

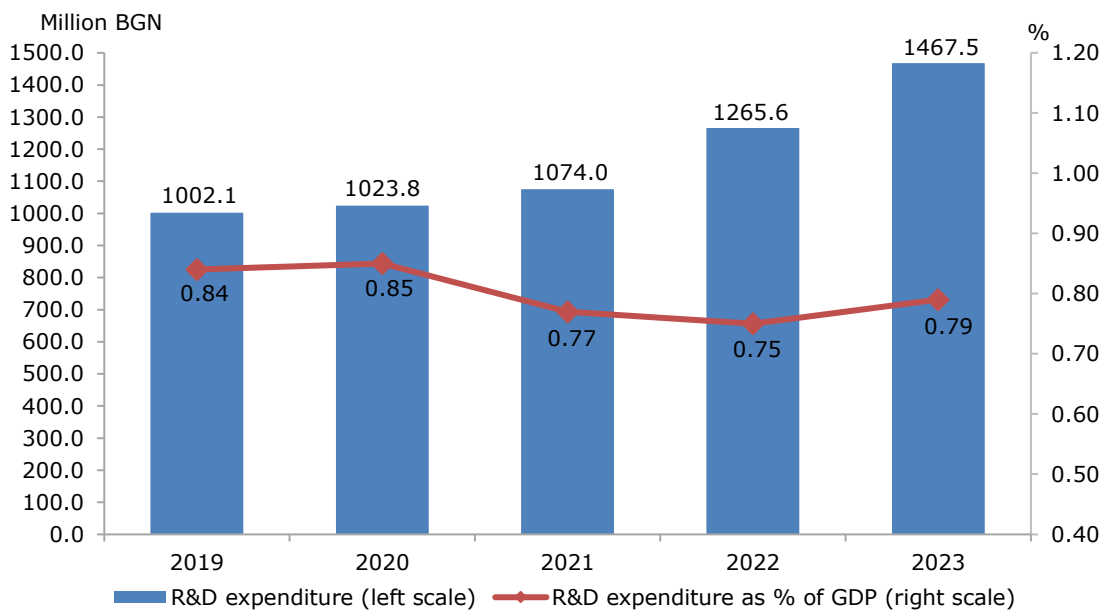


RESEARCH AND DEVELOPMENT ACTIVITY IN 2023 (PRELIMINARY DATA)

In 2023, the total amount of expenditure on research and development activity (R&D) was 1 467.5 million BGN, which was 15.9% more than the previous year. The annual growth tendency is retained for the period 2019 - 2023.

R&D intensity (R&D expenditure as a percentage of the gross domestic product) amounted to 0.79% and it was 0.04 percentage points higher than in 2022.

