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Motoryzacji

Current status of circular (BIO)economy from the view of manufacturing industry in Poland

Bioeconomy and circular economy, 16.03.2021

Global Trends

- Research development, stimulating innovation and competitiveness of the economy
- Development of smart economic specializations
- Climate changes
- Waste-free economy (circular)
- Protection of natural resources

BIOECONOMY is a response to new socio-economic trends in the world.

European Union Policies

„the main aim is to achieve a more innovative, resource-efficient and competitive society that reconciles food security with the sustainable use of renewable resources for industrial purposes, while ensuring environmental protection”

The review of the 2012 European Bioeconomy Strategy , SWD(2017) 374

Definition

The bioeconomy covers all sectors and systems that rely on biological resources (animals, plants, micro-organisms and derived biomass, including organic waste), their functions and principles. It includes and interlinks: land and marine ecosystem and the services they provide; all primary production sectors that use and produce biological resources, i.e. agriculture, forestry, fisheries and aquaculture; and all economic and industrial sectors that use biological resources and processes to produce food, feed, bio-based products, Energy and services. It cuts across these sectors and systems, interlinking them and creating synergies.

A sustainable Bioeconomy for Europe: Strengthening the connection between economy, society and the environment; SWD (2018) 431

Objectives of the European Bioeconomy Strategy

1. Ensuring food security.
2. Managing natural resources sustainably.
3. Reducing dependence on non-renewable resources, including replacing fossil fuels.
4. Mitigating and adapting to climate change.
5. Creating jobs and maintaining European competitiveness.

Areas of action in the updated European Bioeconomy Strategy

1. Strengthening and scaling up biotechnology sectors and unlocking investments and markets
2. Rapid implementation of local bioeconomies across Europe
3. Understanding the ecological boundaries of the bioeconomy

The following priority areas are particularly important:

- bio-innovation, including in the field of agriculture;
- new opportunities for the forestry sector;
- addressing issues such as food waste, waste and by-products (including recycling of nutrients), resilience, and the need to ensure nutritionally sensitive food production.

Polish conditions

In Poland, the bioeconomy is still at the development stage.

Poland does not have a separate bioeconomy strategy, references are provided in the following documents:

- „Strategia Rozwoju Kraju 2020”
- „Strategia zrównoważonego rozwoju wsi, rolnictwa i rybactwa” na lata 2012-2020
- „Strategia innowacyjności i efektywności gospodarki”
- „Bezpieczeństwo energetyczne i środowisko – perspektywa do 2020 r.”
- Strategia na rzecz Odpowiedzialnego Rozwoju do roku 2020 (z perspektywą do 2030 r.)
- „Krajowa Strategia Rozwoju Regionalnego”
- List of National Smart Specializations (pol. Krajowych Inteligentnych Specjalizacji)

Regional policy

Innovative Mazovia

The self-government of the Mazowieckie Voivodeship pursues a development policy aiming at ensuring sustainable development, maintaining social, economic and territorial cohesion, increasing the competitiveness of the region's economy and creating new jobs.

The main strategic document of the region is the "Development strategy of the Mazowieckie Voivodeship until 2030. Innovative Mazovia".

Development goals were set in six areas of activity:

- Industry and production
- Economy
- **Space and transport**
- Society
- **Environment and energy**
- **Culture and heritage**

Priority strategic goal:

Development of export-oriented production in the industry of advanced and intermediate technologies as well as in industry and agri-food processing.

Strategic objectives:

- Increase of the region's competitiveness through the development of economic activity and the transfer and use of new technologies
- Improving the accessibility and territorial cohesion of the region and shaping the spatial order
- Improving the quality of life and using human and social capital to create a modern economy

Framework strategic goals:

- Providing the economy with a diversified energy supply with sustainable management of environmental resources
- Using the potential of culture and cultural heritage as well as the values of the natural environment for the economic development of the region and improvement of the quality of life

Activities related to the bioeconomy concern the directions of:

- Creating conditions for generating and absorbing innovation
- Production development: creating favorable conditions for investors and entrepreneurs
- Supporting the creation and development of production enterprises
- Creating conditions for increasing non-agricultural investments - mainly in the agri-food industry
- Using and strengthening regional specializations
- Supporting the development of new technologies, in particular biotechnology and biomedicine, nanotechnology, photonics and optoelectronics, information and communication technologies (ICT) and space technologies
- Strengthening the development and absorption potential of rural areas

Innovative Mazovia

- Development of forms of transport that are friendly to the environment and inhabitants
- Development of science disciplines that are priority for the region
- Diversification of energy sources and its effective use
- Supporting the development of the ecological industry and eco-innovation
- Ensuring permanent and sustainable development and maintaining high values of the environment
- Modernization and expansion of local energy networks and improvement of transmission infrastructure
- Improvement of water quality, waste recovery/neutralization, restoration of contaminated areas and reduction of pollutant emissions
- Production of energy from RES

Mazowieckie Voivodeship

The Mazowieckie Voivodeship is the largest voivodeship of Poland, both in terms of area (35.6 thousand sqkm, i.e. 11.4% of the entire country area) and population (5 423 thousand inhabitants, i.e. 14.12% of the country's population).

According to the Classification of Territorial Units for Statistics, the Mazowieckie Voivodeship is a separate NUTS 1 level (Nomenclature of Territorial Units for Statistics).

It is divided into units:

- NUTS 2 Warsaw capital region:
- NUTS 2 Masovian region regional:

It is a region with the highest economic potential in the country and one of the fastest growing European regions.

Mazowieckie Voivodeship

Mazovia is the most dynamically developing region of Poland, with enormous economic potential. The economy of the Mazowieckie Voivodeship, however, is very diverse, it covers sectors ranging from agricultural production and food processing, through traditional industry, to modern production in intermediate and advanced technology industries.

Mazowieckie Voivodeship - bioeconomy challenges

- preventing food waste
- reducing the mass of mixed municipal waste in favor of the mass of waste collected selectively
- reducing the mass of waste sent for landfilling
- increasing the mass of recovered secondary raw materials from municipal waste and waste obtained in the recycling process
- construction of new biogas/biomethane plants

Mazowieckie Voivodeship - bioeconomy challenges

- construction and extension of a composting plant for green waste and other bio-waste
- introducing the principles of circular economy
- supporting the development of the ecological industry and eco-innovation
- further development of energy production from renewable sources
- ensuring permanent and sustainable development and maintaining high values of the environment
- development of an ecologically conscious society – building social acceptance

Strategy vision for Mazovia

Mazovia will become a region:

- with a significant share of the use of biomass in the development of the circular economy
- developing in accordance with the principles of sustainable development
- in which innovative bioeconomy technologies and related industries will be developed, enabling the increase of bioeconomy efficiency
- economically competitive, with an environmentally conscious society

Strategy goals for Mazovia

- Efficient management of resources in accordance with the principles of sustainable development
- Increasing the use of renewable biological resources in sectors creating high added value
- Contribution to the implementation of climate policy
- Strengthening the research potential of scientific units and development of cooperation in business-science-environment relations
- Shaping and promoting pro-health behavior of consumers

Factors of bioeconomy development

- increase in demand for high-quality products - increase in consumer awareness
- modernization of agriculture, storage, trade, industry and the service sector
- preserving biodiversity and developing the natural resource base
- tremendous opportunities to open up a new health food market
- the possibility of building a profiled food market based on nutrigenomics
- increase in social awareness of healthy eating and proper diet

Factors of bioeconomy development

- the possibility of building a specialty in the field of biodegradable polymers
- growing possibilities of using bioprocesses as alternatives to traditional chemical methods
- opportunities to valorize bio-based waste towards a valuable input material for the bioeconomy sector
- expanding the existing range of applications of wood materials and products, creating new composites
- construction of biorefineries closing and optimizing value chains in agricultural processing
- scientific potential of universities and institutes.

Threats to the development of the bioeconomy

- lack of bioeconomy development strategy
- low social awareness
- scattered legal regulations
- lack of political will to move away from conventional technologies
- non-socially acceptable cost increase following the large-scale introduction of the bioeconomy
- too slow technology transfer

Threats to the development of the bioeconomy

- suspended readiness to make necessary changes in the system: - legal, - fiscal, - financial, - administrative and organizational
- insufficient transdisciplinary approach to new solutions in fight against climate change
- difficulties in financing projects from selected industry scopes related to the unstable legal environment
- a large part of the component industries largely depend on short- or medium-term European policy.

