climate sector as well as to municipal partners. The participants debated and developed strategies and projects, and made recommendations for the city’s energy and climate policy. The discussions demonstrated the importance of having a discussion and knowledge-sharing forum of this kind. Another objective was also to institutionalise cooperation at the regional level. The members suggested creating a climate protection and energy agency in cooperation with neighbouring cities, which led to the creation of the KliBA agency (*Klimaschutz- und Energie-Beratungsagentur Heidelberg-Nachbargemeinden*) in 1997 with financial support from the European Union.

During the same period, the municipal authorities decided to involve schools in their sustainable energy policy. In 1995, the city and the IFEU institute organised an energy saving campaign in Heidelberg’s schools, inviting schoolchildren and teachers to work on energy-related issues. The city asked primary and secondary schools to participate in a project aimed at integrating courses on the rational use of energy into the curriculum. The increased awareness shown by the children and their real desire to take action led IFEU to set up “E-Teams⁶”, i.e. groups of ten to twenty children, teachers and other staff members anxious to reduce their school’s energy use. The campaign used schools to reach out to children and tell them how to reduce energy use in all aspects of their lives. In total, twenty schools had participated in the campaign by 2014.

Heidelberg again showed its willingness to act by providing the necessary financial resources. On the one hand, the environmental office hired additional staff and funds were made available for the rehabilitation of municipal buildings. On the other hand, the city decided in 1993 to develop a financing scheme for the energy renovation of existing buildings. The logic behind this choice was simple: in a dense city, new buildings are rare and improving the city’s energy efficiency therefore involves retrofitting existing ones. Over 110,000 euros per year were made available in the form of subsidies. In the first two years, these

⁶ <http://edoc.difu.de/edoc.php?id=RKUFP1ZG>

subsidies were under-used. It was only when local builders, architects and chambers of commerce helped disseminate the information that financing applications started to come through. The financing scheme proved useful to builders for several reasons: owners were able to benefit from financial support and it helped develop sustainable construction skills and expertise.

2.4. CONSOLIDATION AND INSTITUTIONALISATION OF THE TRANSITION PROCESS

In 2001, roundtable discussions rapidly developed and led to the creation of the “Heidelberg Energy and Climate Protection Circle” (*Heidelberg-Kreis Klimaschutz und Energie*), a committee in which all energy and climate protection stakeholders are represented: universities, businesses and social institutions cooperate under the aegis of the Director of the Municipal Energy and Environmental Department and the Office of Environmental Protection, Trade Supervision and Energy. The committee is responsible for discussing the climate protection strategy and for preparing guidelines for the renovation and construction of municipal buildings. Another aspect of its activities focused on the debate surrounding the introduction of a “Heidelberg standard” based on the city’s energy strategy model.

The “Energy and Climate Protection Circle” is made up several groups:

- Optimising ventilation equipment at the university and teaching hospital,
- Improving building energy efficiency,
- Geothermal energy,
- Saving energy by changing behaviour in university buildings,
- Saving energy in churches,
- Improving energy efficiency and rebuilding municipal property,
- Sports and environment project,
- Energy advisers.

The working groups meet twice or four times a year to implement their projects. The committee also encourages players outside the municipal administration to identify energy saving potentials in their respective spheres of influence and to take measures involving building planning, organisation or behavioural changes.

The participation of SMEs was a major step. The “Sustainable management in Heidelberg’s SMEs” (*Nachhaltiges Wirtschaften*) started in 2001 with the financial support of the German Federal Environmental Foundation (DBU), on the basis of the recommendations made by the roundtable forum of sustainable businesses initiated in 1998. The city wanted to help small and medium-sized companies (10 to 200 employees) implement an environmental management system. The municipality first contacted hairdressers and bakers, who are heavy energy users. Many showed reluctance as they were surprised – and even worried- at being asked to act in favour of the environment. A climate of mutual trust first had to be built between the SMEs and the municipality, with as the watchword, “suggest rather than forbid” (*Angebote statt Verbote*). Professionals soon realised that they could save on their energy bills by reducing their energy use.

