

The Wuppertal Institute

Research for
sustainable development

At a
glance



Wuppertal
Institut

A collection of 25 icons arranged in a circular pattern. The icons are drawn in a simple, line-art style using red and teal colors. They represent various themes: renewable energy (solar panels, wind turbine, hydroelectric dam), social equity (hand holding a plant, graduation cap, people sitting), environmental protection (recycling symbol, water drop, globe with crosshairs), and general development (shopping cart, train, bicycle, city skyline, microscope). One icon features a thermometer with '1.5°C' next to it, symbolizing climate change goals.

Transformative Science

Research for the “Great Transformation”

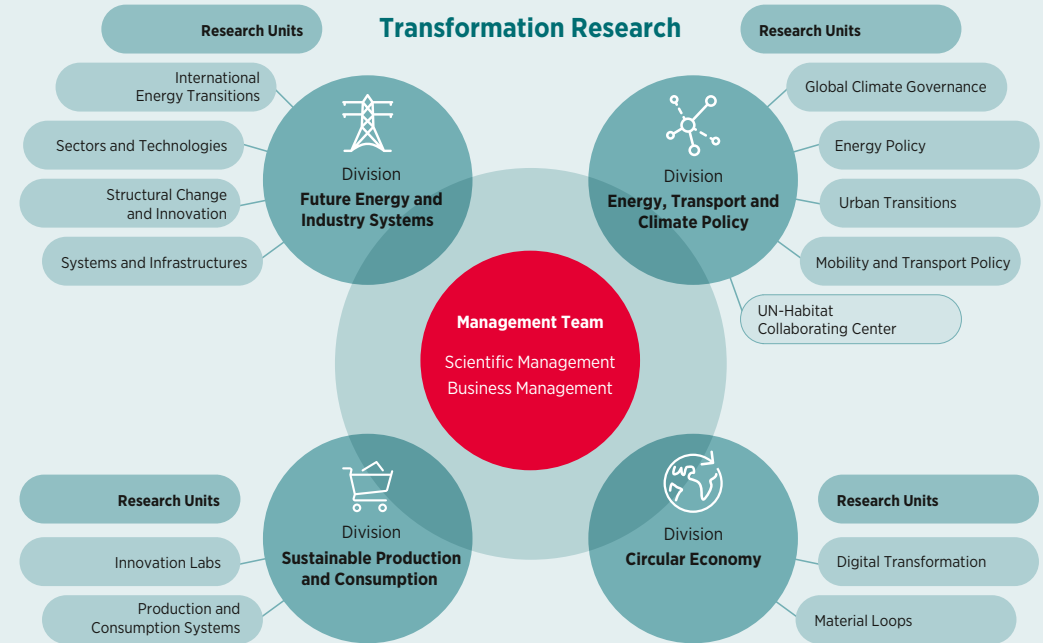
The research carried out by the Institute focuses on specific social problems with the aim of building a better understanding of change processes as well as generating target and system knowledge, thereby allowing the Institute to serve as a catalyst for transformation processes. The Wuppertal Institute refers to this three-pronged approach of target knowledge, system knowledge and transformation knowledge as “Zukunftswissen” (future knowledge). In many cases, viable concepts are developed in “real-world laboratories”. Research thus becomes part of the transformation process, in which solutions are developed, reviewed and, if necessary, adapted in collaboration with partners operating in practical settings.

Arenas of transformation

The Great Transformation towards sustainable development is taking place at many different levels. The research carried out by the Wuppertal Institute focuses on seven arenas of transformation, each of which has very specific constellations of stakeholders and underlying core research issues concerning the transition with regard to energy, resources, nutrition, urban areas, mobility and industrial activity, as well as prosperity and consumption. The theme that all of these areas of research have in common is the concept of managing structural change and digitalisation and, in particular, the question of the extent to which digitalisation can be put on a sustainable footing and support the implementation of transformation processes.

The Institute’s research is organised in line with these arenas and topic areas into 13 Research Units within four Divisions.

Research Structure



Core Research Issues



Shaping the energy transition

How can we make a success of the shift towards an energy system based entirely on renewable energy sources? This goal can be achieved using an intelligent interplay between increasing energy efficiency, expanding the generation of renewables and developing new processes in the field of industrial production. To that end, the Wuppertal Institute develops robust, implementable solutions for decision makers in the worlds of politics and business.



Climate-friendly primary industry

The energy-intensive industrial sector, above all the production of steel, basic chemicals, aluminium, glass, paper and cement, accounts for a large and steadily growing proportion of global greenhouse gas emissions. In addition to the introduction of new processes and, in some cases, disruptive technologies, the transition to greenhouse-gas-neutral production structures requires large amounts of green energy, alternative energy carriers and fuels, such as hydrogen. The restructuring of industrial systems and energy systems must therefore be jointly addressed and is an important social undertaking for business, policymakers and civil society. How this objective can be achieved, what changes will be required along the applicable value chains and how the specific innovation systems within the various sectors will need to be designed are key questions examined by the Wuppertal Institute.



