

Silesia, Poland

GENERAL INFORMATION

Country: Poland

Region Name: Silesia

Region NUTS2 code: PL22 - Silesia

Region NUTS3 code: PL22A - Katowicki /
PL228 Bytomski PL229 - Gliwicki / PL227 -
Rybnicki PL22B - Sosnowiecki / PL22C - Tyski

Main urban centres in the region¹:

**Katowice – 281,418 / Częstochowa –
209,395**

Sosnowiec – 190,406/ Gliwice – 171,896

**Bielsko-Biała – 167,509 / Zabrze –
156,082**

Bytom – 150,594/Rybnik – 132,266

Ruda Śląska – 132,040 / Tychy – 123,562

**NUTS: Nomenclature of Territorial Units for Statistics*



1. Polish Statistical Office. Population, Size and structure and vital statistics in Poland by territorial division in 2022. As of 30 June 2022: <https://stat.gov.pl/en/topics/population/population/population-size-and-structure-and-vital-statistics-in-poland-by-territorial-division-in-2022-as-of-30-june-2022,3,32.html#>

Regional socio-economic profile

General description of the socio-economic profile of the region

Silesia is located in south-western Poland, bordering with Slovakia and Czechia. With over 4.4 million inhabitants, the Silesian Voivodeship is the most populated and urbanised region in Poland; 76% of its population lives in cities, with its two most populous cities having a population density above 3000 people/km.² It is also the biggest coal mining region in the EU (in terms of number of coal mines, coal production and coal mining employment), with an economy that is primarily based on fossil fuels and energy intensive industries. Compared with other Voivodeships, Silesia is the third largest producer and second largest consumer of electricity in Poland².

The region comprises of eight NUTS-3 subregions, of which six are notably affected by coal mining and related industries. The communities where most miners live are in the central and western subregions, namely Katowicki, Bytomski, Gliwicki, Rybnicki, Sosnowiecki, and Tyski. While coal mining still plays an important role in the regional economy, its gradual decline in recent years has been marked by falling production volumes and productivity, as well as low profitability. The share of mining in gross value added of the Silesian Voivodeship decreased from 9.7% in 2000 to 6.2% in 2019. Nonetheless, the sector still employed 72,051 in 2021, representing 4.3% of total employment in the region. It is expected that the employment in coal mining will be reduced by 12,300 people by 2030 and by 48,700 in 2050.⁴

Regional coal industry profile			
Coal mining			
Type of coal	Hard coal		
Type of coal extraction	Underground mining		
Number of operating coal mines	16		
Production of coal [Mt annual]	54,4 Mt ⁵	Year of prod. data:	2021
Main (largest) coal mining enterprises			
Name	Ownership	Number of employees	Year of employee data
KWK Sośnica	Polska Grupa Górnicza (PGG)	1,838	2021
KWK Staszic-Wujek		4,383	2021
KWK Mysłowice-Wesoła		3,079	2021
KWK Ruda		5,371	2021
KWK ROW		10,995	2021
KWK Bolesław Śmiały		1,663	2021
KWK Piast-Ziemowit		6,576	2021
KWK Borynia-Zofiówka-Bzie	Jastrzębska Spółka Węglowa	8,471	2021
KWK Budryk		4,909	2021
KWK Knurów-Szczygłowice		10,541	2021
KWK Pniówek		7,995	2021
ZG Sobieski	Tauron Wydobycie	2,450	2021
KWK Bobrek-Piekary	Węglokoks	1,921	2021
PG Silesia	Private	1,430	2021
ZG Eko-Plus	Private	333	2021

2. Polish Statistical Office. Population. Size and structure and vital statistics in Poland by territorial division in 2022. As of 30 June 2022: https://stat.gov.pl/en/topics/population/population/population-size-and-structure-and-vital-statistics-in-poland-by-territorial-division-in-2022-as-of-30-june-2022_3_32.html#

3. 'Territorial Just Transition Plan of Silesian Voivodeship by 2030' approved by EC. Appendix 1 to the Resolution of the Voivodeship Board (21/12/2022). Available at: https://transformacja.slaskie.pl/images/Dokumenty/1671795836_projekt_terytorialny_2022%20-%20Copy%202.pdf

4. Ibidem.

5. Kapetaki, Z., Alves Dias, P., Conte, A., Kanellopoulos, K., Mandras, G., Medarac, H., Nijs, W., Ruiz, P., Somers, J., Tarvydas, D., Recent trends in EU coal, peat and oil shale regions, EUR 30618 EN, Publications Office of the European Union, Luxembourg, 2021, 978-92-76-30987-1, doi:10.2760/510714. JRC123508: <https://publications.jrc.ec.europa.eu/repository/handle/JRC123508>