Communicating with the general public was part of the municipality’s new tasks and several campaigns were organised in Heidelberg. The most emblematic one is no doubt the “Climate seeks protection” (*Klima sucht Schutz*) campaign launched in 2007. The campaign consisted of a series of posters featuring citizens and municipal staff and aimed at raising awareness of climate change and what can be done about it. One of the objectives was to use pictures of the city’s charismatic figures, well-known for their professional activities, to arouse interest amongst the population. In 2010, the European campaign ENGAGE⁷, which aims at helping local authorities highlight their citizens’ commitment to climate protection, was also launched.

⁷ <http://www.citiesengage.eu/>

Heidelberg also took part in regional, national and international projects⁸. The city became a member of the local authority networks ICLEI in 1992, Climate Alliance in 1994 and Energy Cities in 1996, whose President since 2007 has been the Mayor of Heidelberg, Eckart Würzner. In 2008, Heidelberg was among the first local authorities to join the Covenant of Mayors⁹.

The city took part in a number of competitions¹⁰, a way to put new perspectives on local issues and to measure progress against other cities. The city's engagement in different networks contributed to enriching thinking, encouraging those involved and ensuring financing for projects carried out jointly with other cities.

The decisions made by the city show the efforts deployed to integrate energy in a cross-sectoral way into municipal policies. In 2001, the city council decided to spend 330,000 euros a year on buying green electricity to achieve the 25% target of renewable energy in municipal buildings. The same municipal order created a renewable energy fund, financed through a 4.6 cent/kWh additional charge (in 2006) to be paid for the municipal company's green electricity supply. The city of Heidelberg owns one third of the company, which helped implement the green supply offer.

The 1992 energy concept was updated in 2004, and again in 2010 following a decision by the city council. This essential component of urban planning created the "low energy" standards in municipal buildings in 1992. Its revision set up stricter building insulation standards and created standards for cooling requirements in summer. The standards defined are well above national requirements.

One of Heidelberg's flagship projects was the construction of the world's largest passive district. The Bahnstadt district (see image above) is being built on the site of a former freight depot disused since 1997. This new urban area will help the city meet urgent housing needs. The district benefits from a central location. With its 116 hectares, it will be larger than the city centre and is planned to host 5,000 residents and 7,000 employees. The first stone was laid in 2009 and work is expected to last until 2022. The first residents moved in in June 2012.

⁸ http://www.heidelberg.de/hd,Lde/HD/Leben/_Kooperationsprojekte.html

⁹ www.eumayors.eu

¹⁰ <http://www.heidelberg.de/hd,Lde/HD/Leben/Umwelt+Auszeichnungen.html>



In the same year, Heidelberg answered a call for proposals for the “Climate protection masterplan” (« *Masterplan 100% Klimaschutz* ¹¹ »), financed by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). The project was presented jointly by the city, the municipal company, the university, the teaching hospital, the savings bank *Sparkasse*, *KliBa*¹² and *UKOM*¹³. The city was selected amongst 19 other municipalities in 2012 and therefore committed to reducing CO₂ emissions by 95% and halving energy use by 2050 compared to 1990.

This four-year project includes two phases: preparation of the masterplan (2012-2013) and implementation of the first measures (2014 -2016). IFEU was responsible for the first phase. It set up a conceptual framework for defining the masterplan through the “Heidelberg Energy and Climate Protection Circle”, public consultations and a youth municipal council. Polls show that most inhabitants agree that Heidelberg is a climate protection pioneer.

3. RESULTS AND IMPACTS OF HEIDELBERG’S ENERGY TRANSITION¹⁴

3.1. END ENERGY USE AND CO₂ EMISSIONS

The city’s energy use (except transport) increased by 11% between 1987 and 2011. The peak was reached in 2004 with an 18% increase compared to 1987. Since then, end energy use has decreased by 7%.

