

Economic and Structural Programme 1.1

Essentials in brief

In order to provide you with a quick overview of the comprehensive economic and structural programme, we have compiled central statements of the publication for you in compact form. In the following, we will use the abbreviation WSP, which is common in German, and made up of the first letters of „**W**irtschafts- und **S**truktur**p**rogramm“, the German title of the Economic and Structural Programme.

What are the overall objectives of WSP 1.1?

The Rhineland Mining Area is to become the most successful economic transformation region in Europe. As a global role model for other regions, the Rhineland Mining Area is to demonstrate how economic transformation can succeed, which develops from coal-based power and heat generation and industry based on fossil fuels into to an energy system characterized by renewable energies and into a climate-neutral and sustainable industrial region. WSP 1.1 serves the purpose of achieving these goals.

What are the WSP's specific goals with regard to economic development in the Rhineland Mining Area?

The WSP contains the framework conditions for strength-oriented economic and structural promotion. It provides impetus for new products, services and business models in a region fit for the future. This preserves existing jobs and apprenticeships and creates new ones, opening up prospects for value creation. By 2030, collectively bargained, co-determined and high-quality jobs as well as training and further education opportunities are to ensure reliable future prospects for the people in the Rhineland Mining Area. This applies both to the roughly 15,000 employees directly and indirectly affected in the lignite industry, and to the roughly 50,000 well-paid jobs in the value chains of energy-intensive industry in the Rhineland Mining Area. The quantitative availability of high-quality apprenticeships must be maintained, and a start-up ecosystem broad in scope must be promoted in order to increase the number of high-quality start-ups.

What does "system of defined aims" of WSP 1.1 mean, and how is it implemented within the text?

In its system of defined aims, the Zukunftsagentur Rheinisches Revier has specified five lines of development for the region. They describe the various focal points of structural change and conduce to fulfil the overriding economic aims. These lines of development can be found within all four substantive fields of objectives: energy and industry (1), resources and agribusiness (2), innovation and education (3), spatial development and infrastructure (4).

These are the five lines of development: Rhineland Mining Area sees itself as a livable region (1) because the district is both a high-performance region (2) and an innovative region (3). It

also wants to become a climate-neutral region (4) and will further expand its profile as a networked region (5) in the process.

The system of defined aims is explained in detail in Annex III of the long version of WSP 1.1 (only available in German so far). In it, these five major lines of development are further differentiated in the form of subordinate objectives. In the long version of WSP 1.1, which is available in both forms, print and online, five corresponding pictograms are used to refer to passages that relate to one of the five lines of development.

What are the key strategic statements and fields of action in WSP 1.1 ...?

...for converting the energy supply to renewable energies?

The German national and European climate targets are to be achieved. That is why the Rhineland Mining Area is setting itself up as an energy region of the future which wants to serve as a standard for international emulation. The necessary transformation of the energy supply system is far-reaching and complex. Renewable energies, and in particular photovoltaics and wind energy, are the focus of conversion and expansion of power generation structures due to their great potentials. To this end, electrical and thermal storage capacities must be expanded, and climate-compatible, flexible, stabilizing and highly efficient power plant capacities must be built. Hydrogen is of particular importance as an energy carrier of the future: The aim is to establish the Rhineland Mining Area as a hub for climate-friendly, green hydrogen.

When restructuring the energy supply system, affordable energy prices for companies and households are important. At the same time, attention must be paid to environmental compatibility and security of supply. This is particularly significant for energy-intensive industry in the Rhineland Mining Area.

The expansion of renewable energies concerning heat is to include elements such as heat storage, near-surface geothermal energy and deep geothermal energy, waste heat potential from industry and commerce, and waste heat from the energy recovery of biomass and solar thermal energy.

...concerning the transformation of industry in view of the ending of lignite mining in the Rhineland Mining Area?

A modern industrial policy should lead to global technology and market leadership for the Rhineland Mining Area in innovative scope. This aim can be achieved if four strategic principles are taken into account:

1. Bottom-up principle: Structural support sets sagacious funding incentives, combined with high-quality standards, aiming to activating the many regional players, attracting new companies to the area, and thus integrating the decentralized knowledge of as many players

as possible. This will mobilize private capital on a large scale. Such a decentralized process contributes to identification with the region.

2. Innovation as a key, also in funding concepts: Germany is struggling to translate innovations into marketable products, applications and business models in a timely manner. For this reason, structural support must primarily promote fundamental product and process innovations and enable effective, accelerated technology transfer to economy.