ZG Siltech	Private	96	2021
Total level of employment in coal mining (in the region)		72,051 ⁶	2021
Regional coal power plant profile			
Coal power plants			Year of data
Number of coal power plants		5	2022
Installed capacity [MW]		6,131 ⁷	2021
Share of coal in regional power generation mix [%]		85% share in electricity production (2017) ⁸ 75,4% in heat production (2019) ⁹ .	2017 and 2019
Main (largest) coal power plant operators			
Name	Ownership (e.g. public or private)	Number of employees	Year of employee data
Coal Power Plant Rybnik	PGE GiEK S.A.	528	2019
Coal Power Plant Łaziska	Tauron Wytwarzanie S.A.	356	
Coal Power Plant Łagisza	Tauron Wytwarzanie S.A.	215	
Coal Power Plant Jaworzno II	Tauron Wytwarzanie S.A.	618	
Coal Power Plant Jaworzno III	Tauron Wytwarzanie S.A.		
Total level of employment in coal power plants (in the region)		1,717 ¹⁰	2019

Regional and local transition strategies and plans

Status and timeline of coal transition / phase-out

Strategies and plans for energy, climate and air quality have been developed at the national and regional levels (see the section on current regional strategies below). The **Energy Policy of Poland until 2040** (PEP 2040), adopted by the Council of Ministers in February 2021, envisages that coal will account for 56% of electricity production by 2030. The Policy also anticipates moving away from burning coal in households in cities by 2030, and in rural areas by 2040.¹¹

Two power units (1 and 2) at the Rybnik coal power plant were shut down in 2021¹³ as they did not meet new emissions standards. Of the remaining six units (units 3 - 8, with a total capacity of 1 350 MW), the operator (PGE GiEK

The **Territorial Just Transition Plan for Silesia** (2022) foresees limiting the role of hard coal in the energy sector and the region's economy by 2030. In four mines, mining will be ended or significantly reduced by 2030. Three coal-fired power plants are also planned to be shut down. This aligns with Social Contract for the mines of KWK Bolesław Śmiały, KWK Sońnica, KWK Staszic-Wujek and KWK Ruda, which contains agreement for planned cessation or restructuring of coal production by 2030. This contract does not, however, cover mines run by private entities operating in the Silesian Voivodeship: ZG Siltech, ZG Eko-Plus and KWK Silesia, which have mining concessions until 2023, 2043 and 2044, respectively¹². Decarbonisation measures will also encompass other economic sectors, including replacement of the public transport fleet by zero-emissions vehicles and support for investments in prosumer energy.

S.A.) had planned to close two power units (3 and 4) by the end of 2022 but this was extended to the end of 2023. The technical outlook for the operation of units 5-8 currently has been defined until 2030. In the case of the coal power

6. Charkowska, Z., Przedlacki, W., Balcerowski, J., Hetmański M., Swoczyna B. (2023) Baza danych kopalni węgla kamiennego i brunatnego w Polsce. In: Informat. https://docs.google.com/spreadsheets/d/15MQg9rzPBecD3c0T-RsH0gmVDCd0_6DJMxckzCvt58/edit#gid=234679765

7. Kapetaki, Z., Alves Dias, P., Conte, A., Kanellopoulos, K., Mandras, G., Medarac, H., Nijs, W., Ruiz, P., Somers, J., Tarvydas, D., Recent trends in EU coal, peat and oil shale regions, EUR 30618 EN, Publications Office of the European Union, Luxembourg, 2021, 978-92-76-30987-1, doi:10.2760/510714, JRC123508: <https://publications.jrc.ec.europa.eu/repository/handle/JRC123508>

8. Energy balance of Silesian Voivodeship until 2030 with perspective until 2050 in the context of planned energy transition (Presentation of Romuald Meyer during the convention of mayors and commune heads on 09.01.2020). Available at: https://www.pgksa.pl/04_aktualnosci/rok_2020/AKT_0585/prezentacja.pdf

9. Development potentials and challenges Silesian Voivodeship in context of just transition, Diagnostic attachment to Territorial Just Transition Plan (02.2021). Available at: <https://www.google.pl/url?sa=t&ct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEWkZdOVh-v-AhXjsisKHZRuBnwQFnoCAB8QAQ&url=https%3A%2F%2Ftransformacja.slaskie.pl%2Fdownload%2Fcontent%2F192&usq=A0vVaw2yNtWQYT0uZjvBoN193WC>

10. Territorial Just Transition Plan of Silesian Voivodeship by 2030' approved by EC. Appendix 1 to the Resolution of the Voivodeship Board (21/12/2022).

