



RUHR-UNIVERSITÄT BOCHUM

# Saving Energy in Industrial Parks

15<sup>th</sup> IAEE European Conference 2017

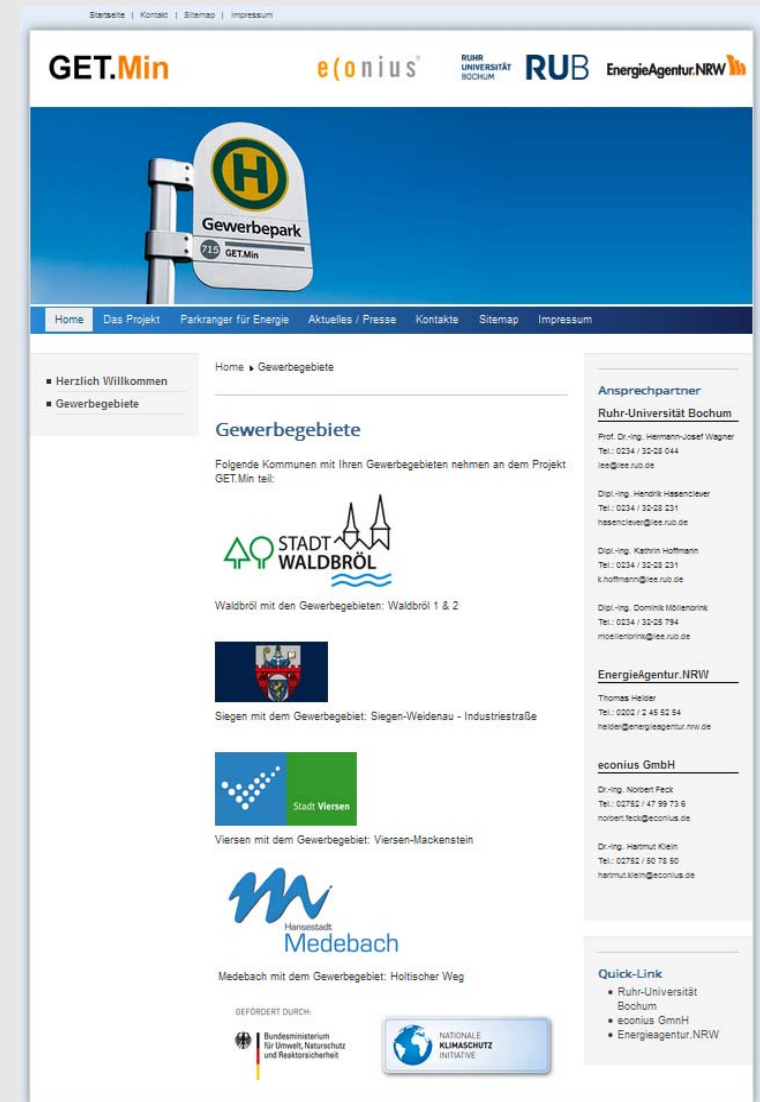
3<sup>rd</sup> - 6<sup>rd</sup> September 2017

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# Agenda

- Motivation and potentials
- Presentation of the project GET.Min
  - Project partners and funding
  - Objectives and main focus
  - Activities
  - Quick- and Detail-Check
  - Results