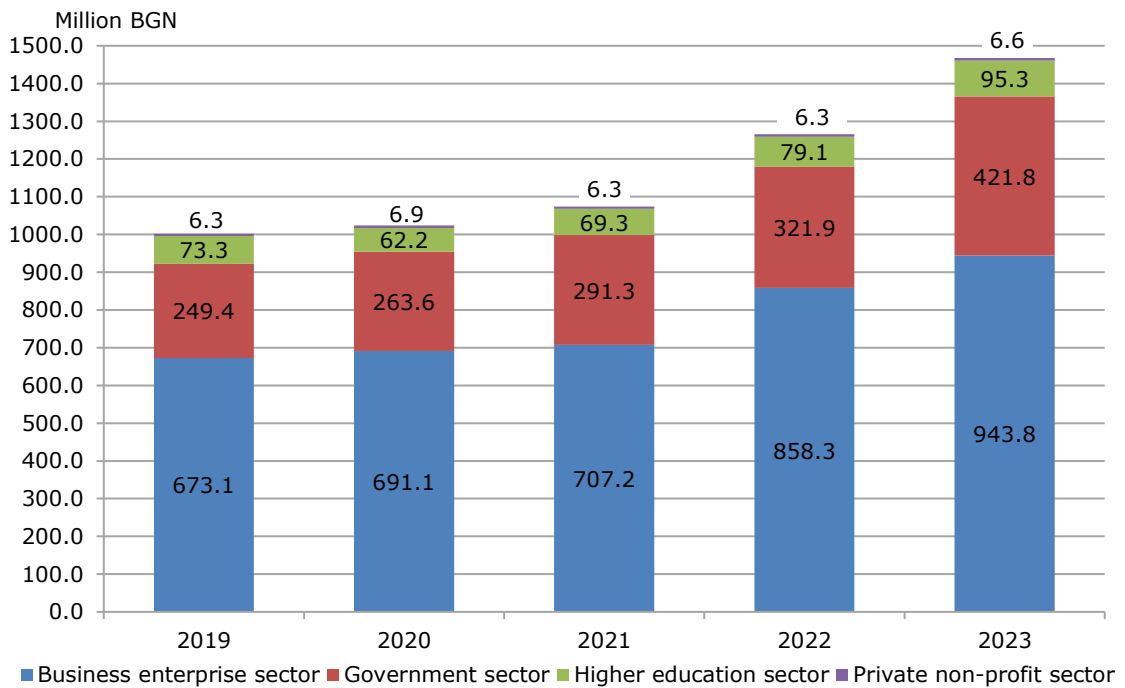
Figure 1. R&D expenditure



The Business enterprise sector was the largest of the four institutional sectors of R&D performance, with a share of 64.3% of the total R&D expenditure in 2023. It was followed by the Government sector, whose research institutes and organizations formed 28.7%. The spending on R&D by tertiary schools and university hospitals amounted to 6.5% and to 0.5% by the non-profit organizations, respectively.

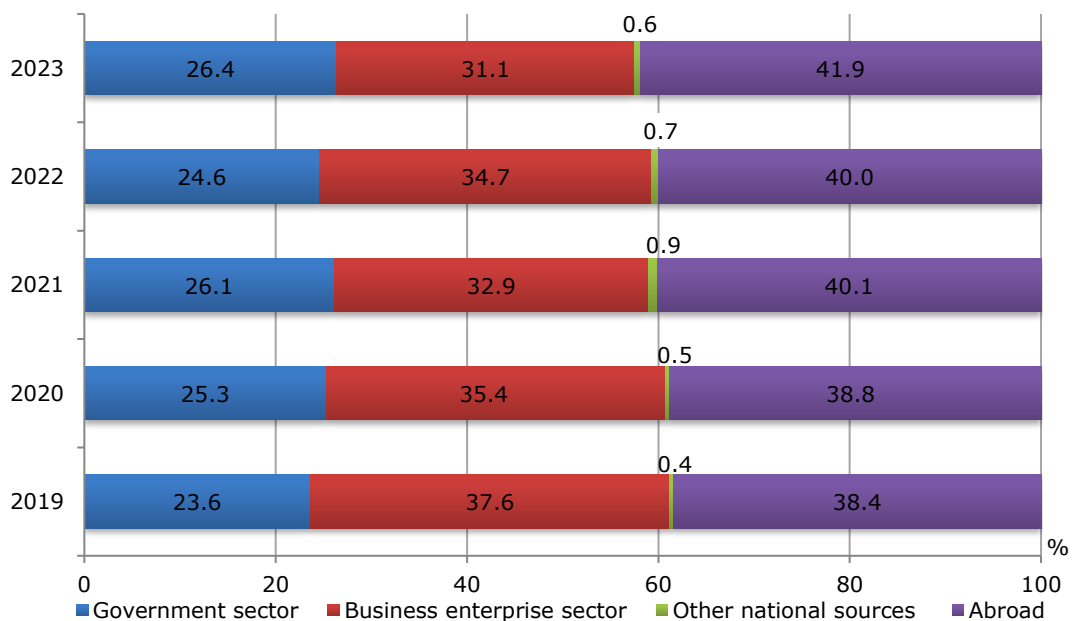
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Figure 2. R&D expenditure by institutional sectors



The R&D activity was financed from the state budget, businesses, other national sources and from abroad (Figure 3). In 2023, the largest was the share of foreign sources of funds for R&D - 41.9%. The Business enterprise sector financed 31.1% of the total R&D expenditure, and the state budget - 26.4%.

