

# Blue Sky. Green City.

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Bottrop is a good place to live! This is particularly the case for the historic working – class estates of the former and still active coal mines. But Bottrop also has a lot to offer regarding green spaces and leisure time.

Bottrop

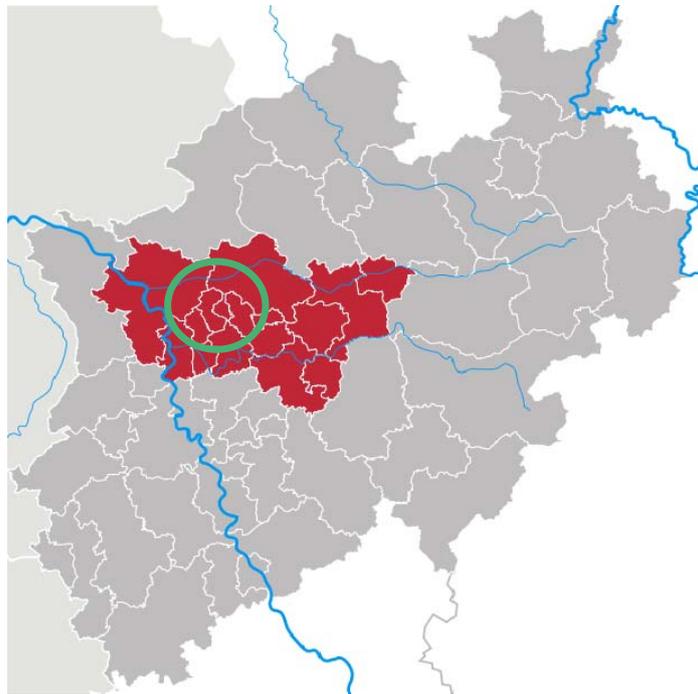
Geographical position of Bottrop in Europe and in Germany



Bottrop is a town in the heart of Europe,  
in the west of the Federal Republic of Germany,  
in the middle of the state North Rhine - Westphalia.

