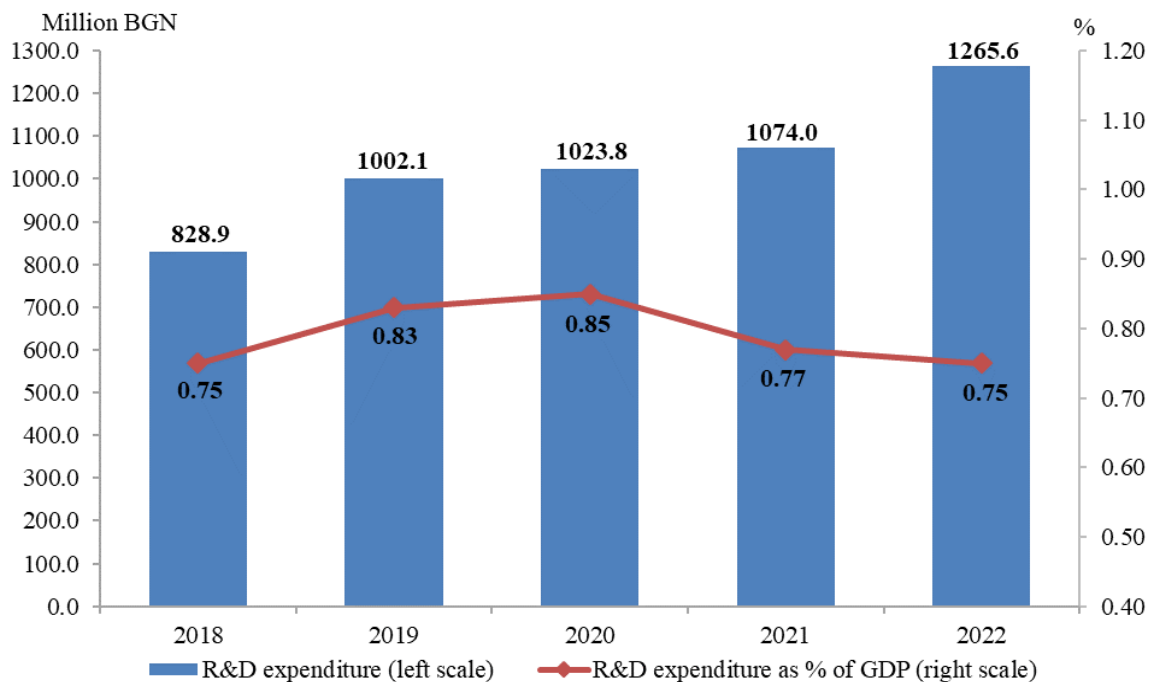


RESEARCH AND DEVELOPMENT ACTIVITY IN 2022 (PRELIMINARY DATA)

In 2022, the total amount of expenditure on research and development activity (R&D) was 1 265.6 million BGN, which was 17.8% more than the previous year. The annual growth tendency is retained for the period 2018 - 2022.

