



European  
Commission

# European Innovation Scoreboard **2023** Country profile **Bulgaria**



Innovation

## European Innovation Scoreboard 2023 – Country profile Bulgaria

European Commission

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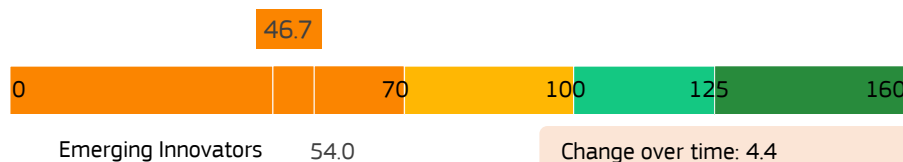
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The European Innovation Scoreboard report and annexes, and the indicators database are available at:

[https://research-and-innovation.ec.europa.eu/statistics/performance-indicators/european-innovation-scoreboard\\_en](https://research-and-innovation.ec.europa.eu/statistics/performance-indicators/european-innovation-scoreboard_en)



## Bulgaria

	Performance relative to EU in 2023	Performance change 2016-2023	Performance change 2022-2023
<b>SUMMARY INNOVATION INDEX</b>	<b>46.7</b>	<b>4.4</b>	<b>6.1</b>
<b>Human resources</b>	<b>32.7</b>	<b>-4.8</b>	<b>-4.8</b>
Doctorate graduates	40.7	-11.4	-11.4
Population with tertiary education	52.6	1.2	1.2
Lifelong learning	0.0	-1.1	-1.1
<b>Attractive research systems</b>	<b>26.6</b>	<b>10.8</b>	<b>0.5</b>
International scientific co-publications	27.4	18.7	1.1
Most cited publications	17.4	-1.1	-2.8
Foreign doctorate students	44.0	30.6	7.4
<b>Digitalisation</b>	<b>49.8</b>	<b>12.3</b>	<b>8.8</b>
Broadband penetration	73.8	24.2	17.4
People with above basic overall digital skills	17.0	0.0	0.0
<b>Finance and support</b>	<b>22.1</b>	<b>0.8</b>	<b>2.0</b>
R&D expenditures in the public sector	21.9	-1.6	-1.6
Venture capital expenditures	36.8	5.3	9.6
Government support for business R&D	3.2	-0.7	-1.0
<b>Firm investments</b>	<b>35.0</b>	<b>-13.2</b>	<b>-0.3</b>
R&D expenditure in the business sector	31.9	-0.8	-4.6
Non-R&D Innovation expenditures	62.5	-34.2	1.1
Innovation expenditures per employee	15.6	-6.4	2.7
<b>Use of information technologies</b>	<b>48.1</b>	<b>8.4</b>	<b>12.8</b>
Enterprises providing ICT training	23.6	6.4	15.3
Employed ICT specialists	73.3	10.3	10.3
<b>Innovators</b>	<b>56.0</b>	<b>56.7</b>	<b>27.8</b>
Product innovators (SMEs)	78.8	67.4	25.4
Business process innovators (SMEs)	36.0	45.4	30.4
<b>Linkages</b>	<b>35.4</b>	<b>24.6</b>	<b>15.1</b>
Innovative SMEs collaborating with others	56.9	51.8	37.7
Public-private co-publications	37.6	24.1	3.3
Job-to-job mobility of HRST	16.7	0.0	0.0
<b>Intellectual assets</b>	<b>92.5</b>	<b>-14.4</b>	<b>18.2</b>
PCT patent applications	33.5	-4.9	1.3
Trademark applications	118.9	21.7	5.7
Design applications	149.2	-54.7	49.5
<b>Employment impacts</b>	<b>56.7</b>	<b>21.0</b>	<b>9.5</b>
Employment in knowledge-intensive activities	65.1	0.0	0.0
Employment in innovative enterprises	49.8	40.9	18.5
<b>Sales impacts</b>	<b>59.7</b>	<b>21.4</b>	<b>0.9</b>
Medium and high-tech goods exports	44.3	9.3	-3.0
Knowledge-intensive services exports	85.9	34.9	-1.4
Sales of innovative products	54.1	23.1	9.6
<b>Environmental sustainability</b>	<b>46.2</b>	<b>-24.7</b>	<b>-0.2</b>
Resource productivity	12.3	11.8	1.2
Air emissions by fine particulate matter	32.7	-25.4	0.5
Environment-related technologies	99.2	-48.3	-1.9