11. Energy Policy of Poland until 2040: <https://www.gov.pl/web/climate/energy-policy-of-poland-until-2040-epp2040>

12. Territorial Just Transition Plan of Silesian Voivodeship by 2030' approved by EC. Appendix 1 to the Resolution of the Voivodeship Board (21/12/2022). Available at: https://transformacja.slaskie.pl/images/Dokumenty/1671795836_projekt_terytorialny_2022%20-%20Copy%202.pdf

13. Website of PGE GiEK S.A. (19.08.2021) <https://pgegiiek.pl/aktualnosci/dwa-bloki-w-elektrowni-rybnik-wylaczone-z-eksploatacji> (last accessed on 29/05/2023).

plants owned by Tauron Wytwarzanie S.A., the owner cannot provide a detailed plan for shutting down coal units.

Current regional strategies and plans for transition (including for economic development, diversification, and decarbonisation)

The **Just Transition Fund programme** for Silesian Voivodeship earmarks €2.4 billion for supporting green transition in Silesia and Western Małopolska. The Just Transition Fund will specifically support the local economic diversification by investing in small and medium-sized businesses (SMEs) working on renewable energy, clean mobility and other green sectors. To restore environmental damage from the mining activities, the JTF will also invest in rehabilitation and decontamination of 2,800 ha of post mining areas in line with the polluter pays principle. The fund will also invest in the energy efficiency of public buildings and of housing, including by supporting home insulation, rooftop solar installations, and heat pumps. Finally, the JTF will also invest in the training of 100,000 workers many of whom currently work in the fossil fuels sector and equip them with new skills to work in renewable and climate neutral industries. 27,000 new jobs are expected to be created in Silesia directly as a result of the just transition plan measures.¹⁴

The Strategy for the Development of the Silesian Voivodeship “Silesia 2030” – Green Silesia¹⁵ aims for the Silesian Voivodeship to become a modern European region with a competitive economy, being the result of the responsible transformation, ensuring development opportunities for its inhabitants and offering a high quality of life in a clean environment.

The **Regional Innovation Strategy for Silesia 2030** focuses on the energy, medicine, information and communication technologies, green economy and emerging industries (e.g. eco-industries, creative industries, maritime industry, mobility industries), mobile services, and personalised medicine.

The general objective of the **“Low-Emission Economy Policy for the Silesian Voivodeship until 2030”**¹⁶ is to increase the energy security of the Silesian Voivodeship and ensure energy efficiency, while limiting the negative impact of human activity on air quality. This policy has four specific goals:

- high energy standard of residential buildings and public buildings;
- energy security of the Silesian Voivodeship and the development of the clean energy sector;

- an ecological system of collective and individual transport;
- proactive management in the area of air quality.

The **“Regional Revitalisation Policy for the Silesian Voivodeship”**¹⁷ aims to support social inclusion processes, activating the inhabitants of the region and improving their living conditions with the use of tools for the development of entrepreneurship, improvement of the quality of the environment and adaptation of the living space to residents' needs.

“Social Policy Strategy of the Silesian Voivodeship for the year 2020-2030”¹⁸ sets directions for the development of regional social policy until 2030. It is an extensive diagnosis of the socio-economic situation of the Silesian Voivodeship, its mission, strategic goals and directions of activities.

Principal actors in the development and implementation of transition strategies and plans

At national level: the Ministry of Climate and Environment, the Ministry of Development Funds and Regional Policy, The Ministry of Family and Social Policy, and relevant state agencies

At regional level:

- Regional governments: Marshall Office of the Silesian Voivodeship,
- Local government administration and associations of local governments: Regional Council for the initiative of mining regions in the Śląskie Voivodeship, Upper Silesian and Zagłębie Metropolis, Association of Municipalities and Districts of the Central Sub-region of the Śląskie Voivodeship, Association of Mining Municipalities in Poland, Silesian Association of Municipalities and Districts, Association of Municipalities and Districts of the Western Sub-region of the Śląskie Voivodeship
- Coal utilities: all coal power plants and coal mining listed in the above sections;
- Trade unions (NSZZ Solidarność Śląsko-Dąbrowskiego Region) and employers' organisations: Silesian Employers' Association Lewiatan, Association of Entrepreneurs and Employers Silesia;
- Regional Development Agency in Katowice;
- Regional and local Chambers of Commerce: Katowice (regional), Racibórz, Żory and others;