CO₂ emissions (except transport) increased by 7% between 1987 and 2002 and then dropped 10% by 2011. The reduction in CO₂ emissions seems to contradict the increase in end energy use. The substitution of energy sources helped reduce CO₂ emissions. The switch from fuel oil to natural gas and district heating has contributed to reducing CO₂ emissions, even in the absence of energy savings. The commissioning of the CHP unit at the teaching hospital in 2012 resulted in a more efficient use of fuel gas. In 2011, CO₂ emissions per inhabitant amounted to 6.5 tonnes (except transport), i.e. an 8% reduction compared to 1987 (7.1 tonnes per capita).

Households’ end energy use amounted to 987,600 MWh in 2011, i.e. 36% of total end energy use, closely followed by the public sector (34%). CO₂ emissions remained roughly stable between 1987 and 2006. It should be noted that the average housing unit surface area increased by 18% over the same period.

¹¹ http://www.heidelberg.de/hd_Lde/HD/Leben/Masterplan+Klimaschutz.html

¹² Heidelberg and neighbouring municipalities’ energy and climate protection agency

¹³ Rhine-Neckar environmental centre

¹⁴ Data from “*Endbericht - Konzept für den Masterplan 100 % Klimaschutz für die Stadt Heidelberg*”, April 2014

The all-time winner of the CO₂ emission reduction contest is the public building sector: minus 40% between 1987 and 2011, over 50% if the 1993 peak is included.

The diagram below shows Heidelberg's CO₂ emissions for 2011 per sector and energy source, except transport, adjusted for the climatic factor (© "Endbericht, Konzept für den Masterplan 100 % Klimaschutz für die Stadt Heidelberg", April 2014)

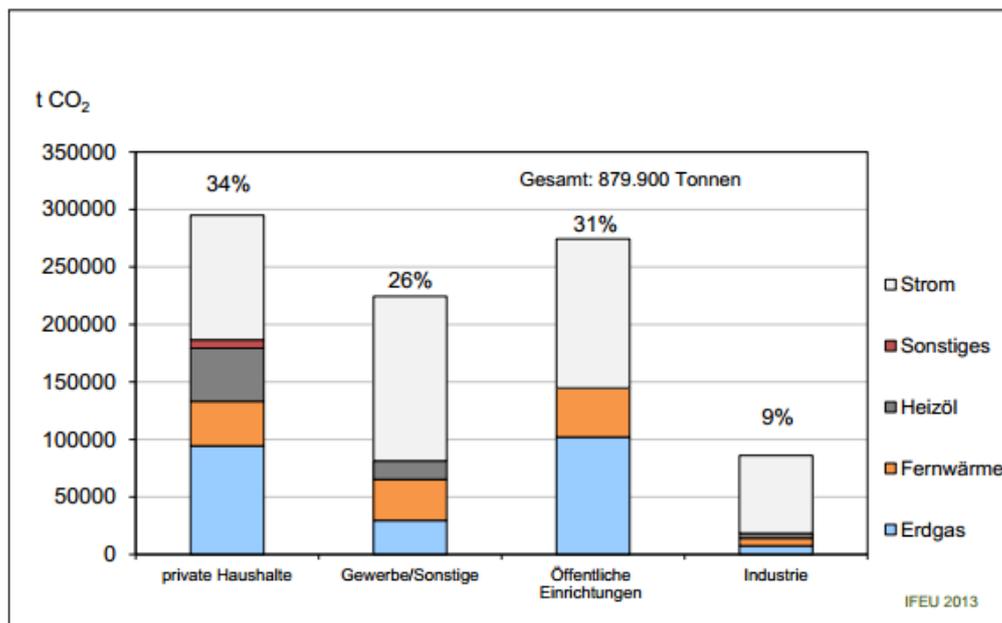


Abb. 12: CO₂-Emissionen in Heidelberg 2011 nach Sektoren und Energieträgern (ohne Verkehr, witterungskorrigierte Darstellung)

Total greenhouse gas emissions amounted to 1.2 million tonnes in 2010. Transport was responsible for 28%, households for 24%, the public sector for 21%, trade for 19% and industry for 8%.

In total, 40 GWh of electricity and 47 GWh of heat were generated from renewable sources in Heidelberg in 2011, covering ca. 6% of the city's total electricity use and 2.5% of its heating requirements.