The second column shows performance relative to that of the EU in 2023. Colours next to the column show matching colour codes: dark green: above 125% of the performance of the EU in 2023; light green: between 100% and 125%; light orange: between 70% and 100%; dark orange: below 70%. The next columns show performance change over time between 2016 and 2023 and between 2022 and 2023, with scores relative to those of the EU in 2016. Positive (negative) performance changes are shown in green (red).

**BULGARIA** is an **Emerging Innovator** with performance at 46.7% of the EU average. Performance is below the average of the Emerging Innovators. Performance is increasing at a rate lower than that of the EU (8.5%-points). The country's performance gap to the EU is becoming larger.

### Relative strengths

Design applications  
Trademark applications  
Environment-related technologies  
Knowledge-intensive services exports  
Product innovators

### Relative weaknesses

Lifelong learning  
Government support for business R&D  
Resource productivity  
Innovation expenditures per employee  
Job-to-job mobility of HRST

### Strong increases since 2016

Product innovators  
Innovative SMEs collaborating with others  
Business process innovators

### Strong decreases since 2016

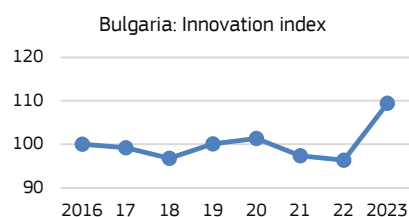
Design applications  
Environment-related technologies  
Non-R&D Innovation expenditures

### Strong increases since 2022

Design applications  
Innovative SMEs collaborating with others  
Business process innovators