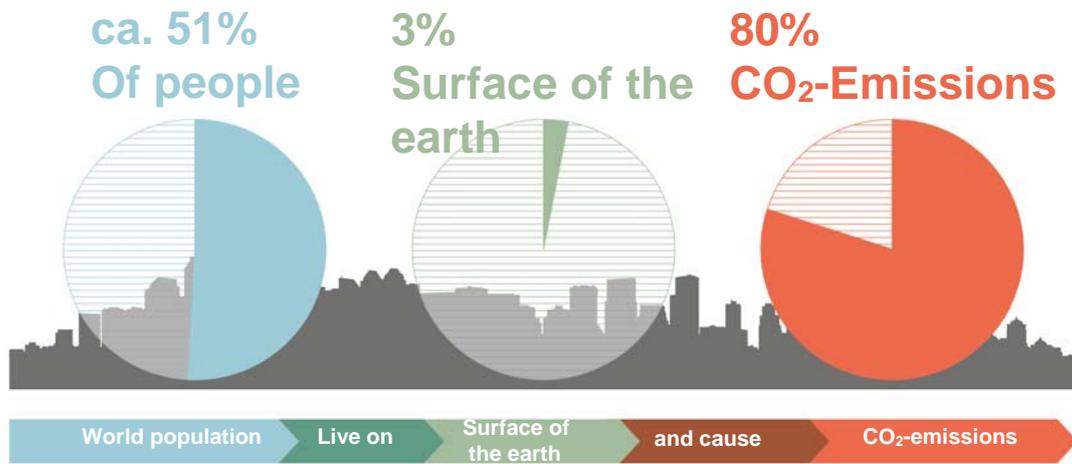
Bottrop

Position of Bottrop in North Rhine - Westphalia  
and in the Ruhr metropolis

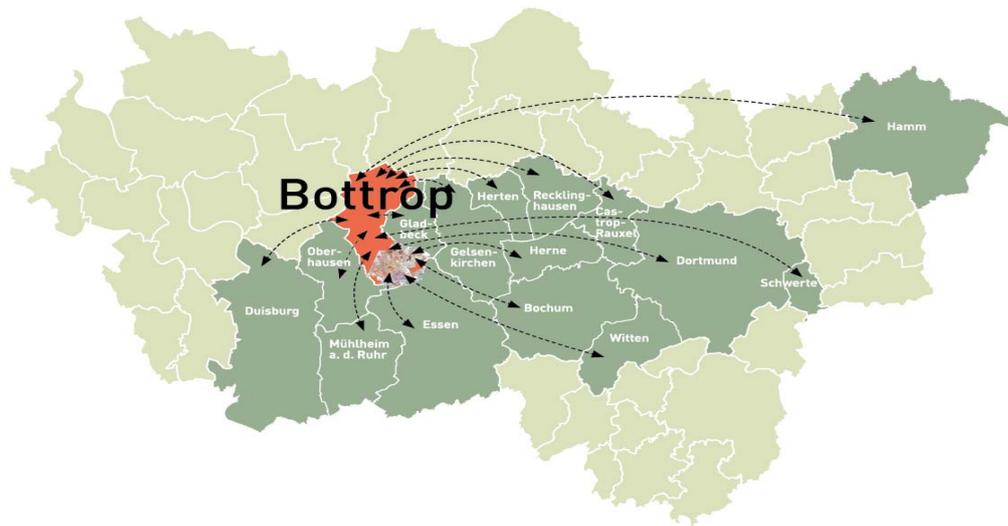


About 18 million people live in North Rhine – Westphalia. The Ruhr metropolis is situated in the center of the federal state. About five million people live and work here in 53 towns and cities. That means that the Ruhr metropolis is the largest conurbation in Germany and one of the largest in Europe.

Bottrop lies in the center of the Ruhr metropolis. 117,000 inhabitants live in an area of 100 square kilometers.



Here you see the basic idea and the description of the problem as far as the content is concerned. As we all know, ladies and gentlemen, more than half the mankind inhabits only 3 percent of the earth's surface but causes 80 percent of all CO<sup>2</sup> emission. That means that everybody who takes the topics of climate protection and energy efficiency seriously and intends to work on their protection, to solve the problem, has to take care of these 3 percent of the earth's surface. That are exactly our built up towns, not only the Ruhr metropolis, not only in Germany, not only in Europe, but worldwide.