Heat is produced from a variety of energy sources, biomass being the most important. In 2011, 10 GWh of heat were generated from biogas, 1 GWh from wood pellets, 1.5 GWh from solar energy, 32 GWh from biomass wood and 2.7 GWh from geothermal energy.

Since Heidelberg lies on a river, hydropower has become a major source of electricity with production of 15 GWh. The proportions of biogas (5 GWh), landfill gas (4 GWh), biomass (5 GWh) and photovoltaics (10 GWh) are below the national average. Wind energy is non-existent, although it accounts for 8% of energy production in Germany.

3.2. SOCIOECONOMIC STATE OF THE ART¹⁵

Economic statistics show a strong decrease in the unemployment rate. The negative effects of the world financial and economic crisis that were felt in Heidelberg seemed to have disappeared by 2010. The city derives great benefits from being a scientific city. Research institutes, the university and the teaching hospital are responsible for the strong increase in employment growth. A negative trend, however, is to

¹⁵http://www.heidelberg.de/site/Heidelberg_ROOT/get/documents/heidelberg/Objektdatenbank/12/PDF/12_pdf_HeidelbergerStatistik2012.pdf

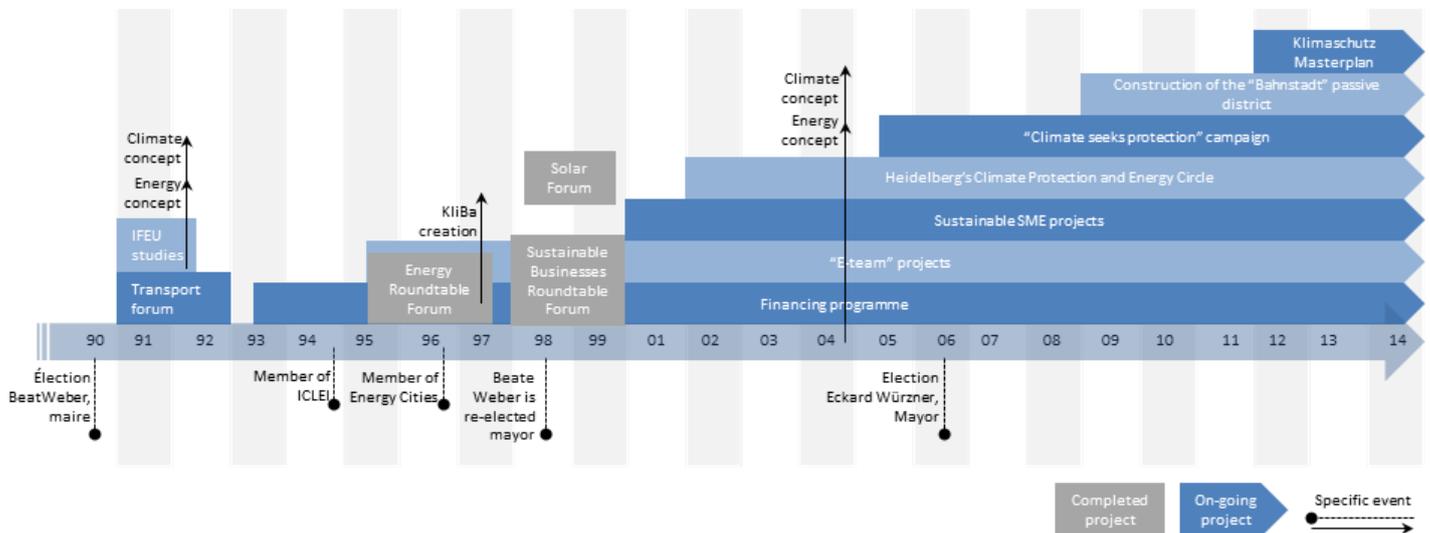
be observed in agriculture and manual trades. Total unemployment rate was 5.1% in 2012. Youth employment improved with a 3.1% unemployment rate, half the national average. The poverty risk rate¹⁶ is very low (7.7%). In Germany, the average rate is 14.6%. Demographic developments create new social challenges: an aging population, low birth rate, migration. For Heidelberg -unlike many other German cities- a net population increase is expected until 2020.