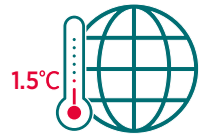
Keeping resources in circulation

Every year, Germany alone produces over 400 million tonnes of waste. Germany and the European Union have set themselves the goal of realising a comprehensive transformation towards a functioning circular economy. Waste must therefore be prevented as far as possible, products and components used for as long as possible and all waste that does arise treated as a potential resource. The associated challenges and issues are among the Wuppertal Institute's core areas of research.



Rethinking mobility

In addition to the risks of accidents, the impacts of transport on climate change, air pollution and land consumption are widespread. However, there are other ways to keep people mobile and transport goods. Key building blocks in the transition of the transport and mobility system are, above all, a reduction in private car usage, intelligent public transport options, attractive infrastructure for cyclists and pedestrians, economical/efficient modes of transport, as well as climate-friendly and non-polluting fuels. The Wuppertal Institute's researchers are therefore engaged in analysing how systems can be changed successfully without giving rise to new problems and what national and global policy frameworks will be needed to achieve this. Through its work, the Institute is helping municipalities and cities around the world to rethink mobility.



Limiting climate change

Ending the fossil era, keeping global warming below 1.5°C and launching a climate-friendly, fair and sustainable economic system are objectives that call for the involvement of many stakeholders at municipal, national and international level. With that in mind, the Wuppertal Institute analyses policy instruments and develops integrated strategies for business, politics and civil society.



Digital transformation

Digital technologies are opening up a wealth of new opportunities for sustainable development. On the other hand, their use is also a source of environmental concern due to the increasing consumption of energy and natural resources by electronic devices and infrastructure. That is why it is important for the digital transformation to be actively and intelligently managed so that it can contribute to a sustainable future without giving rise to new problems. Through its research, the Wuppertal Institute seeks to play a role in steering the ongoing digital transformation in the direction of a sustainable form of social, economic and political development. For that purpose, it evaluates digital technologies and product developments, infrastructure and solutions with regard to their functions and interactions from a holistic perspective.



Prosperity, consumption and lifestyles

Improved efficiency and the switch to renewable energies alone are not enough to establish a pathway towards sustainable development. These actions must be accompanied by new consumption patterns and sustainable lifestyles embedded in intelligent business models, which help to decouple the development of prosperity from resource consumption. The Wuppertal Institute is particularly interested in investigating ways in which products and services need to be designed so that they deliver a higher quality of life and can be produced sustainably, as well as socio-technical innovations as a promising route to sustainable change.



Changing cities and urbanity

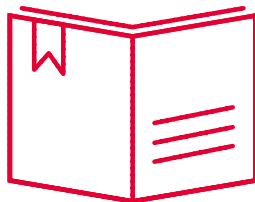
Eighty per cent of global anthropogenic greenhouse gases are emitted in towns and cities. Most of the planet's resources are used in urban areas, because they are home to around half of the world's population. These locations are focal points for the transformation as well as being the launch pad for social changes. For this reason, they require support by means of appropriate policy frameworks at European, national and municipal level. The Wuppertal Institute researches what is important in the transition to environmentally sustainable cities that are fit for the future.

The Wuppertal Institute in Figures*



50
current
dissertation
projects

200
scientific
publications



5.000
media reports



3.500
citations**

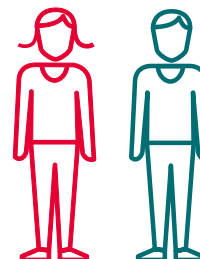
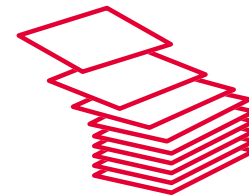
500
talks delivered to
audiences from the
worlds of politics,
business, science
and civil society



Revenue of
**€20
million**



**around
200**
projects in over
70 countries
worldwide



**over
300**
employees,
over 50 per
cent of whom
are women

40
lectures and
seminars



* All figures rounded or given as an annual average (2021)

** Institute's top ten researchers according to Google Scholar

**Wuppertal Institut
für Klima, Umwelt, Energie gGmbH**

Editor: Christin Hasken, Head of Communications and Public Relations

Döppersberg 19
42103 Wuppertal · Germany
Tel.: +49 202 2492-0 · Fax: -108
info@wupperinst.org

Berlin Office

Located in the Stiftung Mercator ProjektZentrum Berlin
Neue Promenade 6
10178 Berlin · Germany
Tel.: +49 30 28 87 458-10 · Fax: -40
buero.berlin@wupperinst.org

wupperinst.org

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