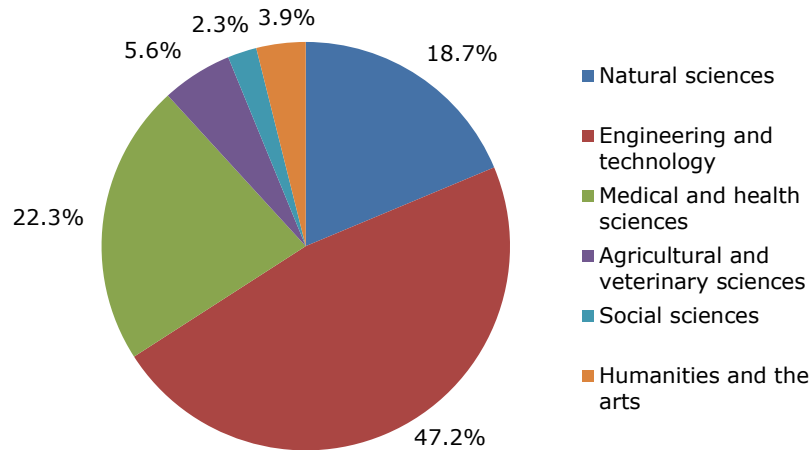
Figure 3. Structure of R&D expenditure by source of funds



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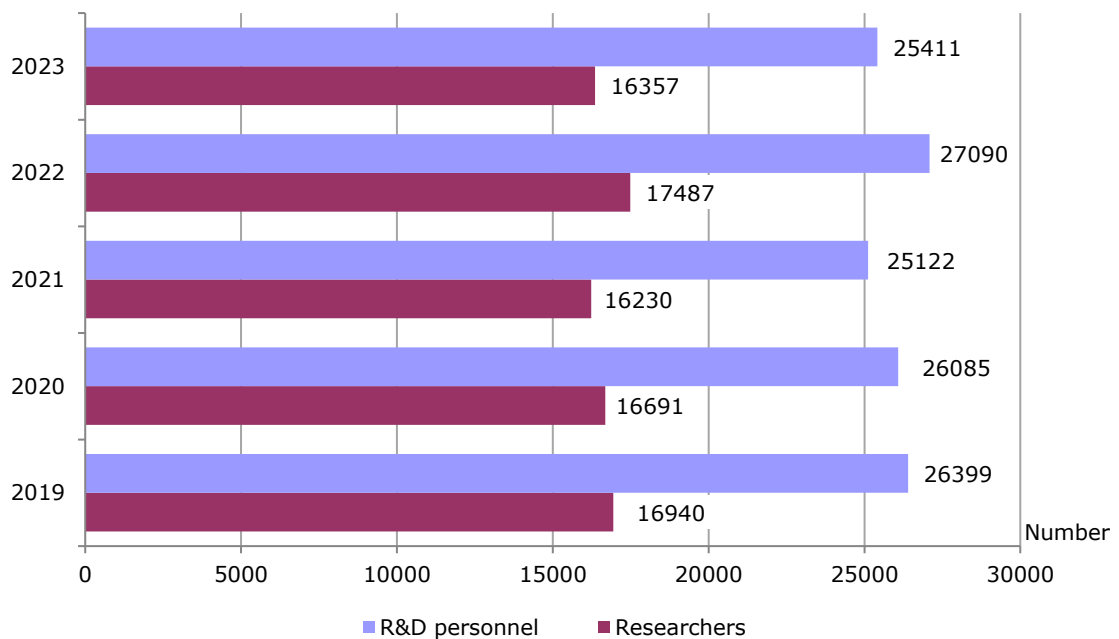
Regarding R&D expenditure by fields of science in 2023, as in the previous year, the highest share belonged to the R&D expenditure in engineering and technology sciences - 47.2% (693.5 million BGN), followed by the medical and health sciences with a share of 22.3% (326.9 million BGN) and the natural sciences - 18.7% (273.9 million BGN).

4. Structure of R&D expenditure by fields of science, 2023



In 2023, the personnel engaged in research and development activity amounted to 25 411 persons (in full-time equivalent), which was 6.2% less than the previous year (Figure 5). The share of women in the total R&D personnel was 48.6%. The number of researchers in full-time equivalent was 16 357 persons, which was 6.5% less in comparison with 2022.