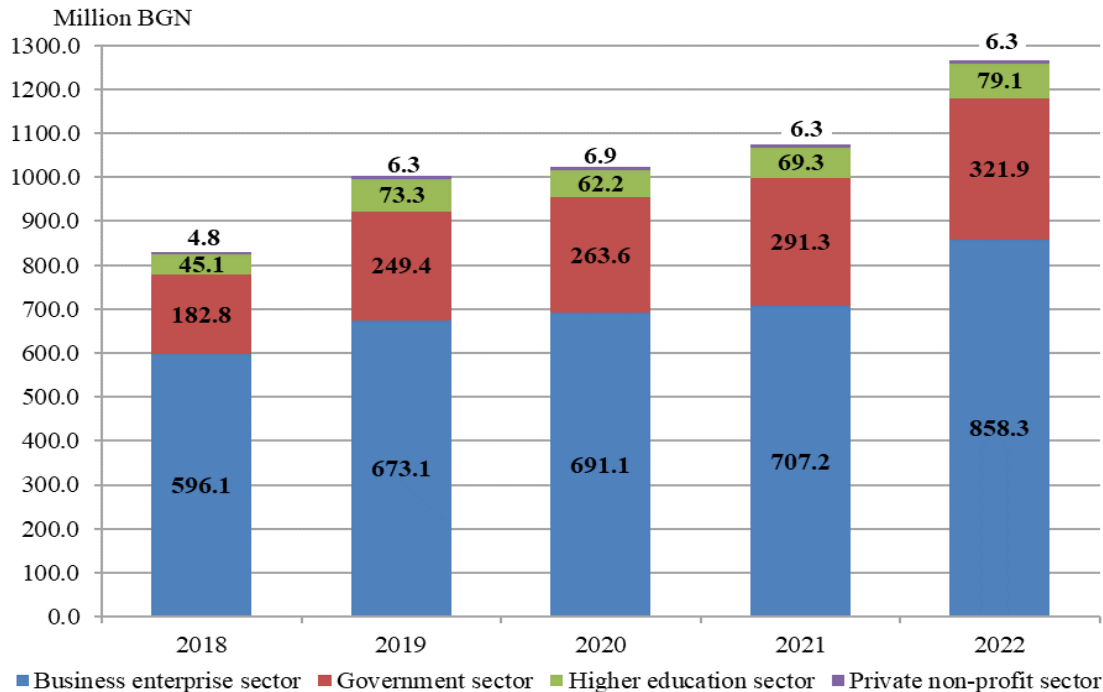
R&D intensity (R&D expenditure as a percentage of the gross domestic product) amounted to 0.75% and it was 0.02 percentage points lower than in 2021.

Figure 1. R&D expenditure



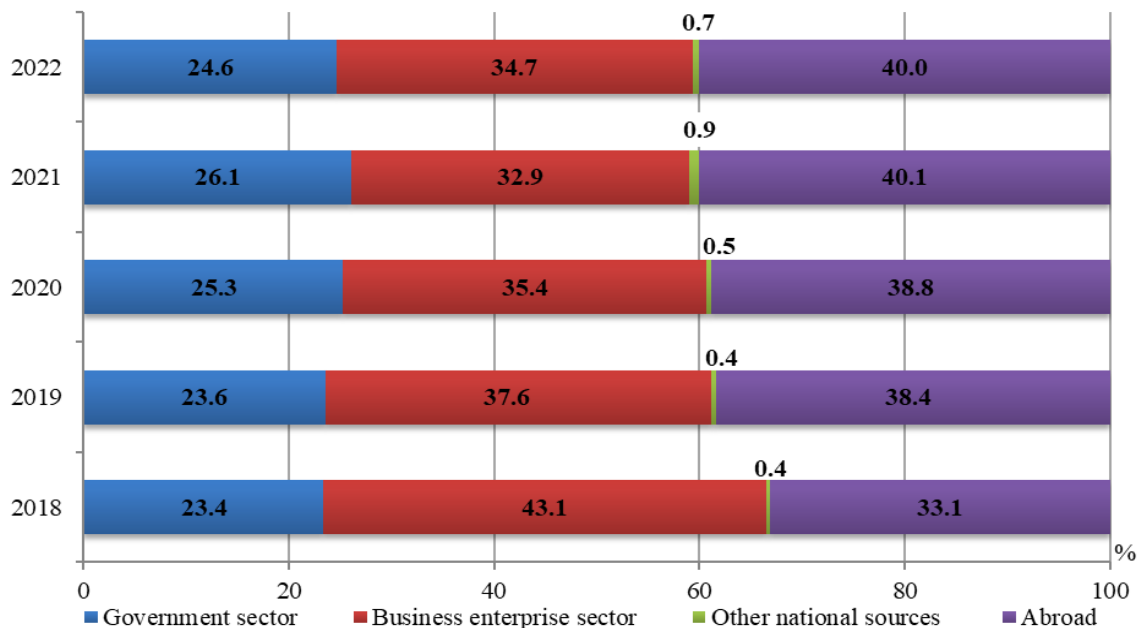
The business enterprise sector was the largest of the four institutional sectors of R&D performance, with a share of 67.8% of the total R&D expenditure in 2022. It was followed by the government sector, whose research institutes and organizations formed 25.4%. The spending on R&D by tertiary schools and university hospitals amounted to 6.3% and, respectively, by the non-profit organizations - 0.5%.