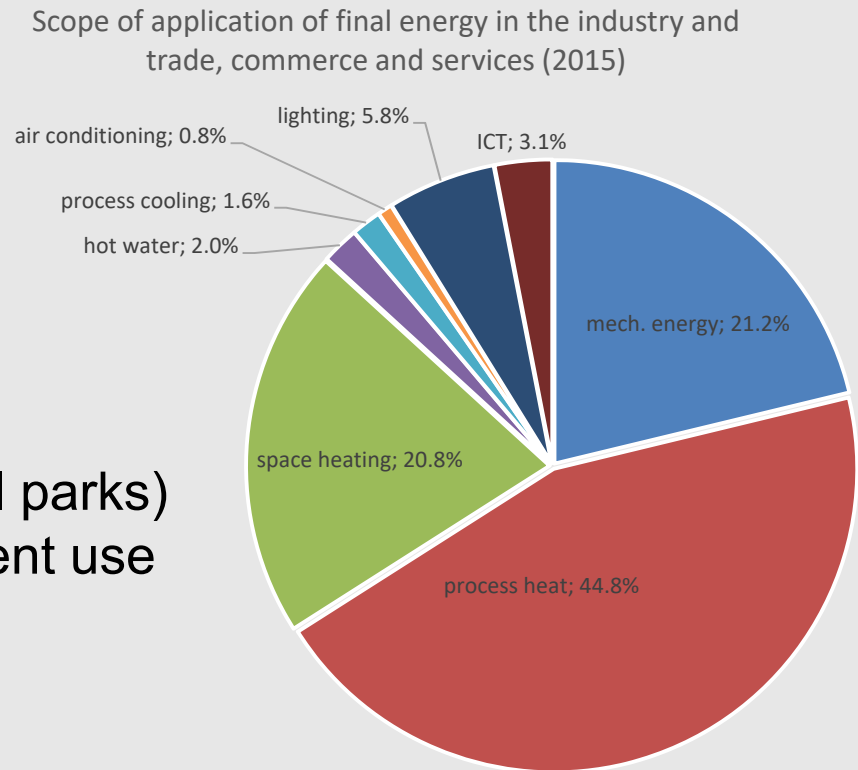
Source: <http://www.getmin.de/index.php/homepage/gewerbegebiete/>

# Motivation

- Resource scarcity, rising energy prices and CO<sub>2</sub> reduction targets lead to the fact that energy savings are becoming increasingly important
- High energy consumption in the sectors: industry, commerce, trade and services → great potential in these sectors to save energy and to increase energy efficiency
- Previous energy efficiency projects were limited to individual companies → the GET.Min project focuses on entire industrial parks
  - Synergies in industrial parks are to be uncovered and thus companies are encouraged to collaborate on joint projects

# Potentials

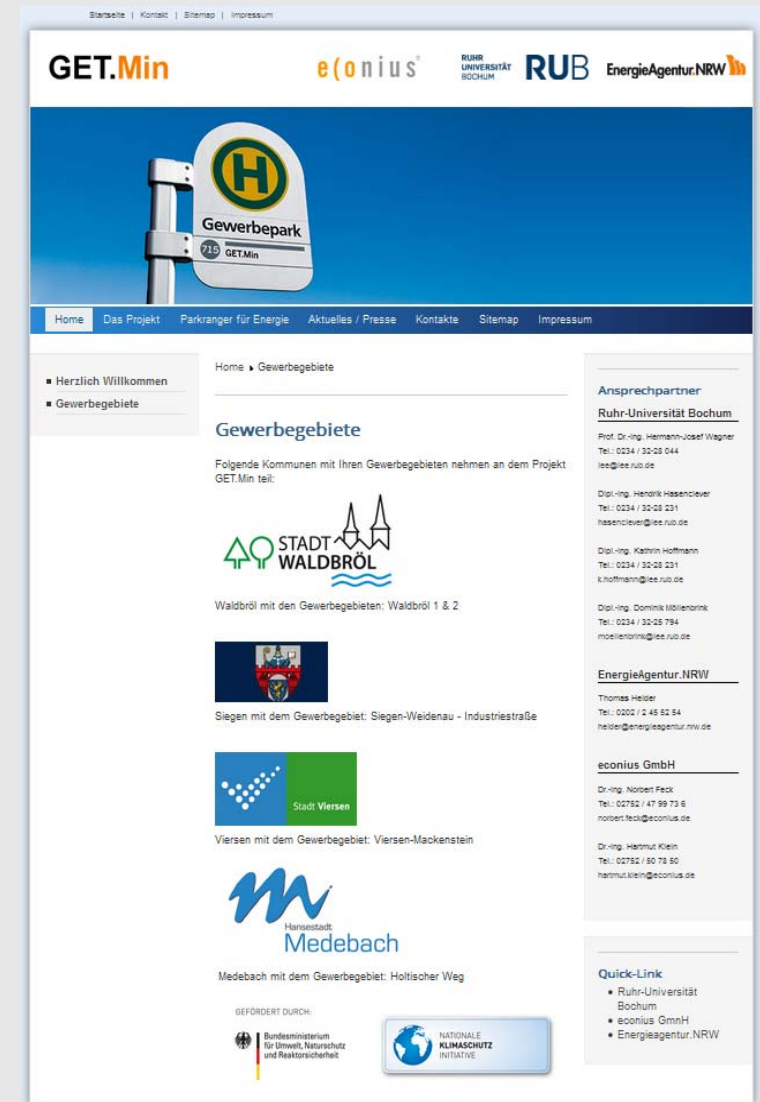
- Main potentials are identified in the areas:
  - Process heat (heat recovery, production optimisation in the field of metal production and basic chemicals)
  - Mechanical energy (electric drives, compressed air systems and pumping systems)
  - Lighting technology (switch to LED lighting)
  
