



ISAP 2014
 Making Cities More Sustainable in Asia:
 Bridging Theory and Practice

**Research on Sustainable, Climate Neutral
 Urban Development – a German Case
 Study**

Presentation:

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**Why we do research on sustainable, climate
 neutral and smart cities**

Cities are the place where the biggest part of **resources** is spend and where **long-lasting infrastructures** conglomerate.

New **technological solutions**, **lifestyle** and **local identity** merge with new **business models**.

Cities become **real laboratories** for the research on the transition to a sustainable development. Different strategies join together and can be investigated: **climate** and **resource protection**, **adaption** to climate change, the reorganisation of **energy systems**, new models of **production** and **consumption**.

A tight cooperation with **local actors** is an inherent part of the research activities.

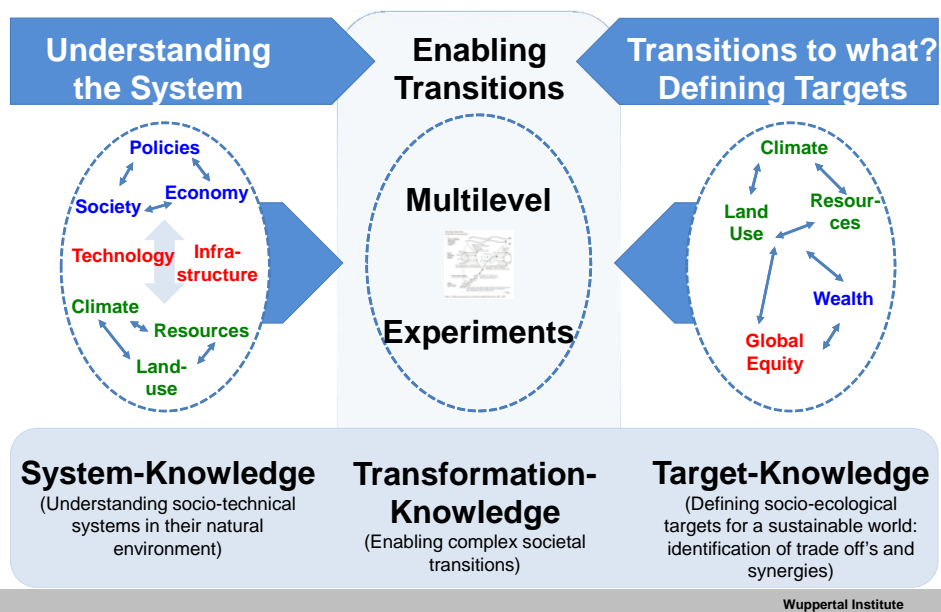
Selected studies on sustainable cities by the Wuppertal Institute



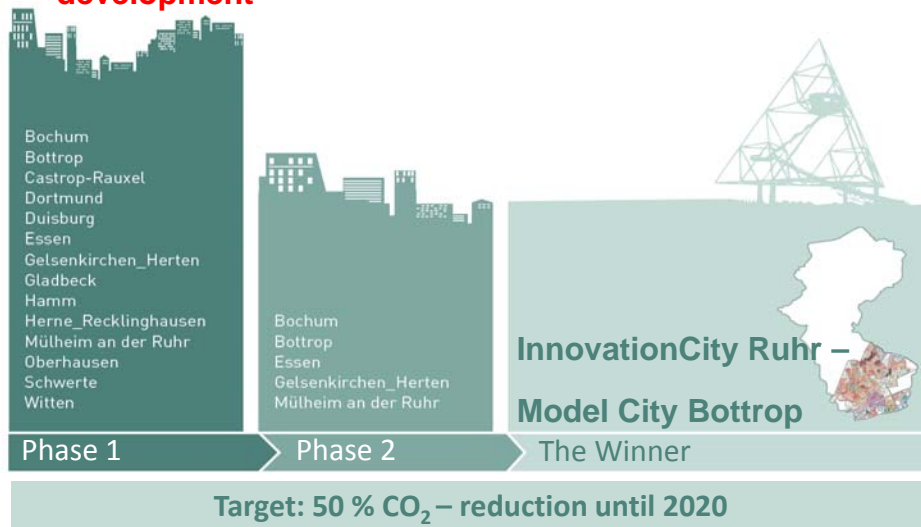
- Low Carbon Future Cities - A Sino-German Cooperation on an Integrated Climate and Resource Proof Urban Development
- Munich - Roads to a Fossil Carbon Free Future
- Sustainable Emscher - Towards Sustainable Infrastructures
- Accompanying Scientific Research InnovationCity Ruhr

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The research approach



The “Initiativkreis Ruhr” initiated a competition to identify a city which could function as a model city to elaborate strategies for climate neutral urban development