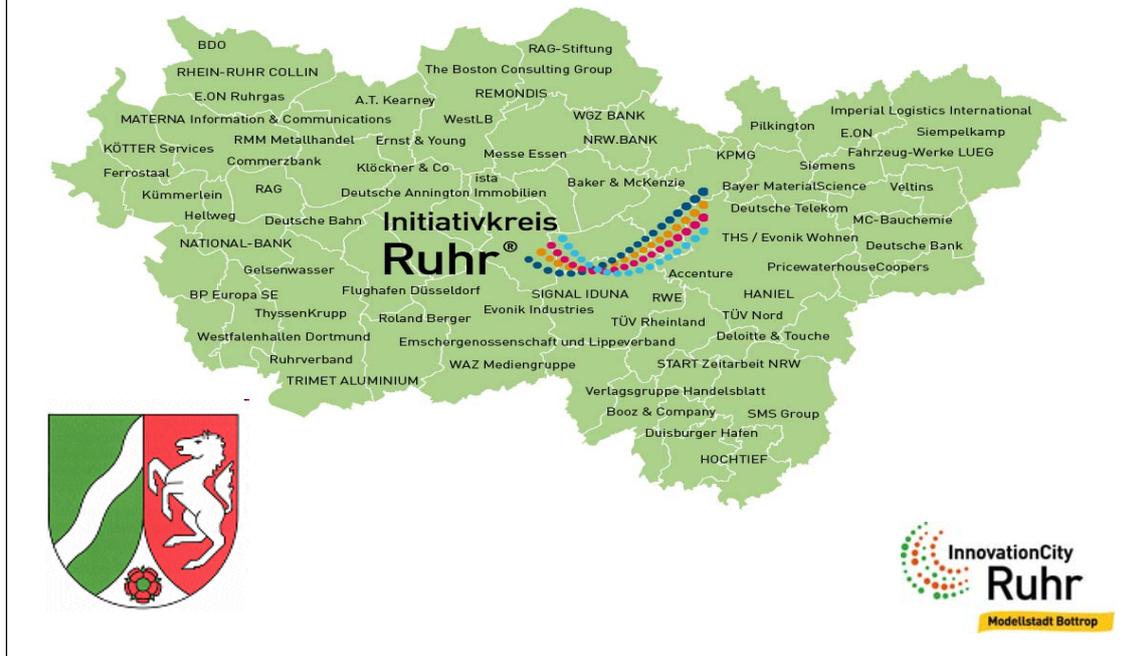


As model town “Innovation City Ruhr” Bottrop is developing into a blueprint for the Ruhr metropolis as well as for other towns and cities that are actively involved in the areas of energy efficiency and climate protection.

A vital point is the exchange among the towns and with industry and science. That is the only way to realize innovative techniques in as many towns as possible

## Basics

# InnovationCity Ruhr – a project of the Initiativkreis Ruhr and the federal state of North Rhine - Westphalia



The project Innovation City is a project of the Initiativkreis Ruhr. The Initiativkreis Ruhr is a union of more than 60 of the biggest companies in the Ruhr metropolis. All the distinguished companies are represented in this union.

The government of North Rhine – Westphalia plays a decisive role in this project. So we are talking about a project that is supported by trade and industry and politics.



That is the reason why Innovation City is a worldwide unique project because we take care of this energy efficient conversion of existing buildings and for the above mentioned reasons we are going a different way than the colleagues in Abu Dhabi. You all know Masdar City and Dongtan in China. There are also similar projects but those are about new building projects and not about alterations to existing towns.

Basics

0,6% energy efficient new residential buildings per year in relation to existing residential buildings

Annual volume of new residential buildings in relation to existing buildings

3400 Mio. qm<sup>2</sup>  
**Existing  
buildings**



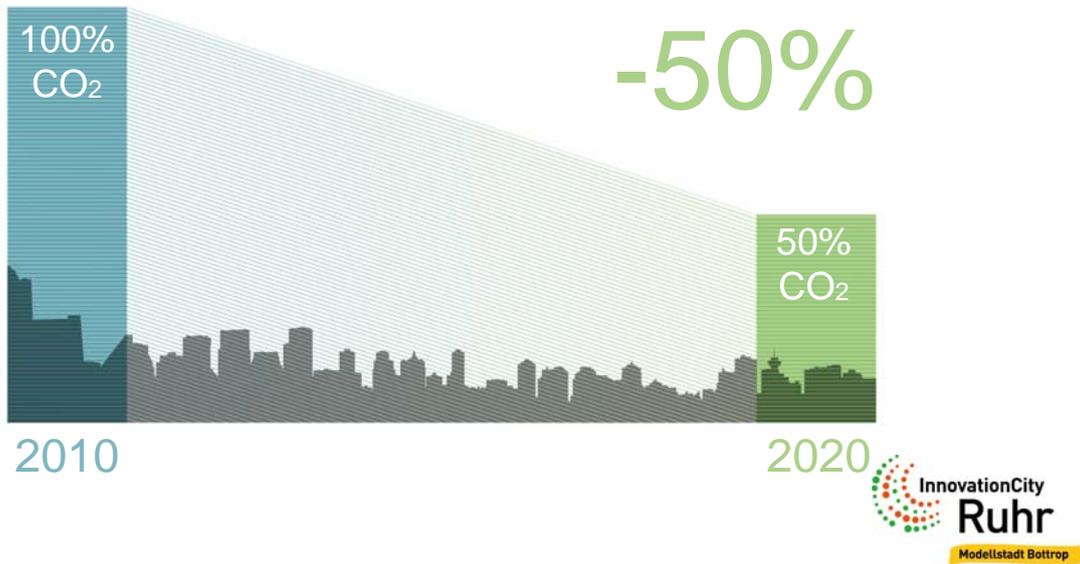
20,3 Mio. qm<sup>2</sup>  
**New  
Buildings**



I can show you this slide only for Germany. Here you can see the ratio of distribution between existing buildings and new buildings. You can see that 3.4 (three point four) billion square meters are already built-up areas, but only 20 million square meters are added to that per year.