3. Strength-oriented approach to economic promotion: Utilizing and further development of the region's existing economic structure is essential, resulting in maintaining complex innovative value-added networks or creating new ones are created. This also includes the integration of companies from the Rhineland Mining Area into supraregional value chains.

4. Smart specialisation as a competitive advantage: The goal-oriented further development of traditional areas must be geared to future societal demands and the resulting markets. The Rhineland Mining Area has the opportunity to become a region of competence for key industrial technologies, providing precisely tailored solutions to future problems. Specialisation in particularly innovative and promising areas has enormous value creation potential. This includes digitalisation (Industry 4.0, Artificial Intelligence), hydrogen, climate-friendly production processes and circular economy.

...for achieving that the handling of available resources is circular economy preferential and protective, as well as that agribusiness in the Rhineland Mining Area gains in importance and is further developed?

The medium- and long-term climate protection goals can only be achieved if resources are conserved consistently and in all fields of action. The Rhineland Mining Area is to become a pioneer for initiating the resource transition in Germany. The current Mining Area is a region with the best arable soils in the world. Agriculture and the food industry must be increasingly integrated into economy which is to be increasingly based on organic approaches. Sustainable forms of farming and production must be further developed. This will also create new jobs and new added value.

Central components of the strategy in this area are the concepts of bioeconomy and circular economy. The strategy stands on three pillars: resource efficiency (increasing the benefits compared to the inputs in natural resources), resource sufficiency (reducing the absolute consumption of primary raw materials by conserving resources in production and consumption), and resource consistency (sustainable replacement of non-renewable with renewable raw materials).

Four fields of action emerge for the Rhineland Mining Area:

1. Protection of climate, environment and resources: This includes the protection and promotion of biodiversity, soil protection and land development, and the protection and sustainable development of water resources.

2. A sustainable economy based on organic approaches: A fundamental concept of the bioeconomy is biorefinery. Industrial biotechnology is a key technology. The aim of the bioeconomy is to use biogenic raw materials sustainably and resource-efficiently and to create new value creation potential.

3. Sustainable agriculture, forestry and food management: This includes, for example, resource conservation in agriculture (e.g. through diverse crop rotations, biotope networks, organic farming or extensive livestock farming), digitalisation and other innovations (e.g. in robotics, sensor technology or also innovations in connection with biotechnological applications), incentives for sustainable consumption (e.g. through solidarity farming or urban farming) as well as the economical use of wood as a raw material for the regional economy based on organic approaches, health-promoting local recreation and nature conservation.

4. Resource efficiency and circular economy: Agriculture and forestry as well as the following industries including food, construction, chemical, plastics and textile, also aluminium, paper and packaging, are particularly important for this. In terms of content, the focus is, for example, on consistent recycling, e.g. in the area of construction, on component and building material exchanges, on new technical textiles, on the recycling of plastic waste from industry and other applications of the circular economy.

...for providing impulses for a culture of innovation as well as for the promotion of education and advanced training in the Rhineland Mining Area?

The Rhenish Mining Area is to become a high-performance innovation area that offers optimal conditions for developing application-oriented competences associated with value creation potential, and for exploiting these economically. This so-called "Innovation Valley" is a concept for structures and measures to dynamize regional transfer and innovation activities. The aim is to create an innovation ecosystem that acts as a magnet for current and future companies. It builds a bridge for exchange between science, education and training, business, municipalities, citizens. As such, it contributes to a transformation of value creation and employment that meets the formulated demands for climate and resource protection. By systematizing the transfer, "Innovation Valley" supports the actors in generating sustainable value creation and expanding technological and innovative advantages.

The further development of the Rhineland Mining Area as a location for the establishment and growth of young companies is taking place in various fields of action: In the first field of action, initiatives are being advanced in the areas of digitalisation (artificial intelligence, quantum technology, digital security and new business models), new work (learning factory, learning and organisational culture) and start-ups and growth (support services, financing). In the field of action Innovation Potentials, the focus is on promoting technical and social innovations. The Health and Life Sciences field of action focuses on promoting the healthcare industry and biotechnology. The Lifelong Learning field of action deals with networked training and continuing education in the Rhineland Mining Area, which must adapt flexibly to

new occupational profiles. Education for sustainable development and cultural education in the Rhineland Mining Area are also to be strengthened.

...for a holistically planned spatial development of the Rhineland Mining Area?

In the complex nexus of the topics of agriculture, settlement development, services of general interest, mobility, economy, tourism, sports and culture, identity, and nature and climate protection, an integrated approach and a regionally coordinated target perspective are fundamental to successfully managing structural change. The "Spatial Strategy for the Rhineland Mining Area 2038+" is intended to create an orientation framework for this. The guiding principles for this are the five development lines for the Rhineland Mining Area.