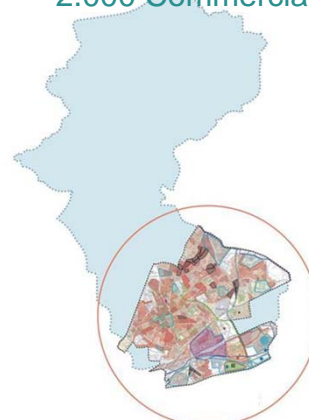


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The pilot district



- 70.000 Inhabitants
- 14.500 Buildings
 - 12.500 Residential
 - 2.000 Commercial



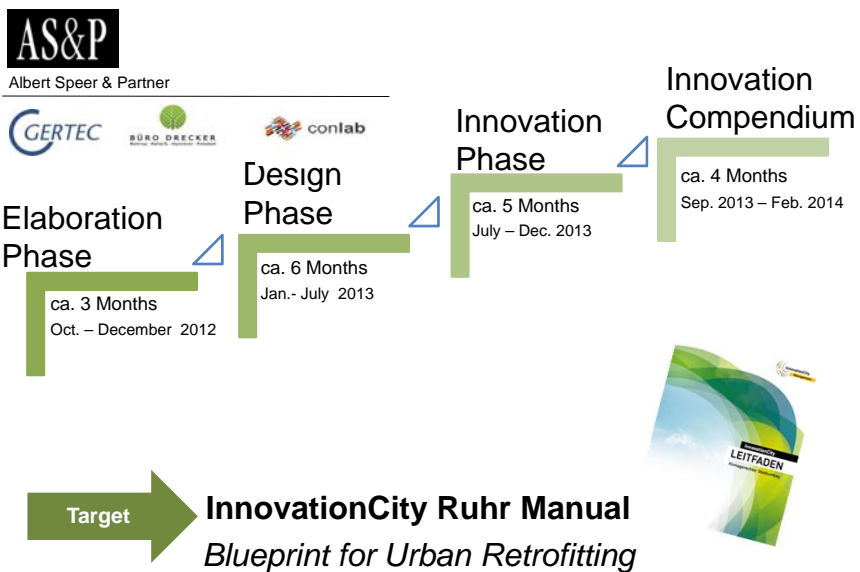
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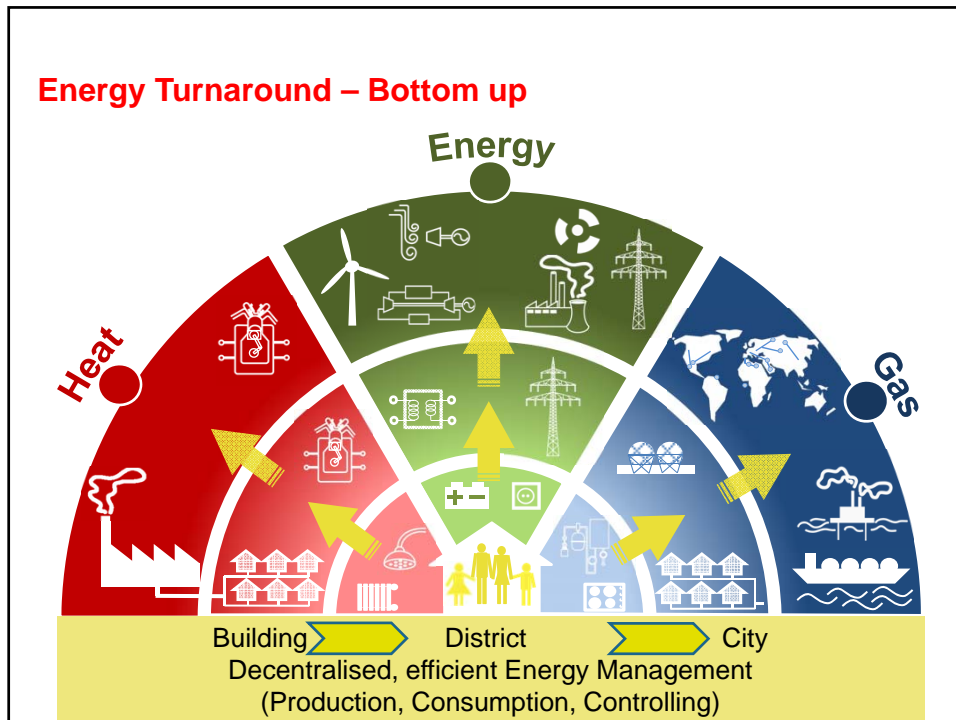
Institutional Background

