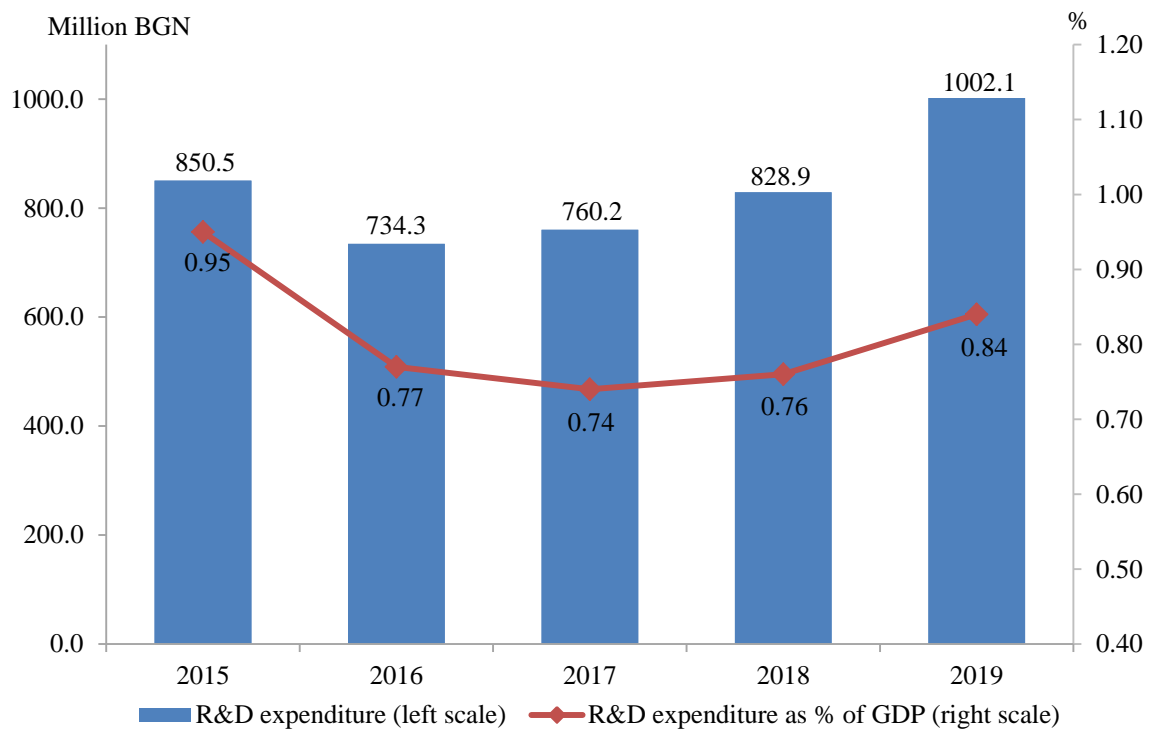


RESEARCH AND DEVELOPMENT ACTIVITY IN 2019 (PRELIMINARY DATA)

According to the preliminary data in 2019 the total amount of expenditure on research and development activity (R&D) was 1 002.1 million BGN.