The city is committed to providing citizens with the best opportunities to be part of the city's life. Reinforcing the public participation process is one of the city's main concerns and goes well beyond the legal requirements. Inhabitants are involved in the urban planning process and are a genuine source of proposals for the public authorities and the city council. To ensure the smooth operation of citizen participation, guidelines have been established in consultation with the inhabitants¹⁷.

¹⁶ <http://www.iweps.be/lexique/taux-de-risque-de-pauvrete>

¹⁷ http://www.heidelberg.de/site/Heidelberg_ROOT/get/documents/heidelberg/Objektdatenbank/12/PDF/12_pdf_Buergerbeteiligung_Leitlinien_Komplettfassung.pdf

PART 2 – ANALYTICAL INPUTS



1. THE GOVERNANCE MODEL

Heidelberg's energy transition is a continuous process in constant flux. The diagram below shows the main events and projects carried out by the city as part of its sustainable governance strategy over time. Main governance model drivers:

- The personality and background of Beate Weber, who was elected Mayor in 1990, were a key driving force in the energy transition process;
- Internal changes to the municipal authorities and internal restructuring were the first steps towards a strategy focused on energy and sustainable development;
- The city council was anxious to set an example as regards energy issues;
- The "dialogue city" model made it possible to bring many key players together and involve them in the process. Their participation was institutionalised in a climate of trust between citizens, local players and the municipal authorities;
- The local academic centres (university, IFEU) helped design the strategy;
- The city benefited from various national and European projects as a pioneer city, thus ensuring the financing of various local projects.

The coordinating organisation responsible for supervising and implementing the energy and climate strategy is the Office of Environmental Protection, Trade Supervision and Energy under the aegis of an elected representative. The office covers a wide range of activities and is therefore able to coordinate the strategy in a cross- and inter-sectoral way. From a political point of view, the strategy is well-defined and presented in binding documents approved by the city council. Clear objectives have been defined and Heidelberg is committed to reducing its CO₂ emissions by 95% and halving its energy use by 2050 compared to 1990. Public participation is integrated in the strategy and actively encouraged. Key players from the energy sector, SMEs and citizens are engaged in the process, coordinated by the municipal authorities, with the support of elected representatives. The city also assesses and monitors its strategy on a regular basis.

2. ACTION DRIVERS

This part covers a wide range of action drivers from the Heidelberg model that opened the way to energy transition and proved to be a driving force.

2.1 GLOBAL AWARENESS

This factor triggered the debate on the role of Heidelberg in climate protection and the place of energy in urban society.

2.2 SEASONED POLITICAL LEADERS IN THE FIELD OF SUSTAINABLE DEVELOPMENT

Beate Weber (elected mayor in 1990) had experience in the field of energy and the environment and was utterly convinced of the importance of sustainable development. A former European MEP, she had good knowledge of European programmes and could obtain financing for the city's projects. The current mayor, Eckart Würzner, used to work for the city's environment and energy department and continues the strong vision of energy and environmental protection in the city's policy.

2.3 REORGANISATION OF THE MUNICIPAL AUTHORITIES

The creation of an office dedicated to energy and the environment with a broad scope of activity made it possible to address energy transition in a cross-sectoral way. The office acts as a steering committee: it prepares the strategy and defines the action plan, with clear objectives and a budget.

2.4 THE PARTICIPATION PROCESS

Involving local stakeholders appeared essential from the outset of the process. Roundtable discussions and participative projects opened the way and prepared the city's energy transition process. Public participation was initiated by the municipal authorities and resulted in very positive responses from citizens and local stakeholders. Today more than ever, Heidelberg is known for being a city of dialogue and cooperation: "Acting together for living together".

2.5 MONITORING AND EVALUATION

The municipality makes it a point of honour to constantly monitor the implementation of its strategy in terms of organisation, administration, financing, public participation, etc. This ensures that the continuous energy transition process is given an adequate framework and that strategic adjustments are made based on the results obtained.

PART 3 – RESOURCES

1. DOCUMENTARY RESOURCES

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