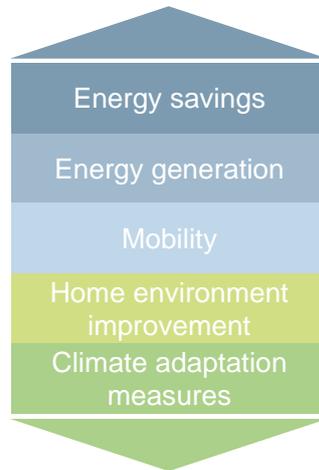
Targets

CO<sub>2</sub>-savings of 50% in 10 years



That is our goal. In 10 years time we want to save 50 percent of CO<sub>2</sub> emission.

Measurable: CO<sub>2</sub>-Reduction



Noticeable: Quality of Life



But we want to do more. We not only want to reduce CO<sub>2</sub>, save energy, but we also want to take care of new environment-friendly forms of generation of energy and of new environment-friendly forms of mobility. We take care of all topics concerning the renewal of towns and of measures to adjust to the climate. That means that it is our task to noticeably increase the quality of life in our built-up towns, and you will all agree with me here, ladies and gentlemen, that this is a subject of worldwide topicality.



Floods in Dortmund in 2008



As everywhere the consequences of climate change are perceptible in Germany, too.

This photo was taken in July 2008 in Dortmund, only 45 kilometers from Bottrop.

On the 26<sup>th</sup> of July there was a devastating thunderstorm during which 119 liters of rain fell per square meter within one hour.

Such incidents are occurring more and more frequently in Germany. Our rivers and canals cannot cope with masses of water like these.

An adequate alteration cannot be financed. Therefore we have to create new green spaces in built-up areas, so that the water can gather there and does not directly flow into rivers and canals.

New green spaces make life in towns during periods of intense heat much easier.