- Company-wide measures (within industrial parks) offer a possible field of action for the efficient use of energy. This includes, for example:
  - Formation of efficiency networks
  - Cross-Company use of process heat and cooling
  - Joint use of combined heat and power (CHP) and photovoltaic plants



Source: AG Energiebilanzen

# Structure

- Motivation and potentials
- Presentation of the project GET.Min
  - Project partners and funding
  - Objectives and main focus
  - Activities Quick- and Detail-Check
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# Project partners and funding



- Project management
- Project research activities
- Development of the webtool



- Parkranger for Energy
- Trainings and workshops
- Data collection and measurements



- Identification of industrial parks who want to participate in the project
- Development of the information platform and the webtool



- Implementation of the information platform
- Programming the webtool

**GET.Min**

Gefördert durch:



Bundesministerium  
für Umwelt, Naturschutz,  
Bau und Reaktorsicherheit



NATIONALE  
KLIMASCHUTZ  
INITIATIVE

aufgrund eines Beschlusses  
des Deutschen Bundestages

Funding: 01 August 2012 to  
30 September 2015  
tool is available on:  
[www.getmin.de](http://www.getmin.de)

# Objectives of the project GET.Min

- Identification of cross-company energy efficiency potentials in industrial areas (process heat, mechanical energy and lighting technology) by using selected industrial parks
- Development of a webtool for which climate protection managers and business developers to increase climate protection measures in industrial parks
- Localisation of energy synergies between companies of an industrial park to transfer the results to similarly constructed parks
- Formation of efficiency networks

