

Regional Profile

Stara Zagora, Bulgaria

Initiative for coal regions in transition

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Stara Zagora, Bulgaria

GENERAL INFORMATION

Country: Bulgaria

Region Name: Stara Zagora

Region NUTS¹ code: BG34 – Yugoiztochen
(Southeastern)

Region NUTS3 code: BG344 – Stara
Zagora Province

Main urban centres in the region²:

Stara Zagora – 142,746

Kazanlak – 64,558

Chirpan – 17,730

Radnevo – 16,210

Pavel Banya – 12,340

Galabovo – 10,589



1. NUTS: Nomenclature of Territorial Units for Statistics

2. Bulgarian National Statistical Institute. (2023). Population by districts, municipalities, place of residence and sex as of 31.12.2022. <https://www.nsi.bg/en/content/2975/population-districts-municipalities-place-residence-and-sex>

Regional socio-economic profile

General description of the socio-economic profile of the region

The region of Stara Zagora, located in south central Bulgaria, has a population of 291,852 (2022)¹ and covers 11 municipalities. Its capital, Stara Zagora, is the sixth-largest city in Bulgaria and the region's economy is recognised as one of the most dynamically evolving regions in Bulgaria. The GDP produced in the region represents 4.5% of the country's total and in terms of GDP per capita, Stara Zagora ranks second after Sofia (the capital) with EUR 10 309.² Due to its dynamic economy, the region also maintains a low unemployment rate, which in 2022 was 4.3%.³

The region's industrial profile is well-defined, with a predominant focus on mining and industrial production. Notably, coal mining and energy production provide significant employment and income for the local community

while also contributing to the country's energy security for more than 70 years. The region is known as the energy heart of Bulgaria, with the Maritsa area hosting the largest coal mining and coal-fired power plant in the country. The Maritsa Iztok energy complex encompasses three lignite pit mines as well as three coal power and one briquette plant, which employ more than 13,000 people.

Beyond coal-related activities, the region's economy is characterised by presence of manufacturing industry (especially heavy machinery, military equipment, and electronics), chemical industry (especially fertilizers, plastics, rubber products, and essential oils for the cosmetics industry), food processing, construction services and wholesale and retail trade. Furthermore, positioned at the centre of Bulgaria, the Stara Zagora region serves as a crucial intersection point for three major European transport corridors linking the Adriatic Sea with the Black Sea, Finland with Greece, and Germany with Turkey.

Regional coal industry profile			
Coal mining			
Type of coal	Lignite & brown coal		
Type of coal extraction	Open pit and underground mining		
Number of operating coal mines	3		
Production of coal [Mt annual]	20 Mt ⁴	Year of prod. Data:	
		2023	
Main (largest) coal mining enterprises			
Name	Ownership	Number of employees	Year of employee data
Troyanovo 1	State owned	9,303 (in Yugoiztochen region) ⁵	2018
Troyanovo-North			
Troyanovo 3			
Total level of employment in coal mining (in the region)		9,303	2018

1. Bulgarian National Statistical Institute. (2023). Population by districts, municipalities, place of residence and sex as of 31.12.2022. <https://www.nsi.bg/en/content/2975/population-districts-municipalities-place-residence-and-sex>

2. ibid

3. ibid

4. Ministry of Energy, Republic of Bulgaria. (2023). Territorial Just Transition Plan of Stara Zagora. <https://www.me.government.bg/themes/odobren-ot-evropeiskata-komisiya-teritorialen-plan-za-spravedliv-prehod-na-oblast-stara-zagora-2495-1642.html>

5. Alves Dias P. et al. (2021). Recent trends in EU coal, peat and oil shale regions. JRC Publications Repository (European Commission). <https://doi.org/10.2760/510714>

Regional coal power plant profile			
Coal power plants			Year of data
Number of coal power plants		3 coal power and 1 briquette plant	2023
Installed capacity [MW]		Iztok 1 – 700 MW ⁶ Iztok 2 – 1620 MW Iztok 3 – 908 MW Brikel – 200 MW Total: 3414 MW	2023
Share of coal in regional power generation mix [%]		42.29% (national level) ⁷	2022
Main (largest) coal power plant operators			
Name	Ownership	Number of employees	Year of employee data
Maritsa Iztok 1 (TPP AES Galabovo)	Private	350 ⁸	2023
Maritsa Iztok 2 (TPP Maritsa East 2)	State owned	2,300	
Maritsa Iztok 3 (TPP Contour Global Maritsa East 3)	Private	400	
Brikel EAD	State owned	1,280	
Total level of employment in coal power plants (in the region)		4,330	2023

Regional and local transition strategies and plans

Status and timeline of coal transition / phase-out

Bulgaria has announced its commitment to phase out coal by 2038 through a decision by the Council of Ministers in September 2023. According to the proposal, coal-fired power plants and coal mines will undergo a gradual shutdown, and affected workers will either receive compensation or assistance through the state-owned enterprise aimed at supporting and enabling the coal transition in Bulgaria. The enterprise will be called the Conversion of Coal Areas (KVR) and is set to be established as soon as possible.