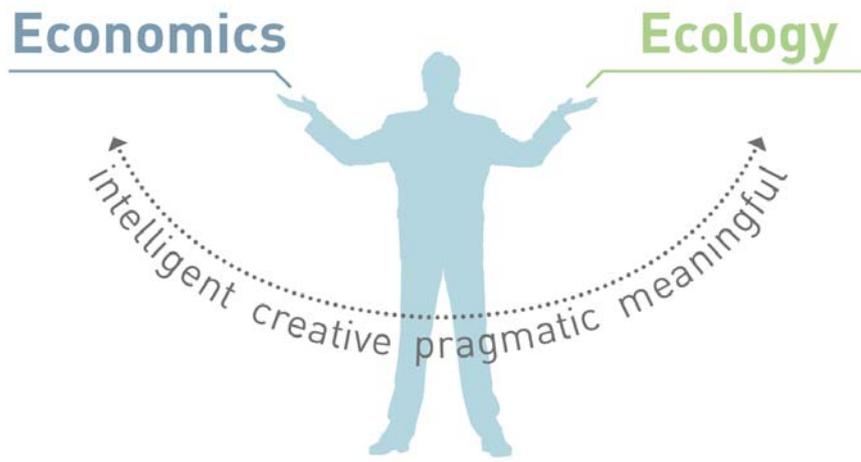
Targets

Balancing economies and ecology

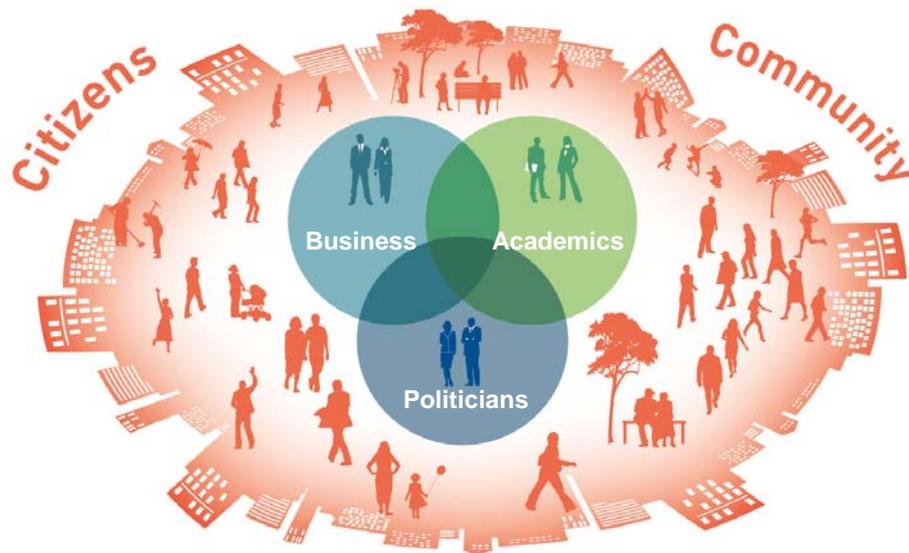
**Economics**

**Ecology**

Intelligent creative pragmatic meaningful

A central silhouette of a person with arms outstretched, balancing two concepts. Above the person's left hand is the word 'Economics' in blue, and above the right hand is 'Ecology' in green. A curved, dotted arrow with arrowheads at both ends spans from the 'Economics' side to the 'Ecology' side. Inside this arrow, the words 'Intelligent', 'creative', 'pragmatic', and 'meaningful' are written in a light grey font, following the curve of the arrow.

We want to realize all these ideas by creating a balance between economy and ecology.  
Since without or even against trade and industry ecological aims cannot be achieved.



Therefore we are linking all people involved. Here you see the intersection between industry, science and politics on the local level taking into account the citizens.

Bottrop

20.000 Signatures by citizens



The young woman with the child in her arms represents the new Bottrop, the Innovation City. You have to know that within a very short time we succeeded in collecting 20,000 signatures of citizens of Bottrop in support of the Innovation City project. That are 17 percent of the total population.

20,000 signatures in favor of a project, not against it.

Bottrop

More than 50 agreements with businesses and associations



Here you see an example of the good cooperation between Bottrop and the local and regional trade and industry. In the last months we collected more than 50 letters of intent from regional businesses that will be redeemed gradually. These letters of intent are mainly about concrete projects to save energy and to use renewable energies.

Bottrop

Poster campaign

**bottrop** DIESE INNOVATION ERHÖHT MEINE RENTE\*  
Innovation City Bottrop.  
Wir machens vor.

**bottrop** DIESE INNOVATIONEN BRINGEN GUTE JOBS\*  
Innovation City Bottrop.  
Wir machens vor.

\*Ein weiteres Innovationsbeispiel:  
Mehr als 75 % der Bottroper Fassaden  
sind noch nicht kostensparend und  
klimaschonend isoliert.  
Weitere Infos unter:  
[www.bottrop.de](http://www.bottrop.de)

**bottrop**  
InnovationCity

**InnovationCity Ruhr**  
Modellstadt Bottrop

EINE RIESENCHANCE FÜR BOTTROP! DER STÄDTEWETTBEWERB „InnovationCity Ruhr“

Here you can see some examples of our public relations work. The senior citizen, the pensioner, who increases his pension by decreasing his energy cost by using energy efficient measures in his building, or, what is very important, the younger generation of our town who is getting involved in topics concerning energy technologies. I made the young ambassadors to the Innovation City. A tremendous public effect in the town was the result.

Bottrop

Who is going to profit?