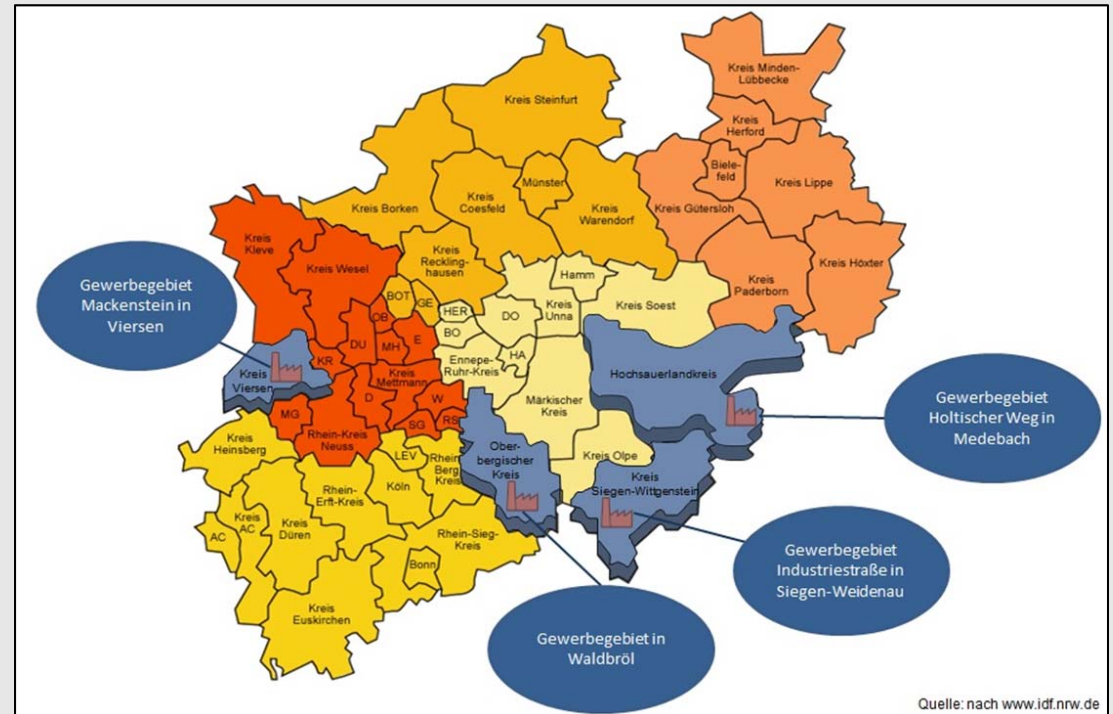
# Essential elements of the project

- Information platform
  - Project homepage with information about the project progress, events and workshops
- Parkranger for Energy
  - Carrying out measurements (waste heat, energy consumption) and workshops as well as supporting the entrepreneurs within the participating industrial parks
  - Contact person for the municipal representatives
- Webtool with Quick- and Detail-Check
  - Development of a web based programm to identify potential synergies between companies in an industrial park



# Selected business areas

- Beginning in 2013: Selection of 4 industrial parks in North Rhine-Westphalia (western part of Germany)
  - Waldbröl, Viersen, Siegen and Medebach
  - Contact to local business development departments
  - 49 participating companies
  - Data usage agreement for a common data release



