

Description of challenges in Cracow:

Life Sciences:

The scope of Life sciences covers two main subject areas: health and life quality as well as bio-economy. In practice Life sciences focuses on interdisciplinary issues related to medical, natural, biological and biochemistry sciences. The composition of Regional Smart Specialisations of the Małopolskie Province includes the following detailed areas:

- Active and healthy life;
- Medicinal products and devices;
- Modern diagnostics and therapy, Digital Health;
- New therapeutic technologies and supporting medical devices;
- Innovative Medical Centre (Innovative Hospital);
- Healthy food and nutrition;
- Modern, sustainable agriculture;
- Environment - environmental health factors;
- Bio-economy

Sustainable energy:

The main objective of Sustainable energy is to enhance the development trends of the industries it comprises and to improve the efficiency of energy use in a manner allowing meeting the current demand for energy without damage to the environment and the opportunities of future generations. The composition of Regional Smart Specialisation of the Małopolskie Province includes the following detailed areas:

- Smart grids for energy storage;
- Clean technologies for processing and conversion of fossil fuels;
- Energy efficiency;
- Energy from waste and chemical energy carriers;
- Renewable energy sources;
- Energy efficient smart buildings and cities

Information and communication technologies:

Information and Communication Technologies (ICT) in the present world are one of the most dynamically developing and at the same time widely popular sectors. The composition of Regional Smart Specialisation of the Małopolskie Province includes the following detailed areas:

- Medical engineering technologies, including medical biotechnologies;
- Diagnostics and therapy of modern age civilisation diseases and in personalised medicine;
- Innovative technologies, processes and products within the farming and food sector and forestry and wood sector;
- IT technologies supporting high quality food production;
- Highly efficient, low emission and integrated systems of production, storage, transfer and distribution of energy;
- Systems of building structure smart design and management;
- Environment friendly transport solutions;
- Advanced technologies of natural resources and raw material management and production of their substitutes;
- Multifunctional materials and composites with advanced properties, including nano-processes and nano-products;
- Sensors (including biosensors) and smart sensor networks;
- Smart networks, system integration and geoinformation technologies;
- Electronics based on conductive polymers;
- Automation and robotisation of technological processes;
- Smart creating technologies.³² As an ICT sector it must define all operations related to production and use of telecommunication and IT equipment and related services (i.e. data collecting, processing or making available).

Creative and leisure industries:

Creative and leisure industries smart specialisation covers the activity that takes advantage of individual creation in its broad sense, which is marked by economic potential. Thus, it looks for new business solutions within innovative areas of creative work (intellectual property). The composition of Regional Smart Specialisation of the Małopolska Province includes the following detailed areas:

- Creative industries;
- Graphic design and industrial design;
- Computer games and software (Interactive Leisure Software);

- Leisure industries.