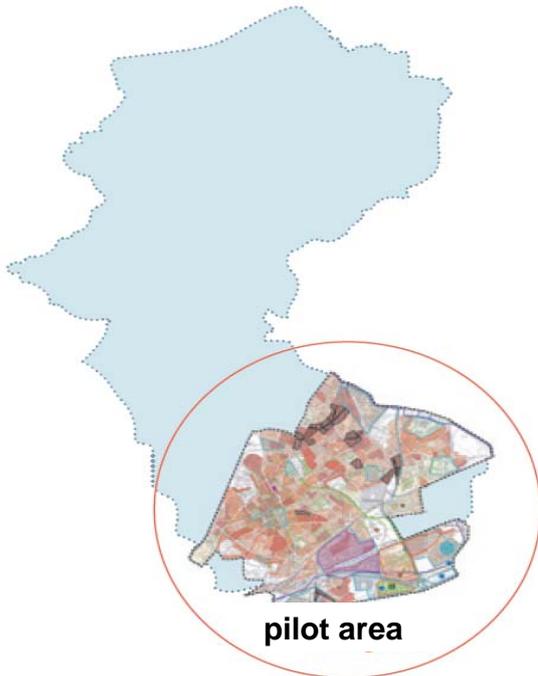
- The climate
- The people
- The town
- The craft, the trade and the local service industry
- Partners from the trade and industry and the science sector



Ladies and gentlemen, who is going to profit from Innovation City? The climate, the people, the town, trade and industry. Here another successful example how we linked the topic, for example during the football world cup.

Bottrop

The pilot region in Bottrop

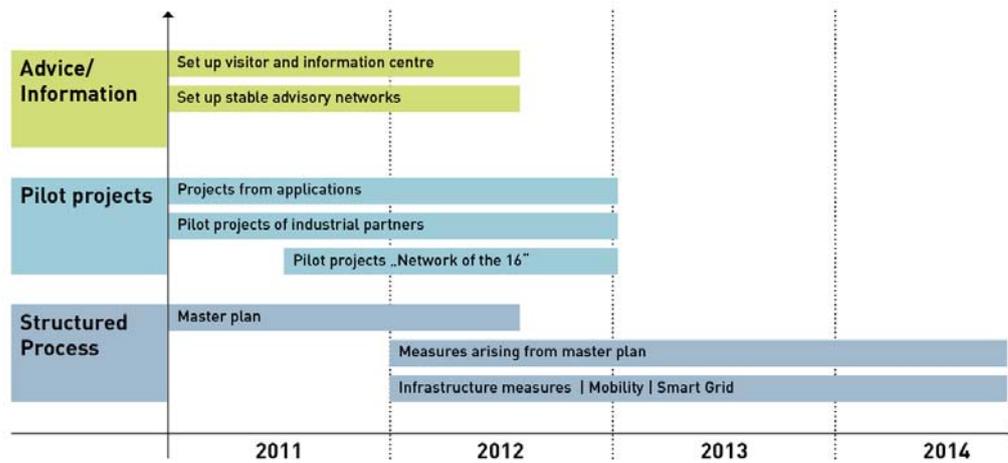


- 69.000 people
- 22.000 workplaces
- 8,2 % unemployment rate
- 2.464 ha area
- 14.474 buildings



Here you can see the pilot area of Innovation City. We are going to concentrate all measures here. Bottrop has got a little under 120,000 inhabitants. As you can see, 70,000 are living within the pilot area and there are 22,000 workplaces. We know very much about the structure of the pilot area. We know exactly how many buildings there are, whether they are industrial or residential buildings, how many single-family homes there are and how many multi-family houses.

## Realization | InnovationCity Bottrop – Three important first steps



That is our current position, ladies and gentlemen. We are doing three things simultaneously. We are building a center for information and consultation.

We are realizing the pilot projects from the application of Bottrop and the partners from trade and industry and we are working out a master plan to structure the decade well but also to plan the town building part.

## Realization | Center of information and consultation

### Consultation:

- Consultation guides as constant attendants during a planned project
- Involvement of various existing competences

### Qualification:

- Promotion of sustainable building
- Quality assurance and formation of networks

### Showroom:

- Permanent exhibition of innovative products of our partner businesses

### Information:

- Changing exhibitions on various topics
- Briefings, studio discussions



The consultation center is of immense strategic importance to us because it is our aim to provide a good advisory service for the owners of the buildings.