EU/EC expectations for new (bioeconomy) technologies

- presentation of new, complete technologies covering the entire product life cycle and supply chains
- demonstrating new technologies in real conditions and being ready to quickly implement them on the market
- combining the existing solutions into a new, comprehensive technology that meets the needs of the market
- quick implementation of innovative solutions in the conditions of the market economy

Main problems in implementing innovative technologies

- insufficient price competitiveness of pro-environmental solutions (example: 2G bioethanol)
- resistance to financing the implementation of innovative solutions - "first of a kind" installations
- insufficient social awareness of the need for pro-environmental solutions
- quick implementation of innovative solutions in the conditions of the market economy

Support Programs – (BIO)Chance for industry/agriculture

Energy Plus (pol. Energia Plus) - active

- **Program objective:** Reducing the negative impact of enterprises on the environment, including improvement of air quality, by supporting investment projects
- **Forms of co-financing:** loan or subsidy
- **Beneficiaries:** Entrepreneurs

New Energy (pol. Nowa Energia) - active

- **Program objective:** increasing the level of innovation in the economy by supporting the implementation of projects in the field of modern energy technologies, aimed at the development of zero-emission energy, zero-emission industry

In the 1st call for proposals, the thematic objective in the area of **Production, transport, storage and use of hydrogen is implemented**

- **Forms of co-financing:** A loan on preferential or market terms
- **Beneficiaries:** Entrepreneurs

Agroenergy (pol. Agroenergia) – completed, next editions TBA soon

- **Program objective:** increasing the production of energy from renewable sources in the agricultural sector
- **Forms of co-financing:** subsidy
- **Types of co-financed projects:** Photovoltaic installations, wind farms and heat pumps to meet own energy needs
- **Beneficiaries:** A natural person who is the owner or tenant of agricultural real estate

My Power (pol. Mój Prąd) - 2 editions completed, My Power 3.0 TBA soon

- **Program objective:** increasing electricity production from photovoltaic micro-installations in the territory of the Republic of Poland
- **Forms of co-financing:** Subsidy up to 50% of eligible costs of micro-installations included in the project, not more than PLN 5000 (approx. 1200 Euro) for one project
- **Beneficiaries:** private persons generating electricity for their own needs

Clean Air (pol. Czyste Powietrze) - active

- **Program objective:** Improving air quality and reducing greenhouse gas emissions by replacing heat sources and improving the energy efficiency of single-family residential buildings
- **Rodzaje dofinansowanych przedsięwzięć:** Co-financing the replacement of old and ineffective heat sources with solid fuel with modern heat sources that meet the highest standards, and the necessary thermal modernization works of the building
- **Forms of co-financing:** A subsidy of up to PLN 30000 (approx. 7000 Euro) for the basic grant level and PLN 37000 (approx. 8500 Euro) for an increased grant level
- **Beneficiaries:** private persons

Termomodernization benefit - active

The benefit consists in deducting from the tax calculation basis the expenses incurred for the implementation of the thermomodernization project in a single-family residential building.

Tax benefit may be combined with a subsidy from the Clean Air Program (Program Czyste Powietrze)

- **Forms of co-financing:** deduction from income of expenses up to PLN 53000 (approx. 11700 Euro) incurred for the thermal modernization of single-family buildings
- **Beneficiaries:** a taxpayer who owns or co-owns a single-family residential building

Geothermy Plus (pol. Polska Geotermia Plus) - completed

- **Program objective:** increasing the use of geothermal resources in Poland
- **Forms of co-financing:** loan or subsidy
- **Beneficiaries:** Entrepreneurs

However, there is still a lot of things to do...

- **Problems:** decreasing residual emissions by eliminating bad quality fuels
- **Law barriers:** f.ex. Lack of standards for pellet fuels
- **Limitations:** Huge social scepticism about new biogas plants

Complicated law procedures with launching waste-treatment plants

**Thank you for your
attention!**

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