Figure 2. R&D expenditure by institutional sectors



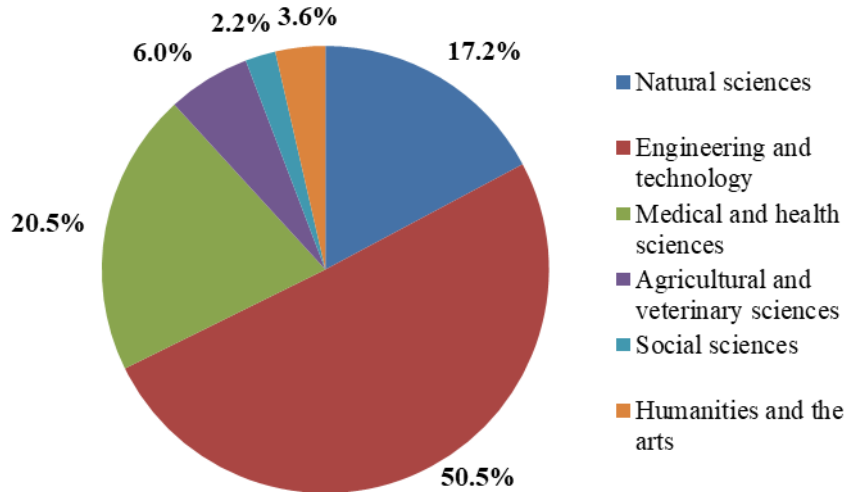
The R&D activity was financed from the state budget, businesses, other national sources and from abroad (Figure 3). In 2022, the largest was the share of foreign sources of funds for R&D - 40.0%. The business enterprise sector financed 34.7% of the total R&D expenditure, and the state budget - 24.6%.

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



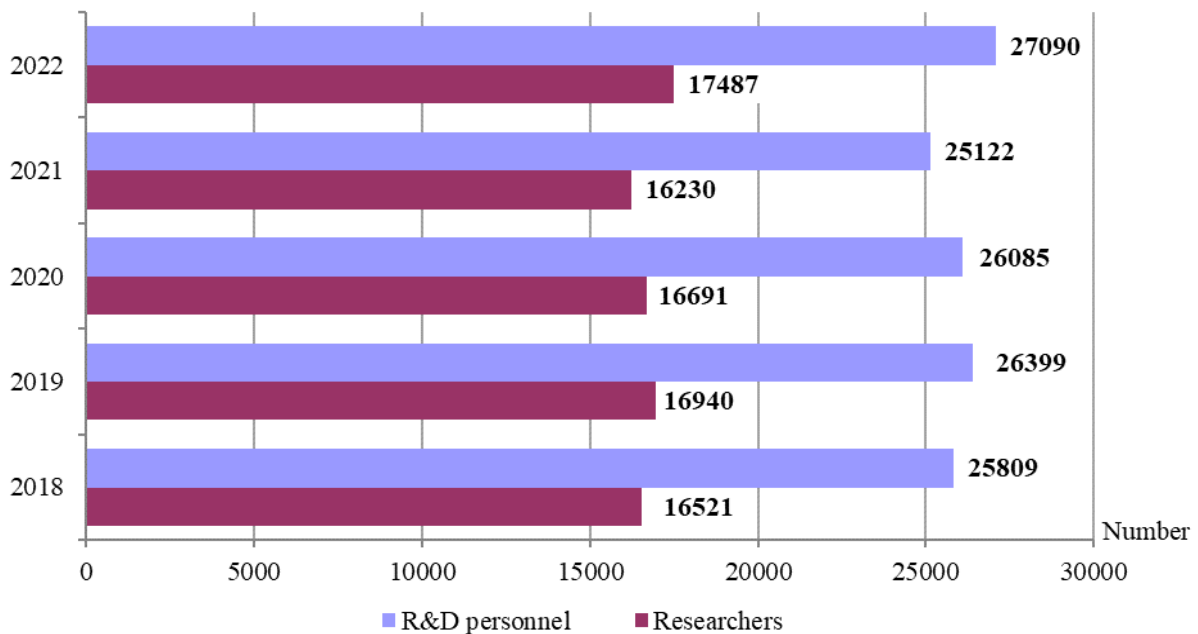
Regarding R&D expenditure by fields of science in 2022, as in the previous year, the highest share belonged to the R&D expenditure in engineering and technology sciences - 50.5% (638.6 million BGN), followed by medical and health sciences with a share of 20.5% (259.3 million BGN) and the natural sciences - 17.2% (217.1 million BGN).