Therefore in this consultation center we tell them

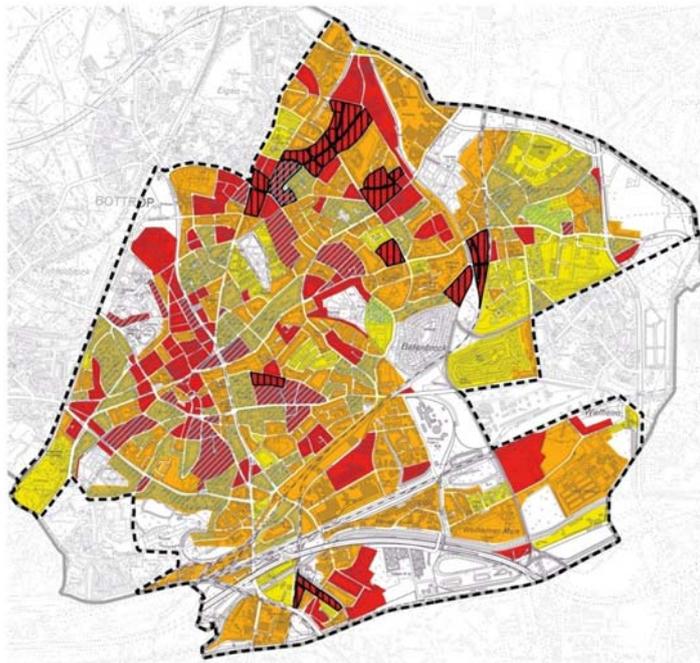
- How much energy the building consumes,
- What they can do to reduce energy consumption,
- How much they have to invest to achieve this target,
- When their investment will pay off,
- Where they can get funding and subsidies, and
- Which companies are able to carry out the work.

What is new about this, is that they can get the consultation from one person and at one place.

The reason why this is so important is that we can only achieve our target – saving 50 percent of energy emission within 10 years – if we are able to motivate private owners in the pilot area to invest in energy efficiency.

Realization

Systematic renovation of existing buildings



Levels of energy  
consumption

Here everybody who is interested in the technical side can see how well we are informed about the pilot area. We carried out complete recordings of all streets in the pilot area.

The red colors show you areas with very high-energy consumption. This enables us to direct investment very precisely and as efficiently as possible.

First  
projects

Renovation and redevelopment of the listed  
historic working-class estate „Rheinbaben“



- Target: transferable plans for an energetical redevelopment of existing buildings of a high cultural value



As you can see we also have historically and culturally very important buildings which require special observance and special treatment regarding energy efficiency. We will be confronted here with some challenges in the future. Each building has its own history and this calls for different solutions.

First  
projects

Zero Emission Campus  
University of Applied Sciences Ruhr West



For several years there has been a new University of Applied Sciences in Bottrop, the “Hochschule Ruhr West”, with a particularly innovative syllabus in the area of energy. The university will now get a new campus, which will be a “Zero Emission Campus”. That will be for the benefit of the climate and the students as they can carry out their research on a real building.

First  
projects

Hydrogen from sewage gas



Already today there is a very interesting project in Bottrop. We produce hydrogen from sewage gas. We transport this so-called “green” hydrogen via its own pipeline system to a school. There we generate heat and electricity for the school with a gas engine. In the future we intend to use fuel cells for that purpose and hope that we can provide other nearby buildings with “green” energy.

First  
projects

Industrial estate „Zero Emission Park“



In addition to that we also take care of our existing industrial estates, of our businesses. At the moment we are realizing a “Zero Emission Park”, an industrial estate in which we even want to save 60 percent of CO<sup>2</sup>. One way to put this into practice could be that one company uses excess warmth of another one for its production process.

At this point I would like to emphasize the really positive co-operation between trade and industry and the municipality.



- Linking with other means of transport: bicycle, pedelec, bus, train, carsharing



In the coming years we plan to bring 500 electric vehicles to Bottrop. That won't only be cars but electric bicycles and buses as well.

In addition to that it is important to us to link these vehicles as efficiently as possible. Car sharing will be part of it.

First  
projects

Fuel cell bus



Conditions in Bottrop are good for these special measures. Even today we have a small fuel-cell bus that is part of our scheduled bus services. In the near future a new generation of big hybrid buses will go round in our beautiful town of Bottrop.