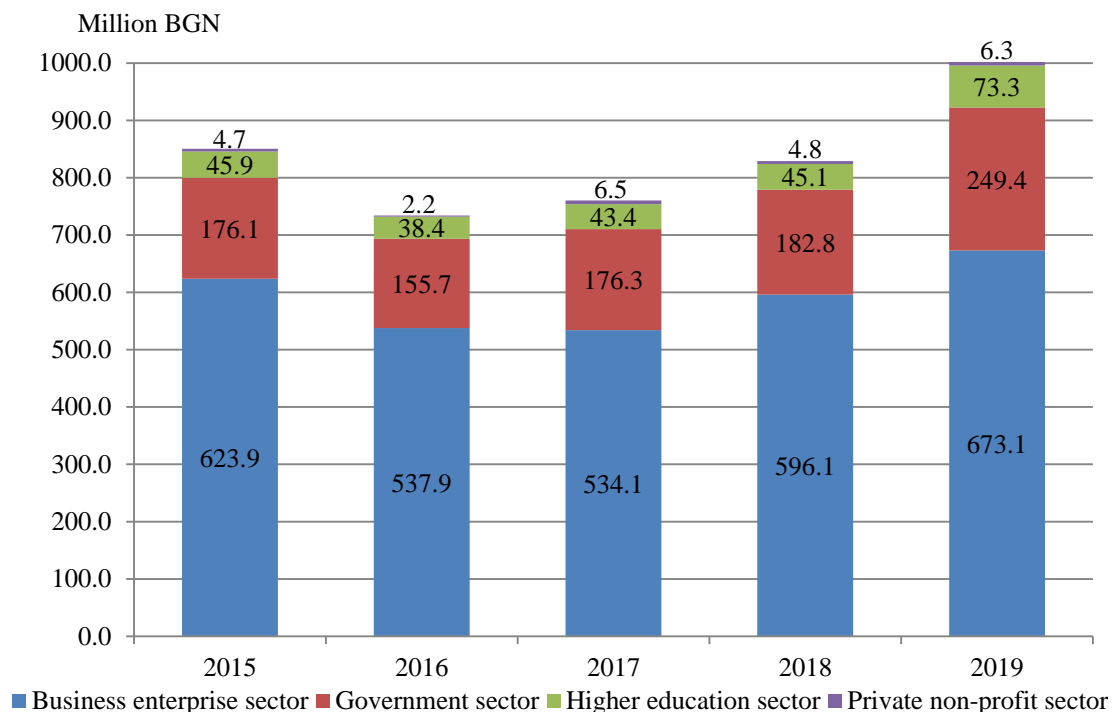
R&D intensity (R&D expenditure as % of gross domestic product) increased in 2019 to 0.84% compared to 0.76% in 2018.

Figure 1. R&D expenditure



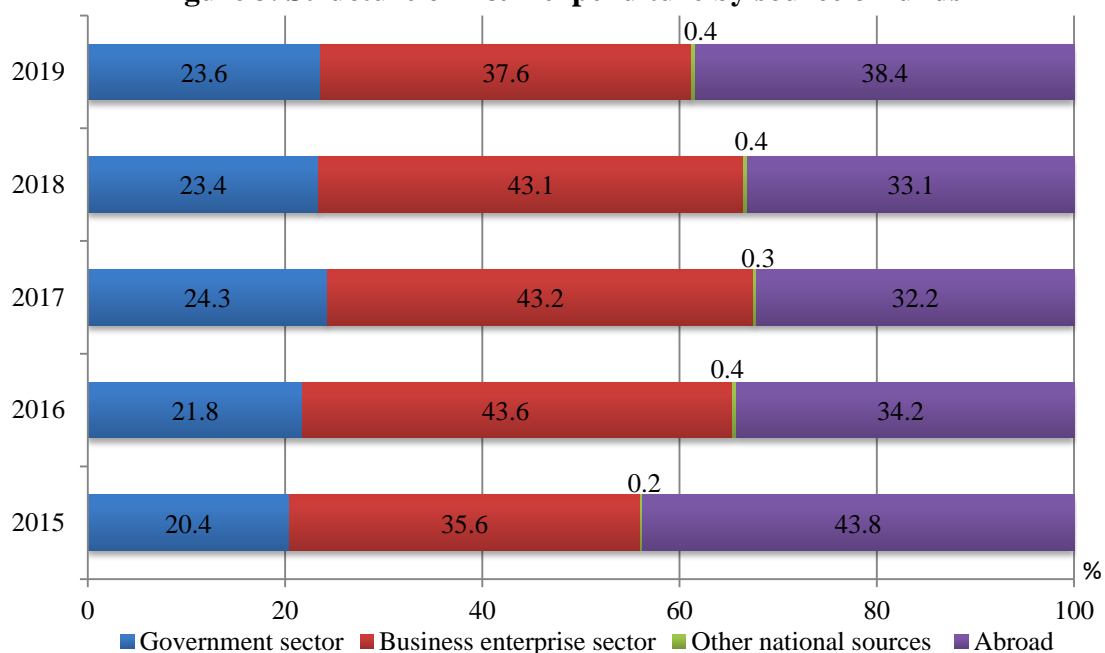
Business enterprise sector was the largest of the four institutional sectors of R&D performance with a share of 67.2% of the total R&D expenditure in 2019. It was followed by the government sector, which research institutes and organizations formed 24.9% of the total R&D expenditure. The spending on R&D by tertiary schools and university hospitals amounted to 7.3% and respectively by the non-profit organizations - 0.6% of total R&D expenditure.