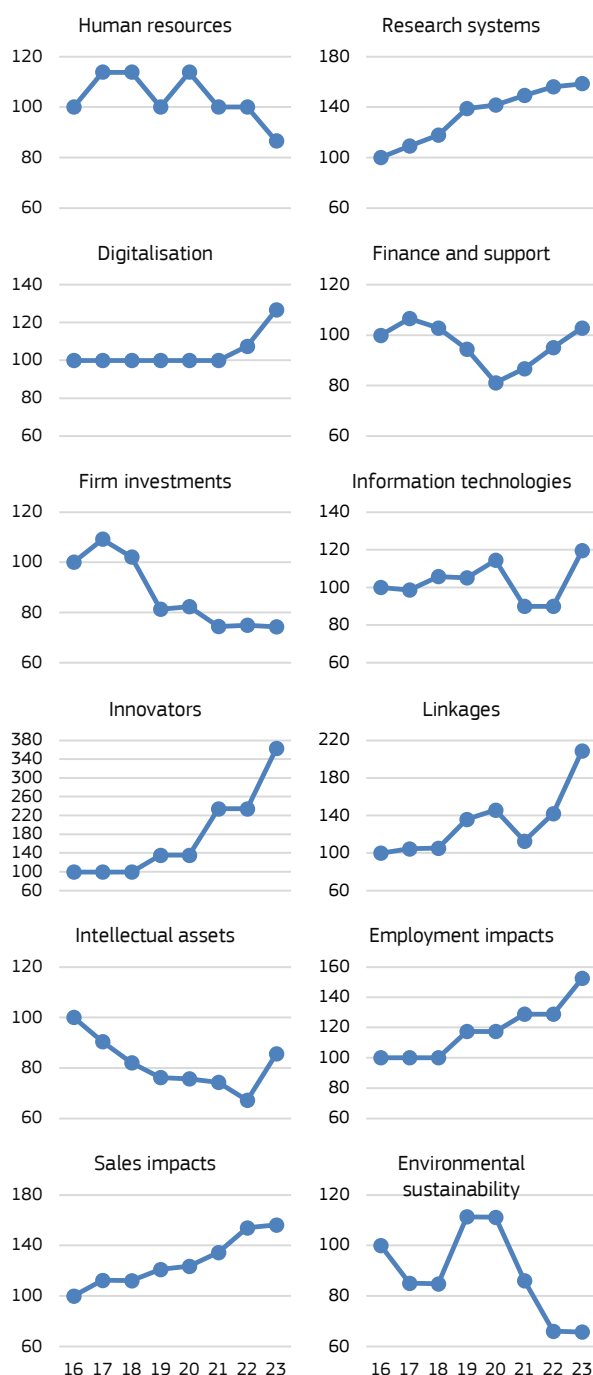
### Strong decreases since 2022

Doctorate graduates  
R&D expenditure in the business sector  
Medium and high-tech goods exports



The graph on the left shows the evolution of **innovation performance over time** against the performance of the country in 2016. Innovation performance decreased between 2016 and 2022 and improved strongly in 2023, resulting in an almost 10% increase over time.

The graphs below show the evolution of innovation performance in the different **innovation dimensions** against the performance of the country in 2016. There are strong and almost continuous increases in Research systems, Innovators, Linkages, Employment impacts and Sales impacts. Performance has been declining for Human resources, Firm investments and Environmental sustainability.





**Structural differences** with the EU are shown below:

- Bulgaria has lower per capita income but a faster growing economy. Manufacturing takes up a larger share of the economy, with SMEs accounting for a larger share of turnover.
- Enterprise births and FDI net inflows add positively to the innovation climate, entrepreneurial activities and the absence of top R&D spenders add negatively.
- Bulgaria has a much higher share of Non-innovators that have no interest to innovate.
- Entrepreneurial training and government procurement are at par with the EU as drivers of research and innovation.
- Bulgaria shows a negative performance on Climate change related indicators with a lower share of material resources coming from recycled waste materials, a below average reduction in greenhouse gas emissions, and a far below average score on environmental innovation.

	BG	EU
<b>Performance and structure of the economy</b>		
GDP per capita (PPS)	18,600	32,600
Average annual GDP growth (%)	6.4	4.4
Employment share Manufacturing (NACE C) (%)	18.7	16.4
of which High and Medium high-tech (%)	23.1	38.0
Employment share Services (NACE G-N) (%)	41.3	41.1
of which Knowledge-intensive services (%)	28.8	35.8
Turnover share SMEs (%)	45.9	34.1
Turnover share large enterprises (%)	31.4	49.6
Foreign-controlled enterprises – share of value added (%)	17.4	11.8
<b>Business and entrepreneurship</b>		
Enterprise births (10+ employees) (%)	1.6	1.0
Total Entrepreneurial Activity (TEA) (%)	6.0	6.8
FDI net inflows (% GDP)	3.6	2.1
Top R&D spending enterprises per 10 mln. population	0.0	20.3
Buyer sophistication (1 to 7 best)	3.4	3.7
<b>Innovation profiles</b>		
In-house product innovators with market novelties	10.4	12.2
In-house product innovators without market novelties	9.1	12.8
In-house business process innovators	10.1	16.5
Innovators that do not develop innovations themselves	4.8	6.5
Innovation active non-innovators	1.8	4.1
Non-innovators with potential to innovate	14.2	17.2
Non-innovators without disposition to innovate	49.6	30.7
<b>Governance and policy framework</b>		
Corruption Perceptions Index (0 to 100 best)	43.0	64.0
Basic school entrepreneurial education and training	3.3	3.3
Govt. procurement of advanced tech. products	3.3	3.5
Rule of law (-2.5 to 2.5 best)	-0.1	1.0
<b>Climate change indicators</b>		
Circular material use rate	4.4	11.8
Greenhouse gas emissions intensity of energy consumption	95.2	82.8
Eco-Innovation Index	47.5	100.0
<b>Demography</b>		
Population size	6.9	447.1
Average annual population growth (%)	-0.8	-0.1
Population density	63.9	108.8

Performance is measured relative to that of the country in 2016 (=100).



This report provides the Country profile from the 2023 European Innovation Scoreboard for Bulgaria.

*Studies and reports*