The objectives of the spatial strategy process are: Action- and problem-oriented spatial analysis of the region; evaluation and transfer of the region's preliminary work; contextualisation of completed, ongoing and planned spatial and structural change-relevant projects, processes and plans; agreement on common programmatic and spatial objectives and guiding principles within the region; development or accompaniment of in-depth conceptual target statements for particularly relevant subspaces or thematic fields of the region; creation of comprehensible and communicable images to convey the upcoming transformation tasks and the vision for the future.

Accompanying the spatial strategy process, the "RaumLabor" is an online platform for digital communication, management and overlaying of data, maps and concepts of the Rhineland Mining Area that are relevant to spatial and structural change.

Fields of action are settlement and economic land development (village and urban development, economic land, building culture, blue-green infrastructure, etc.) as well as land availability and quality assurance (acceleration of planning procedures, acceleration of processes, experimental innovations, etc.).

...for the further development of the infrastructure in the Rhineland Mining Area as well as for new requirements for mobility?

The Rhineland Mining Area needs future-oriented and efficient infrastructures as the backbone of successful structural change. Future investments in infrastructures and technologies should primarily serve three goals: economic development, structural and spatial development, and climate neutrality. The Rhineland Mining Area is to be developed into a region where Mobility 4.0 is practised in an exemplary manner. Hence the region will set an international benchmark for the networking of a polycentric region and the connection of rural settlement and value-added areas to the surrounding major centres. The Rhineland Mining Area has the unique opportunity to become a real sample for a mobility revolution based on its own research and value creation. This will give rise to transferable and exportable products that can also compete in international markets and create significant value-added and employment potential in the region.

Infrastructure development includes the following four key areas:

1. Transport infrastructure with the sectors road, rail, cycling/walking trails, water, air: An intelligent and demand-oriented transport infrastructure is characterized by digital networking and enables climate-neutral multimodality.
2. Digital infrastructure: The aim is to achieve nationwide fiber-optic coverage (gigabit) and nationwide coverage with the 5G mobile communications standard, as well as data centres, data hubs and digital parks. To increase its appeal for the digital economy, the region will position itself as an efficient broadband and 5G model location.
3. Supply infrastructure with networks for energy, raw materials, district and local heating: For the future supply and disposal infrastructure, the new recultivation areas, the future lakes, the power plant sites, coal railway lines, substations, power and communication networks, the water supply as well as the existing heat networks and pipelines will be (re)used and expanded according to demand.
4. A new hydrogen infrastructure to be designed and built for the development of the Rhineland Hydrogen Region: The focus is on the entire value chain of (green) hydrogen and its distribution network - from basic research to industrial pilot plants to hydrogen-powered commuter trains.

In the field of aviation, new forms of mobility are being realized, for example with the research topics of electric flight, vertical mobility, alternative propulsion systems and fuels (synfuels and hydrogen) and urban air mobility (UAM) in both manned and unmanned form, which are becoming massively more important.

...for the planned IBTA in the Rhineland Mining Area?

An International Building and Technology Exhibition (German abbreviation: IBTA) creates the milieu for outstanding, innovative and sustainable projects and processes in structural change. By doing this, it takes particular account of the claim formulated for the overall process to be a model region on an international scale. Conversely, international innovations will be available and adaptable to the transformative tasks in the region. IBTA not only relates to urban and regional development, but will explicitly include the areas of economic, technological and infrastructure development as systemic drivers of change, particularly in the areas of energy, mobility and climate, in project development. IBTA aims at a period until about 2038 in the intermediate step and, in the vision, well beyond that into the second half of this century. An important driver of the IBTA is the EXPO, which always triggers and promotes new developments. In this context, the EXPO becomes the lever of a growing innovative power of the IBTA in the form of an impulse-giving, agile communication and trade fair system. Widely visible communicative "exchange points" are the "basic EXPOs" that take place in a fixed rotation (approximately every five to six years), but are continuously supplemented with diversified, networked, intelligent exhibition and cultural formats.

What is the significance of WSP 1.1 with regard to the future regular funding of structural change projects in the Rhineland Mining Area?

It is the content-related basis for funding in the Rhineland Mining Area. The WSP 1.1 serves as the guidepost for short-, medium- and long-term programme planning, for the design of funding procedures and for the development of specific project selection criteria. In this context, applicable laws and planning procedures remain in force. This is also the basis for the design of regular funding by the state government under the title REVIER.GESTALTEN (loose translation: shape the region).