The commitment to the phase out date goes hand in hand with Bulgaria's Territorial Just Transition Plans (TJTPs) for the regions of Stara Zagora, Pernik and Kyustendil.⁹ The plans were submitted in September 2023 and were approved by the European Commission in December 2023.

The 2038 phase out goal still lacks a specific schedule for the closure of mines and decommissioning of power plants

in Stara Zagora and in the country overall, however, we can refer to the findings of a study that was commissioned by the government to Bulgaria's Energy Transition Commission (ETC) on the 2038 phase-out scenario, which notes that the plan would require lignite coal capacities to be at 1.6 GW by 2030, with renewable energy sources reaching 7.5 GW. By 2035, 1 GW of lignite capacity would be maintained to address critical electricity balance needs of the country, while renewable capacity is forecasted to surpass 10 GW.¹⁰

In addition, following the establishment of the KVR, it will assume the responsibility of formulating a plan with specific actions and interim deadlines for achieving the 2038 target. Until 2027, the enterprise will focus on preparatory activities for pre-closure planning, including feasibility studies, data collection, and surveys in mining territories, environmental and safety risks factors related to the mine closure process, as well as the development of land-use plans to repurpose the areas for renewable energy, industrial applications, infrastructure projects or sustainable agriculture. Beyond 2027, the KVR will progressively increase its activities in mining land reclamation and power plant decommissioning while some mining will still continue alongside in order to provide energy security for the grid during the transition process.¹¹

6. Ministry of Energy, Republic of Bulgaria. (2023). Territorial Just Transition Plan of Stara Zagora. <https://www.me.government.bg/themes/odobren-ot-evropeiskata-komisiya-teritorialen-plan-za-spravedliv-prehod-na-oblast-stara-zagora-2495-1642.html>

7. Ember. (2023). Europe, Electricity Transition. <https://ember-climate.org/countries-and-regions/regions/europe/>

8. Ministry of Energy, Republic of Bulgaria. (2023). Territorial Just Transition Plan for Stara Zagora. <https://www.me.government.bg/themes/odobren-ot-evropeiskata-komisiya-teritorialen-plan-za-spravedliv-prehod-na-oblast-stara-zagora-2495-1642.html>

9. Ministry of Energy, Republic of Bulgaria. (2023). Territorial Just Transition Plans. <https://www.me.government.bg/themes-c389.html>

10. Ministry of Energy, Republic of Bulgaria. (2023). Territorial Just Transition Plan for Stara Zagora. <https://www.me.government.bg/themes/odobren-ot-evropeiskata-komisiya-teritorialen-plan-za-spravedliv-prehod-na-oblast-stara-zagora-2495-1642.html>

11. ibid

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

The **Territorial Just Transition Plan** for Stara Zagora is the key strategic document for the region's transition. In terms of energy transition, the plan puts a large focus on the development of renewable energy sources, especially photovoltaics, but also wind, green hydrogen and geothermal energy. Renewable energy projects would be located on the reclaimed mining lands or in close proximity to them, aiming to safeguard the local workforce, uphold established mobility patterns, and address employment gaps arising from the transition of coal-related activities in the region. The proposed list of projects in the TJTP estimates the potential to create approximately 4,358 new jobs in the region. Vocational Training Centres, such as Bulgarian-German Vocational Training Centre State Enterprise, would also play a crucial role for the (re) qualification and (re)training of the existing and new workforce.¹²

In addition to the TJTP, there are other plans that already incorporate green transition aspects within their strategies. One of these is the **Integrated Strategy for Territorial Development of Southeast Region of Bulgaria from 2021 until 2027** (2022) which includes the Stara Zagora region.¹³ The development plan sets the framework for integrated spatial development considering the local territorial potential and the principles of balanced sustainable development. The strategy envisages support for research and development for affordable clean energy technologies, support to SMEs and innovative start-ups, creation of innovation hubs and clusters, reduction of waste generated in the production process and development of industrial symbiosis and plans for strengthening the overall circular economy in the region.

The three **Municipal Development Plans for 2021-2027 for Stara Zagora, Radnevo, Galabovo**¹⁴ and one for the remaining 8 municipalities of the region (2021) which also contribute to the transition and development of the region. Some of the recurring priorities in these plans include achieving balanced economic growth, promoting sustainable tourism and agriculture, developing renewable energy infrastructure, improving energy efficiency in public and private buildings, supporting SMEs and local potential, improving digital connectivity, ensuring environmental protection including prevention and management of natural disasters, investing in human capital and improving education, health, social, cultural and sports infrastructure.