Figure 4. Structure of R&D expenditure by fields of science, 2022



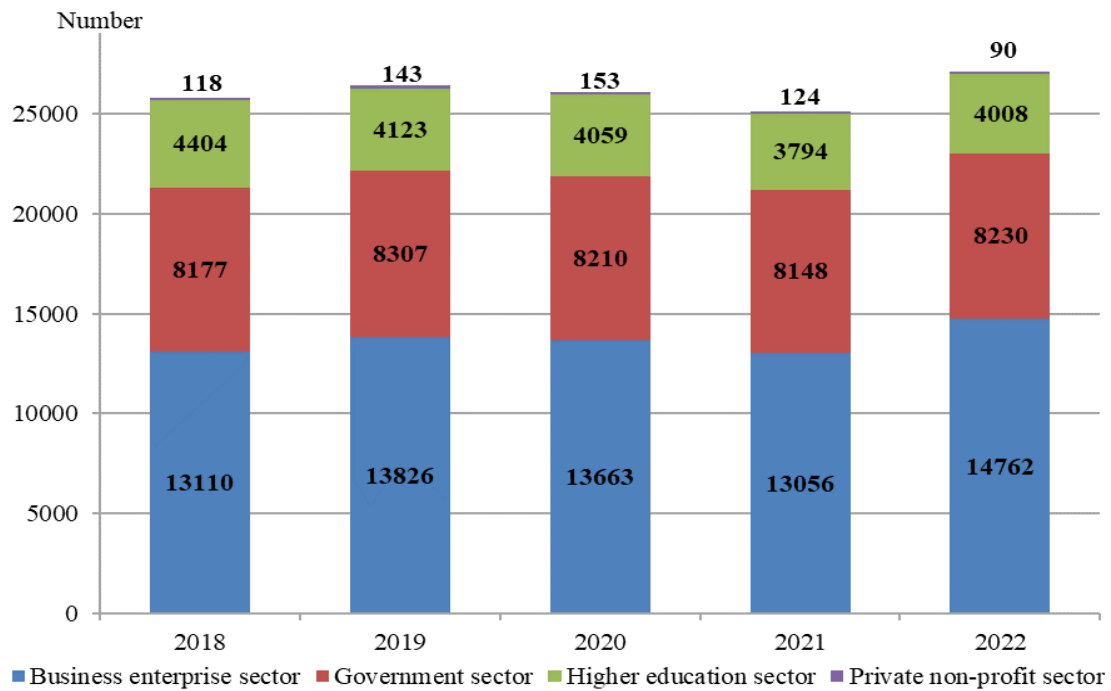
In 2022, the personnel engaged in research and development activity amounted to 27 090 persons (in full-time equivalent), which was 7.8% more than the previous year (Figure 5). The share of women in total R&D personnel was 47.1%. The number of researchers in full-time equivalent was 17 487 persons, which was 7.7% more compared to 2021.

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



In 2022, the main part of R&D personnel was concentrated in companies and research institutes in the business enterprise sector - 54.5% of the total R&D personnel (in full-time equivalent), or 14 762 persons. In organizations and institutions of the government sector, 8 230 persons were involved in R&D activity, which constituted 30.4%. In the higher education sector, 4 008 persons were carrying out research and development, with a relative share of 14.8%.

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 (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 the NSI's 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).