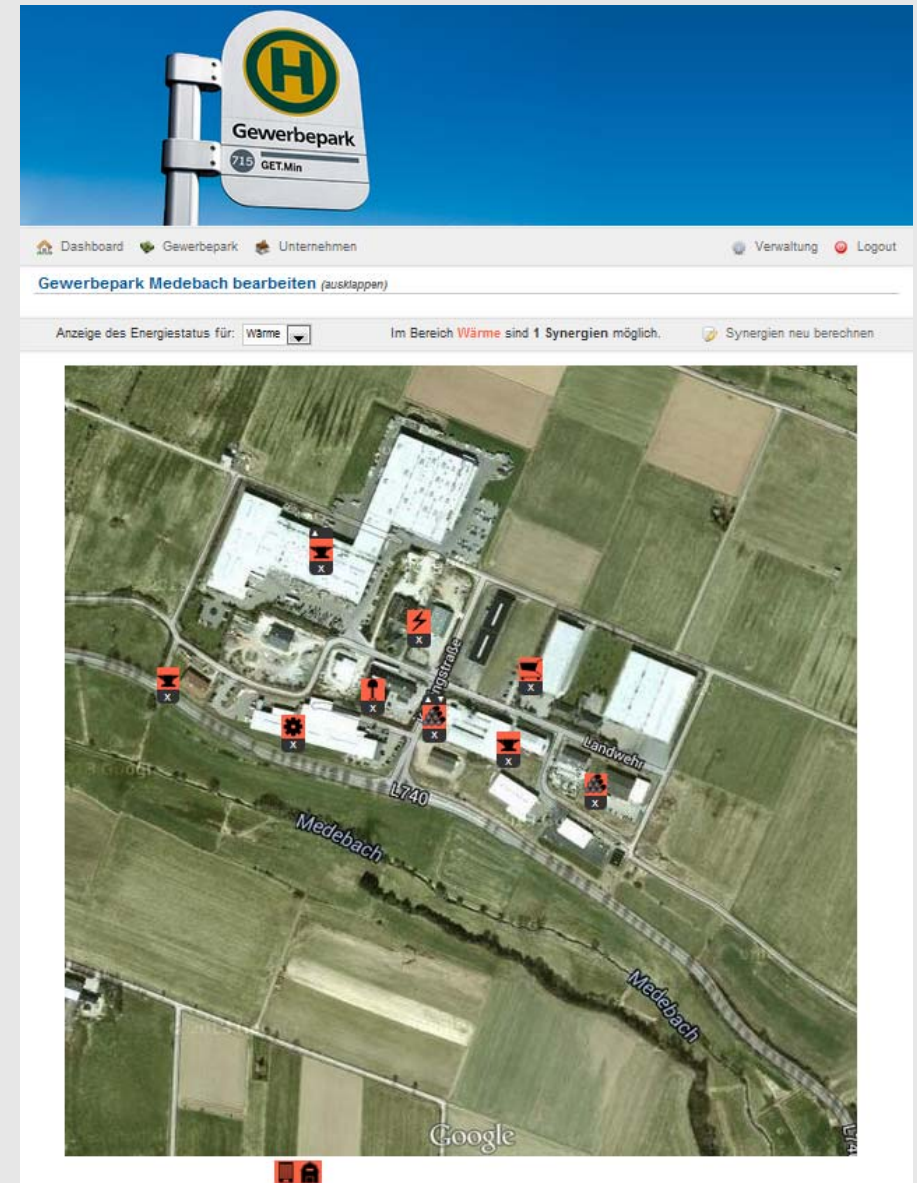
# Consultation: Parkranger for Energy

- Data collection and measurements for the GET.Min project
- Contact person for specific energy related questions
- Training on energy efficiency and energy management topics
- Promoting the exchange of information between companies
- Workshops about synergies between companies
- Instruction on energy efficiency and initiation of energy saving potentials



# Quick-Check

- Display of one or more industrial parks
- Representation of the industrial park by placing corresponding sector symbols on a map
- Assessment of potential energy synergies between companies in the same industrial park after entering few company-specific data
- Quick-Check was tested by local authorities (e.g. business developers of the participating industrial parks)



Example park in the Quick-Check, map: Google Inc., google maps

# Detail-Check

- Specified analysis of an industrial park, in which detailed inputs are required by the user (e.g. company's annual energy consumption)
- The aim is to demonstrate possible measures to increase the efficiency and synergies within an industrial park
- Determination of consumption load profiles of companies to be examined in the industrial park

Electrical load profile of a metalworking company



# Detail-Check

- Calculation of possible cover ratios of the company or industrial park consumption with CHP and PV plants
  - Use of photovoltaic on the available area (roof or open space)
  - Use of CHP plants for the joint generation of electricity and heat in the industrial parks
- Tool for a better network between companies within the industrial park (e.g. common waste disposal, joint procurement, etc.)



Source: BMWi



Source: BHKW-Infozentrum.

## Results from the GET.Min project

- Only few companies are willing to engage actively without assistance, which makes it difficult to create synergies between the companies. This is due to:
  - Lack of financial resources, time and know-how
  - Privacy concerns
  - Organisational aspects (e.g. company headquarters /decision makers are not on site)
- The webtool provides an uncomplicated first estimate of whether efficiency potentials can be used within industrial parks and promotes network formation activities within the parks
- econius GmbH is continuing the webtool after the official project time and is trying to convert the tool into an economically viable model
- Possible synergies often arise in a personal conversation, potentials have been found, but only have been partially implemented



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