Figure 2. R&D expenditure by institutional sectors



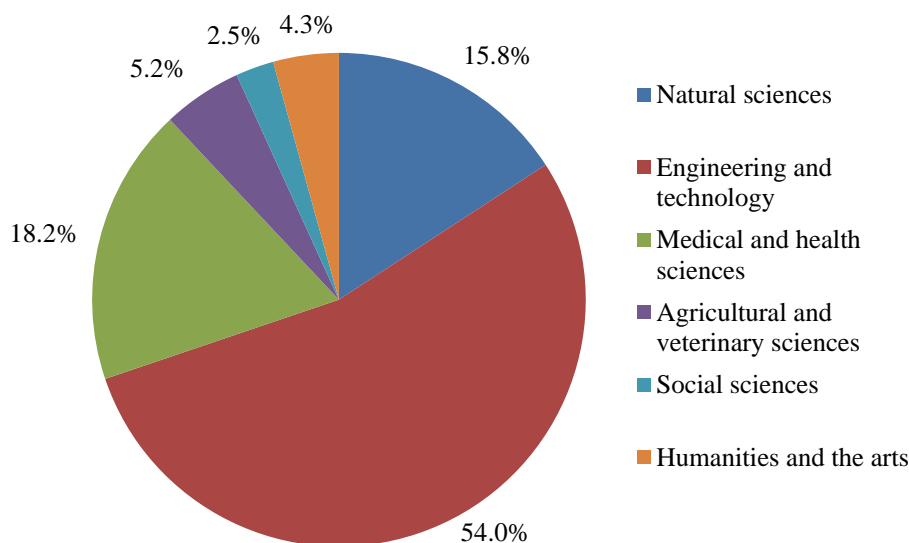
The R&D activity was financed from the state budget, businesses, other national sources and from abroad (Figure 3). In 2019, the largest was the share of foreign sources of funds for R&D - 38.4%. Business enterprise sector financed 37.6% of the total R&D expenditure, and the state budget - 23.6%.

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



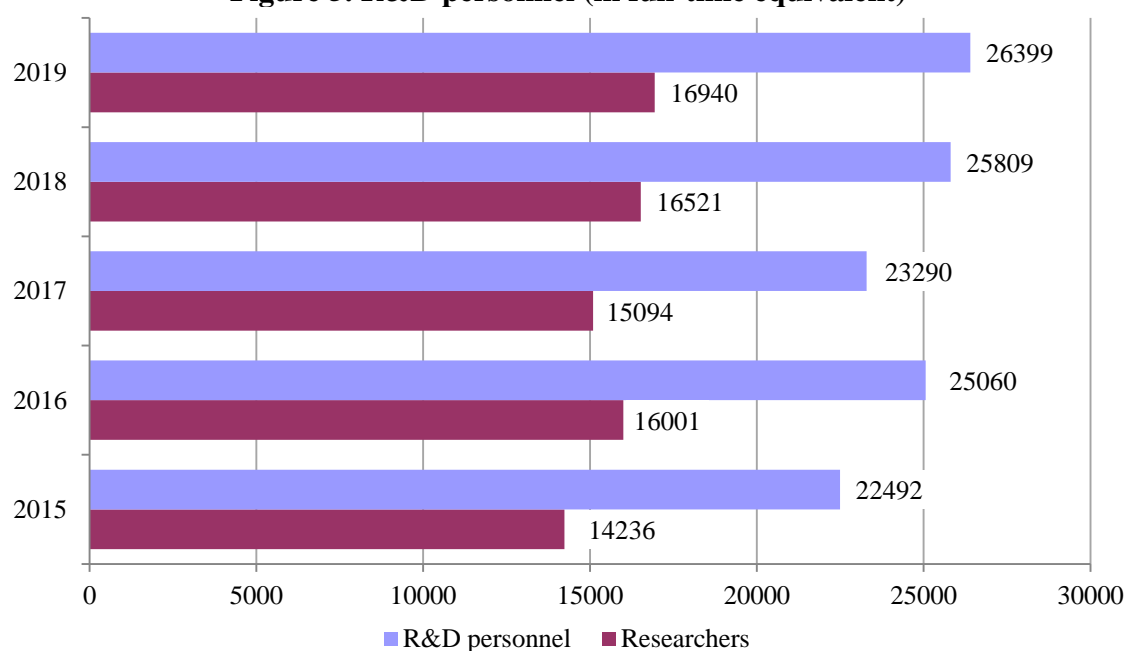
In the structure of R&D expenditure by fields of science in 2019, as in the previous year, the highest share belonged to the R&D expenditure in technical sciences - 54.0% or 541.1 million BGN, followed by medical and health sciences with a share of 18.2% (182.9 million BGN) and the natural sciences - 15.8% (157.9 million BGN).