Wirtschaft	Industrial Board 62 Members	Scientific Board 26 Members	Inter-Ministerial Working Group
Accenture agiplan ARCADIS A.T. Kearney Bautreff Pawella Bayer MaterialScience Betrem Bosch BP Brabus Brötje Buderus con energy Deutsche Annington Deutsche Rockwool ELE E.ON E.ON Ruhrgas Emschergerossenschaft/ Lippeverband EnergieAgentur.NRW Evonik Frank GmbH GBB Gelsenwasser Hellweg Hochtief	Kermi LaTherm NRW.BANK RAG RAG Montan Immobilien Remondis Rehau Rhein Ruhr Collin RWE Sparkasse Bottrop Steag Fernwärme Steag Power Minerals Stiebel Eltron ThyssenKrupp TRIMET TÜV Nord TÜV Rheinland Vaillant vE&K Viessmann Vivawest Volksbank Bottrop Weishaupt Wilo Zenit	Ruhr-Universität Universität Duisburg-Essen Technische Universität Dortmund Hochschule Bochum Hochschule Hamm- Lippstadt Kulturwissenschaftliches Institut Essen Institut für Kraftfahrzeuge Aachen Folkwang Universität der Künste Hochschule Ruhr West Gaswärmeinstitut Essen RWTH Aachen E.ON Energy Research Center	Ministerium für Bauen, Wohnen, Stadtentwicklung und Verkehr (MBWSV) Ministerium für Wirtschaft, Energie, Industrie, Mittelstand und Handwerk (MWEIMH) Ministerium für Klimaschutz, Umwelt, Landwirtschaft, Natur- und Verbraucherschutz (MKULNV)

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Masterplan Process



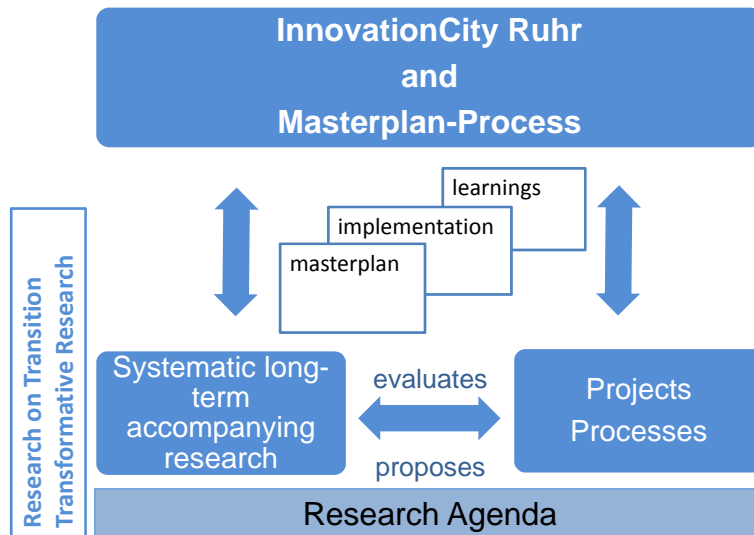


Extract List of Projects

Approx. 200 Projects

Living	Working	Energy	Mobility	City
<i>Retrofitting of Residential Areas</i>	<i>Retrofitting of Companies</i>	<i>Regenerative Energy</i>	<i>Electric Mobility</i>	<i>Urban Development</i>
<ul style="list-style-type: none"> ▪ PLUS-ENERGY-Model Houses: ▪ Detached House ▪ Apartment Building ▪ Commercial Building ▪ Social Housing ▪ Social Housing Plus Energy Building ▪ Manual Consultation Process Rheinbaben ▪ Living Lab ▪ District Management 	<ul style="list-style-type: none"> ▪ Hochschule Ruhr West ▪ Low Energy Gas-Station ▪ Welding with Solar Power ▪ Arche Noah Community Center ▪ Industrial Estates Knippenburg/Kruppwald 	<ul style="list-style-type: none"> ▪ CHP Pilot Project ▪ Dual Demand Side Management ▪ Pumped Storage Hydro Power Station ▪ Warmth on Wheels ▪ CHP Model Municipality ▪ Smart Grid ▪ Biggest Natural Gas Heat Pump 	<ul style="list-style-type: none"> ▪ E-Mobility in the context of energetic district retrofitting ▪ Electric Public Transport ▪ E-Vehicles ▪ E-Trucks ▪ Rental System ▪ City Compatible Truck Routing ▪ Car-Sharing ▪ Quick Charging Station at Main Station 	<ul style="list-style-type: none"> ▪ Masterplan InnovationCity Ruhr ▪ Integrated Urban Development Welheimer Mark ▪ Photovoltaics Noise Barrier at A 42 Highway ▪ LED-Street Lighting ▪ Rain Water Management at BEST Area ▪ Cultivation of Facade Surfaces ▪ Boardwalks and Bicycle Routes

InnovationCity Ruhr – Accompanying research



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Thank you for your attention!

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