Principal actors in development and implementation of transition strategies and plans

At national level: the Ministry of Energy, the Ministry of Labour and Social Policy, the Ministry of Regional Development and Public Works, the Ministry of Economy and their executive agencies.

At regional and local level:

- Regional and local administrations: regional administration of Stara Zagora and municipalities of Bratya, Chirpan, Galabovo, Gurkovo, Kazanlak, Maglizh, Nikolaevo, Opan, Pavel Banya, Radnevo, and Stara Zagora;
- Energy companies: Bulgarian Energy Holding EAD (state-owned energy holding company in Bulgaria which owns the Mini Maritsa East Mines, the Maritsa Iztok 2 thermal power plant and the Brikel EAD plant) and the AES Bulgaria (American privately owned energy company which owns the Maritsa Iztok 1 and Maritsa Iztok 3 thermal power plants);
- Development agency: the Stara Zagora Regional Economic Development Agency (SZ REDA);
- Associations: Chamber of Commerce and Industry Stara Zagora;
- NGOs: WWF, CEE Bankwatch and Za Zemiata (Friends of the Earth Bulgaria);
- Trade unions: Confederation of Independent Trade Unions in Bulgaria (CITUBG) and Confederation of Labour 'Podkrepa'.

12. *ibid*

13. Council of Ministers. (2022). Integrated Strategy for Territorial Development of Southeast Region of Bulgaria. <https://www.strategy.bg/StrategicDocuments/View.aspx?lang=bg-BG&Id=1573>

14. Stara Zagora Municipality. (n.d.). Plan for Integrated Development of the Municipality of Stara Zagora 2021 – 2027. <https://www.strategy.bg/FileHandler.ashx?fileId=28265> & Radnevo Municipality. (n.d.). Plan for Integrated Development of the Municipality of Radnevo 2021 – 2027. <https://tinyurl.com/djeu82d3>

Regional and local transition projects and initiatives

Notable ongoing and recent transition-related initiatives and projects

There are several regional and local transition-related initiatives and projects in Stara Zagora:

- **Accelerating Sustainable Hydrogen Uptake Through Innovation and Education** (Erasmus Charter for Higher Education). Among the different activities, the programme includes a dedicated course with training sessions on the hydrogen economy in Bulgaria;
- **SynGReDiT – EDIH Zagore for Synergies for Green and Digital Transformation** (Digital Europe Programme/Horizon Europe). Establishment of European Innovation Hub Zagore which is led by the partnership between several local authorities from the Southeast region;
- **GreenSkillsforH2 – The European Hydrogen Skills Alliance** (Erasmus+). The project aims to support the development of a skilled workforce in Europe for the emerging hydrogen economy by addressing the skills gap and providing trainings to boost the industry;
- **COALition – Promoting Innovation Excellence in Transformation of Coal Regions to Climate-Neutral Thriving Economies** (Horizon Europe). The project entails development of an action and investment plan, policy dialogues and the mobilisation of funding;
- **SITRANS – Governance and Social Impact of Coal Regions under Transition** (LIFE programme). The project helps to promote a place-based governance approach and tailor-made transformative policies in coal phase out areas;
- **Operational Programme ‘Regions in Growth’ 2021-2027** (ERDF Fund). Encompasses 11 projects based in Stara Zagora, including the renovation of education infrastructure, building of social housing improving access to employment and quality of jobs in the municipalities of Stara Zagora and Radnevo. The **2014-2020 ‘Regions in Growth’ Programme** achieved the construction of a few vocational schools, e.g. the Trade High School “Knyaz Simeon Tarnovski” in Stara Zagora and the High School of Energy and Electrical Engineering in Galabovo;
- **Operational Programme ‘Innovations and Competitiveness’ 2021-2027** (ERDF Fund). The programme supports SMEs through investments, knowledge transfer, environmental friendliness and digitalisation. The **2014-2020 ‘Innovations and Competitiveness’ programme** helped to improve

energy efficiency of SMEs (e.g. of Doroslava Stroy), increase the production capacity of SMEs (e.g. of Izotservice-Stara Zagora) and foster technological modernisation;

- **Operational Programme ‘Human Resource Development’ 2021-2027** (ESF Fund). The programme envisages the improvement of access to employment, good and safe working conditions, job creation, social services, entrepreneurship and improving skills. Some examples of projects are the training for employees in DIPOL Ltd and improving the working environment at ZMM Nova Zagora AD;
- **Ongoing training courses provided by SZ REDA both for public and private sectors** covering green economic development and workforce development topics.