Figure 4. Structure of R&D expenditure by fields of science, 2019



In 2019, the personnel employed with research and development activity amounted to 26 399 persons (in full-time equivalent), which was 2.3% more than the previous year (Figure 5). The share of women in total R&D personnel was 46.2%. The number of researchers in full-time equivalent was 16 940 persons, which was 2.5% more compared to 2018.

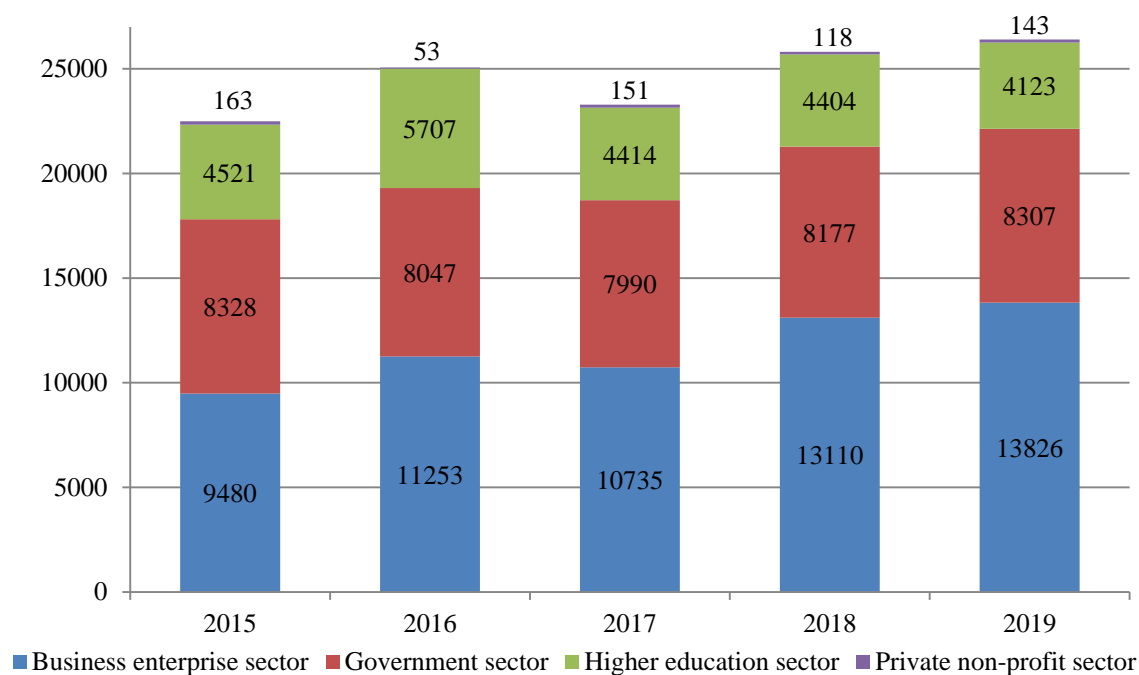
Figure 5. R&D personnel (in full-time equivalent)



In 2019, the structure of R&D personnel by qualification is characterized by increase of the share of persons employed with higher education - from 81.8% in 2018 to 82.2% in 2019.

In 2019, the main part of R&D personnel was concentrated in companies and research institutes in the business enterprise sector - 52.4% of the total R&D personnel (in full-time equivalent) or 13 826 persons. In organizations and institutions of the government sector 8 307 persons were involved in R&D activity, which constituted 31.5% of the total personnel engaged in R&D in 2019. In the higher education sector 4 123 persons were carrying out research and development, with a relative share of 15.6%.

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 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 on 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 firms, organizations and institutions whose primary activity is production of market goods and services (other than those included in Higher education sector);
- Government sector - comprises general administrations of central or state government which furnish, but do not sell 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 to 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 web site (<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).