First projects

Decentralized generation of energy

### Construction of vertical windturbines



### Trial micro cogeneration plant for heat and power



At the moment we are erecting vertical wind turbines, that means smaller designs that can be integrated into the townscape.

We work with so-called micro cogeneration plants (for heat and power). Here is an example based on gas, but we can absolutely envisage to use the technology of fuel cells on a wider scale. More and more we count on decentralized generation of electricity.

## First projects

## Expansion of cogeneration



- Saving of primary energy
- Increase of energy efficiency
- Expansion of the grids, at the moment for the use of fossil energies
- Possibility of future use as local heating grid for renewable energies

Modellstadt Bottrop

The supply with district heating contributes considerably to the saving of primary energy and thus to the increase of energy efficiency. This is especially effective where electrical heating systems can be replaced.

The basis of a sensible cogeneration of heat and power is the interconnection between the generation of heat and the consumers of heat. These district heating grids and local heating grids can transport heat from fossil sources as well as from **renewable sources**. The target of Innovation City is to maximize the share of renewable energies in the field of heating as well and to minimize the use of fossil sources of energy at the same time.

It is our vision to provide complete districts of the town with electricity and heat in this way. Extending the district heating and local heating grids today means **investing in an energy supply system with a future**. Today these grids are mainly fed by fossil sources. But they form the basis for the expansion of a decentralized supply from renewable energies.

First  
projects

## LaTherm: „Warmth on wheels“

- The use of waste heat of the coking plant „Prosper“
- Heating system of the primary school in the suburb in Bottrop-Ebel since October 2010



Here I am showing you another example, not at all spectacular, but it was met with a lot of interest in our town: We have a coking plant, which as you know produces a considerable amount of waste heat. Here we have a normal maritime container filled with a salt medium, which we can connect to the coking plant.

The salt medium saves the waste heat from the coking plant. After that we bring the container to an adjoining school and heat it with this waste heat. The result was that we could shut down the old oil heating system. With this measure we improved the environmental situation in this part of the town considerably. The waste heat of the coking plant is very sensibly used and in addition to that it is even more economical than running or replacing the oil heating system.

## Realization

## Scientific supervision

- Wuppertal Institute coordinates accompanying scientific research
- Commission by the ministry of science, North Rhine – Westphalia
- Quality assurance of all measures and projects
- Utilization of the experience of Bottrop for other towns and cities



On behalf of the ministry of science of North Rhine – Westphalia the climate institute of Wuppertal (Wuppertaler Klimainstitut) takes care of the accompanying research. This is about the quality assurance of the measures and projects and also to utilize the experience of Bottrop for other towns and cities.

Realization

Environmental education



A very important aspect is the topic of environmental education.

Because in this way we inspire the future decision-makers to get interested in climate protection and energy efficiency.

Here you can see for example how we go to our schools to teach children about energy technologies.

# 1. People

→ Advice and inform

# 2. Networks

→ Set up and coordinate

# 3. Solutions

→ Develop across systems



From my point of view the three central factors that lead to success are:

- To advise people,
- To form networks,
- To develop solutions across systems.

Realization

Recommendations

- We need strong and financially independent municipalities!
- Public funding is necessary so that new technologies can succeed on the market!
- The extensive involvement of trade and industry and the citizens constitute the decisive secret behind the success!



From my work as town planner and Lord Mayor I would like to give you the following recommendations:

- Climate protection has to be realized above all in towns. Therefore we need strong and financially capable municipalities.
- New technologies regarding energy efficiency and the use of renewable energies cannot succeed on the market without public funding. The instrument used in Germany to promote renewable energies is not a bad way.
- Climate protection is not possible without or even against trade and industry and the citizens. Therefore they all have to be extensively involved. That is a decisive secret behind the success.

All of this initially costs a lot of money. A better future for our children should be worth the effort!

# Come to Bottrop – You won't want to leave it again.



Ladies and gentlemen: Come to Bottrop, you will not want to leave it again!  
I conclude with the old miners' salutation from my home area

“Glück Auf”