Notable planned transition-related initiatives and projects

After the Territorial Just Transition Plan for Stara Zagora is approved by the European Commission, the intention is to implement multiple coal transition initiatives and projects in the region. Some of the proposed projects include the reclamation of mining lands which will require highly qualified personnel and specialized mining equipment, establishing clean-technology industry parks, upscaling renewable energies in the area (photovoltaics, wind, bioenergy), creating a hydrogen-based value chain, providing (re)training programs for workers and fostering energy efficiency measures for poverty alleviation.

On a regional level other planned transition related initiatives include:

- The establishment of the **Industrial Zone Zagore** as a partnership between the Municipality of Stara Zagora and the National Company Industrial Zones, through the Ministry of Economy;
- The establishment of the **Institute of Sustainable Transition and Development within Trakia University** as a partnership between Trakia University, the University of Mining and Geology, several trade unions and the Municipality of Stara Zagora;
- **Zagore Hydrogen Valley**, a partnership between the businesses, institutions and academia to promote hydrogen;
- Agreement between the municipality of Radnevo and Galabovo to establish and run their own **industrial zone**;
- **‘Accelerating the deployment of green hydrogen mobility in EU regions’ 2021-2027** (Interreg Europe);

Regional and local transition challenges and opportunities

Nature and scale of key transition challenges

The Stara Zagora region faces several transition challenges, including coal energy dependence, cost of energy, aging population and depopulation, greening and diversification of the industrial base, relatively poor qualification of the workforce, and limited capacity for stakeholder dialogue and engagement¹⁵.

Energy transition and coal phase-out in Bulgaria and Stara Zagora is a delicate topic. This is mainly because coal energy production has been the leading sector in the region for more than 70 years and radical reform of the sector will pose significant challenges. Such a transition will inevitably require transformation and reorientation of the current workforce, as thousands of jobs are directly or indirectly related to the coal sector. There is a need to progress a concrete and detailed plan for the creation of alternative employment opportunities for these workers, alongside programmes for their reskilling, retraining and requalification. Effective transition planning, communication, and information sharing with workers and affected communities will be crucial for building support and public acceptance of the transition process.

The limited detail relating to Bulgaria's timeline for coal phase-out by 2038 is seen in some quarters as diminishing the country's wider climate change ambitions. Further, the delay in providing a detailed and widely communicated just energy transition strategy for the different regions, has made it more challenging to convince local and regional stakeholders to take part in the transformation. Accordingly, the recent recommitment and submission of a TJTP¹⁶ covering the region is a positive step, which it is hoped will enable the region to secure funds and prevent further delays in investments in renewable energy projects and worker retraining schemes, which are very much needed for the transition to a low carbon future in these regions.

Nature and scale of key transition opportunities

The region of Stara Zagora has a high potential for renewable energy and its proposed hydrogen valley development project (ZAHYR) is recognised and supported by the EU's Clean Hydrogen Partnership,¹⁷ with EUR 8 million of EU funding secured to support its development. The positive assessment of Stara Zagora's potential as a hydrogen production area was based on natural resources availability, such as its yearly solar-hours average, the level of basic infrastructure in place, the presence of ammonia industries that use significant amounts of hydrogen, and a technically skilled workforce whose retraining can be done relatively quickly and can be economically justified. In addition, there is an opportunity to use existing infrastructure and remediated land for development of energy storage facilities, clean technology industrial goods and components for new clean energy technologies. The current structure of the labour force employed also allows for a possible shift to new industrial activities (requiring mainly medium-skilled labour).

The transition towards renewable energy could provide opportunities for greater decentralisation of electricity production that could be promoted, for example, through support for prosumer approaches targeting SMEs and households (i.e. small-scale energy production plants, such as photovoltaics), which could also contribute to increasing energy security.

15. Ministry of Energy, Republic of Bulgaria. (2023). Territorial Just Transition Plan of Stara Zagora. <https://www.me.government.bg/themes/odobren-ot-evropeiskata-komisiya-teritorialen-plan-za-spravedliv-prehod-na-oblast-stara-zagora-2495-1642.html> & Anchevska M. et al. (2020). The righteous energetic transition - way to carbon neutrality, examples from the coal regions. WWF Germany. https://wwf.eu.awsassets.panda.org/downloads/wwf_kohle_positionspapier_bg_corr_ety_low_res.pdf

16. Ministry of Energy, Republic of Bulgaria. (2023). Territorial Just Transition Plan of Stara Zagora. <https://www.me.government.bg/themes/odobren-ot-evropeiskata-komisiya-teritorialen-plan-za-spravedliv-prehod-na-oblast-stara-zagora-2495-1642.html>

17. The Clean Hydrogen Partnership: https://www.clean-hydrogen.europa.eu/index_en

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