14. https://ec.europa.eu/commission/presscorner/detail/en/ip_22_7413

15. The Strategy for the Development of the Silesian Voivodeship “Silesia 2030” – Green Silesia: https://bip.slaskie.pl/wojewodztwo/programy_plany_i_strategie_wojewodztwa/strategia_rozwoju/strategia-rozwoju-wojewodztwa.html

16. Low-Emission Economy Policy for the Silesian Voivodeship until 2030: <https://www.slaskie.pl/content/gospodarka-niskoemisyjna>

17. Regional Revitalization Policy for the Silesian Voivodeship: <https://www.slaskie.pl/content/regionalna-polityka-rewitalizacji>

18. Social Policy Strategy of the Silesian Voivodeship for the year 2020-2030: <https://www.slaskie.pl/content/strategia-polityki-spoecznej-wojewodztwa-slaskiego>

- National, local and regional NGOs: Polish Green Network, BoMiasto Association, Silesian Climate Movement, Green Imielin Association, The Borders of Nature Association, Our Earth Association;
- Regional think tanks: Think Tank Silesia, "Pro Silesia" Association

Regional and local transition projects and initiatives

Notable ongoing and recent transition-related initiatives and projects

An important regional initiative has been establishment of **Regional Council for the Just Transition of the Silesian Voivodeship** in 2019. The Council has an advisory and coordinating function and is involved in supporting both the Voivodeship Board and the Monitoring Committee of the "European Funds for Silesia 2021-2027" program. The Council has currently 63 stakeholders who represent all levels of government (including national), academia, business, trade union and civil society..

The World Bank project "**Supporting Polish Coal Regions in Transition**" was implemented between January 2021 and December 2022. The project provided recommendations on the proposed processes and institutions (including the use of special operators for site-specific closures) for improving coordination of the implementation of the transition to a low-carbon economy. In the framework of the project, an assessment of the regional and local labour market was developed, where miners' preferences and the Silesian labour market capacity were examined to build public knowledge on the Just Transition's challenges¹⁹.

In April 2022, the Marshall Office initiated a project titled the "**Regional Observatory of the Transition**

Process (ROTP)" in cooperation with the Central Mining Institute, the Mining Chamber of Trade and Industry and the Miners' Trade Union in Poland. The project is designed to support and improve the management of the region's socio-economic transformation process. Its main purpose is collecting and disseminating knowledge about the socio-economic processes taking place in the region, effective transformation activities and tools, and innovative technologies supporting the process of diversification towards a green and digital economy. Furthermore, the ROTP aims to promote professional reorientation in the region by initiating cooperation between local partners from areas undergoing the transition, research and development institutes, and business entities. In addition, it seeks to increase the engagement of regional stakeholders and ensure a smooth implementation of the Just Transition Fund²⁰.

Notable planned transition-related initiatives and projects

Sixteen strategic projects considered essential for the effectiveness of the transition process in Silesia by 2030 were identified and will be financed through the Just Transition Fund²¹. Among others, these include:

- Development of post-mining area management system in the Silesia Voivodeship "OPI-TPP 3.0"
- IT HUB Gliwice – a modern business space and labs for start-ups
- The Quarter of New Technologies – Katowice Gaming Hub- an innovation lab for new technologies
- The IT Transition Processes Monitoring System – the big data centre for transition
- The Regional Observatory of the Transition Process 2.0.

19. START application submitted by Marshall Office of the Silesian Voivodeship.

20. Ibidem.

21. Ibidem.

Regional and local transition challenges and opportunities

Nature and scale of key transition challenges

The Silesian Voivodeship is the most coal-dependent region in the EU with mining jobs being characterised by high geographical concentration. Mines and other enterprises related to the coal industry are located close to city centres and directly at housing estates. Restructuring processes which have been taking place for 30 years have not significantly changed the existing economic structure, which is still characterised by a significant share of the mining sector and high local dependence of labour markets on traditional industries. In addition, the region is characterised by the highest consumption of hard coal for household heating purposes²².