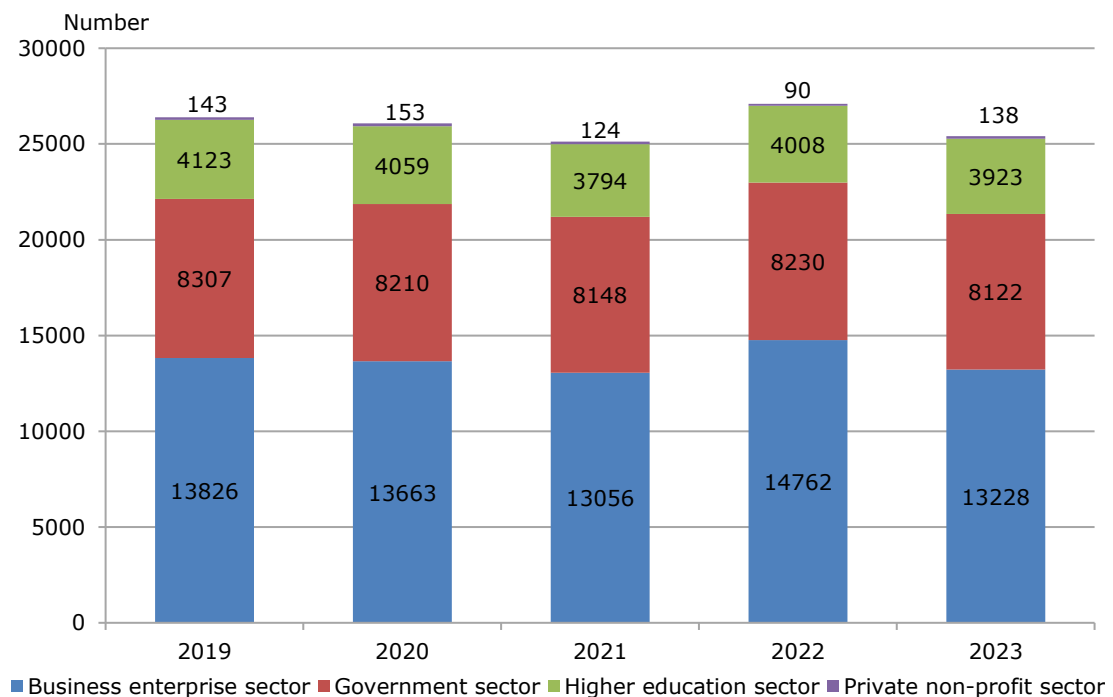
Figure 5. R&D personnel (in full-time equivalent)



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In 2023, the main part of the R&D personnel was concentrated in companies and research institutes in the business enterprise sector - 52.1% of the total R&D personnel (in full-time equivalent), or 13 228 persons. In organizations and institutions of the government sector, 8 122 persons were involved in R&D activity, which constituted 32.0%. In the higher education sector, 3 923 persons were carrying out research and development, with a relative share of 15.4%.

Figure 6. R&D personnel (in full-time equivalent) by institutional sectors



Methodological notes

Research and experimental development (R&D) comprise creative and systematic work undertaken in order to increase the stock of knowledge - including knowledge of humankind, culture and society - and to devise new applications of available knowledge. R&D activity covers basic research, applied research and experimental development.

The indicator 'R&D expenditure' is defined as all expenditure for R&D performed within a statistical unit, whatever the source of funds. The R&D expenditure comprises current costs and expenditure for acquisition of tangible and intangible fixed assets on R&D.

The indicator 'R&D personnel' measures the human resources going directly into R&D activity, responsible for the creation, application and dissemination of new knowledge. R&D personnel include all persons engaged directly in R&D, as well as those providing direct support to R&D (R&D managers, administrators, technicians and clerical staff). R&D personnel comprise researchers and other R&D personnel. Personnel in full-time equivalent

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(FTE) are calculated on the basis of working time spent on R&D activity during the reference year.

According to the methodological manual 'Frascati' (Guidelines for Collecting and Reporting Data on Research and Experimental Development - Frascati Manual, OECD, 2015), adopted by Eurostat, R&D expenditure and R&D personnel are distributed in four institutional sectors:

- Business enterprise sector - includes all enterprises whose primary activity is production of market goods and services (other than those included in Higher education sector);
- Government sector - comprises all institutional units, which are non-market producers and provide common services to satisfy the individual and collective needs of society and which are predominantly budgetary financed (other than those included in Higher education sector);
- Higher education sector - includes all universities, colleges, other institutions of post-secondary education, research and development sectors of higher education institutions and university hospitals;
- Private non-profit sector - includes foundations, associations, etc. providing non-market services.

More information and data from the survey on R&D activity can be found at NSI's official website (<https://www.nsi.bg/en/node/6745>) and in Information System Infostat (https://infostat.nsi.bg/infostat/pages/module.jsf?x_2=88&lang=en).