A significant problem for the regional labour market is the low professional activity of residents, including women (in 2019, the number of economically inactive people in the region amounted to about 1,7 million, which was the second highest after the Masovian Voivodeship), and high territorial differentiation of unemployment²³. The labour market is negatively affected by net outward migration and the related strong depopulation processes, together with an ageing population. The outflow of human capital, and intellectual capital, in the form of innovative start-ups, investors and business concepts to other regions and countries, is a phenomenon that has been observed for a long time. According to the forecasts of the Central Statistical Office, by 2050, the population in the Silesian Voivodeship will decrease by 18.8% compared to 2018 (i.e. by over 850 thousand people). Due to the ending of mining activity, the transformation process will require creating a significant number of new jobs (almost 37 thousand by 2030), alongside retraining thousands of employees, filling the competence gap and changing education profiles, as well as stopping the outflow of the region's most educated and creative inhabitants²⁴.

The Silesian Voivodeship is also characterised by the highest percentage of degraded areas in the country, requiring rehabilitation and revitalisation. This results in the region being perceived as a problem area and an unattractive place to live in and work. In addition, local governments will experience a decrease in income to their budgets as the mining activities cease playing a significant role in the region²⁵.

Nature and scale of key transition opportunities

The Silesian Voivodeship is one of the Polish regions with the greatest economic potential and has the second highest GDP in Poland after Warszawski Stołeczny region. Silesia is also one of Poland's important research and development centres, which includes scientific and research units and institutes and universities conducting research independently or in cooperation with businesses, with a primary focus on environmental protection, energy, automation, electronics and construction.

The automotive sector is firmly rooted in the structure of the economy of the Silesian Voivodeship and can be considered a key transition opportunity for this region. The automotive industry also plays an increasingly important role in the smart specialisation of the region, evolving towards the production of cars and components for hybrid and electric cars. Using the network of connections between companies present in the region, the available human capital with many years of industry experience, the voivodeship will increasingly focus on such areas as autonomous and semi-autonomous driving systems, digitisation of vehicles (touch screens, voice assistants), security systems (including traffic monitoring systems or vehicle surroundings) or keyless vehicle operating systems. Smart Automotive will be an area of synergy between traditional industry and future technologies - a combination of traditional automotive and IT technologies.²⁶

The Silesian Voivodeship has also significant potential in the field of green economy activities, including, among others, great potential for the location of photovoltaic farms, which can be a way for the development of part of the post-mining areas, and the region is also one of the production leaders of components for PV modules in Poland. The strong industrial character of the economy of the Silesian Voivodeship makes the region the right place to develop and implement new material solutions, related to the ease of recovering materials at the end of the life cycle of the products²⁷.

The Silesian Voivodeship, despite its relatively small area, is characterised by a large diversity of natural and cultural values, making it an interesting tourism destination²⁸.

22. Territorial Just Transition Plan of Silesian Voivodeship by 2030' approved by EC. Appendix 1 to the Resolution of the Voivodeship Board (21/12/2022). Available at: https://transformacja.slaskie.pl/images/Dokumenty/1671795836_projekt_terytoryalny_2022%20-%20Copy%20.pdf.

23. Ibidem.

24. Ibidem.

25. Ibidem.

26. News on Silesian Centre of Services for Investors and Exporters: https://invest-in-silesia.pl/content/branza-automotive-w-wojewodztwie-slaskim?fbclid=IwAR1t1us1aKQc9GNID6Cnt-GMKto5Iz2uPOaXEBmPQgUNz_-BEKoc8Lc73ZA

27. Potential and development challenges of Silesian Voivodeship in context of just transition. Katowice, 2022: https://transformacja.slaskie.pl/images/Dokumenty/1646921120_zs_CS_82-2-potencja-c5-82y-i-wyzwania-rozwojowe.pdf

28. Ibidem.

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- Kapetaki, Z., Alves Dias, P., Conte, A., Kanellopoulos, K., Mandras, G., Medarac, H., Nijs, W., Ruiz, P., Somers, J., Tarvydas, D., Recent trends in EU coal, peat and oil shale regions, EUR 30618 EN, Publications Office of the European Union, Luxembourg, 2021, 978-92-76-30987-1, doi:10.2760/510714, JRC123508: <https://publications.jrc.ec.europa.eu/repository/handle/JRC123508>
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- Regional Revitalization Policy for the Silesian Voivodeship: <https://www.slaskie.pl/content/regionalna-polityka-rewitalizacji>
- Regional Strategy of Innovation of the Silesian Voivodeship 2030: https://rpo.slaskie.pl/dokument/ris_wsl_2030_inteligentne_slaskie
- Silesian Centre of Services for Investors and Exporters: <https://invest-in-silesia.pl/content/wojewodztwo-slaskie-i-katowice-po-raz-kolejny-w-prestizowym-raporcie-fdi-intelligence>
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Initiative for coal regions in transition

The Initiative for coal regions in transition is led by the European Commission.

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