



RESEARCH AND DEVELOPMENT ACTIVITY IN 2017 (PRELIMINARY DATA)

In 2017, the total amount of expenditure on research and development activity (R&D) was 760.2 million BGN, which was 3.5% more than the previous year.

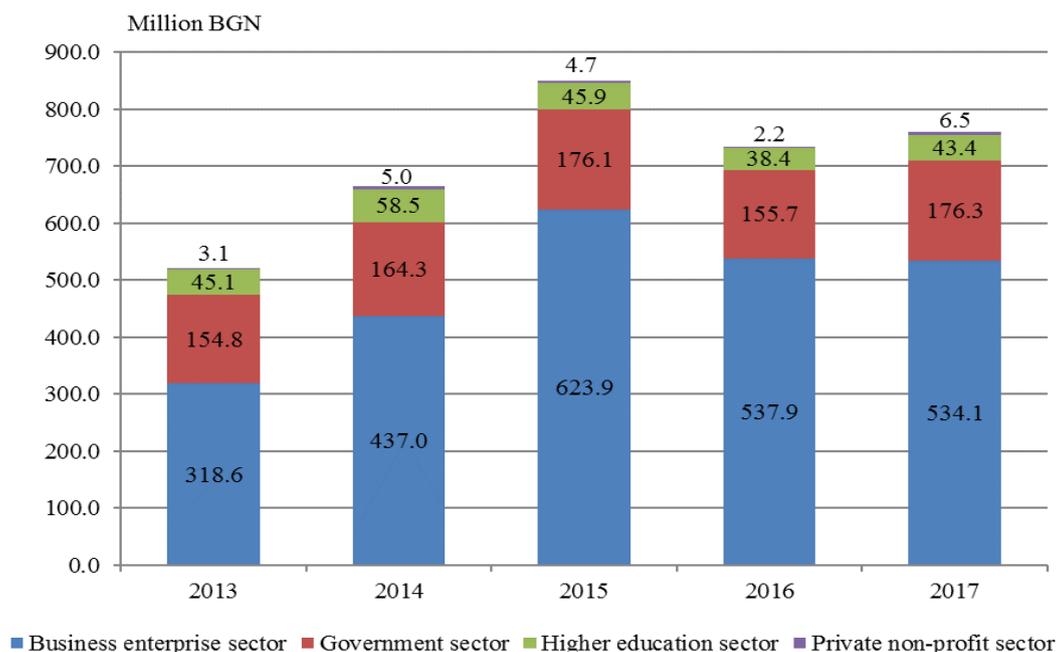
R&D intensity (R&D expenditure as % of GDP) decreased in comparison with the previous year - from 0.78% in 2016 to 0.75% in 2017 (Table 1).

1. R&D expenditure

	2013	2014	2015	2016	2017
R&D expenditure - million BGN	521.7	664.8	850.5	734.3	760.2
R&D expenditure as % of GDP	0.64	0.79	0.96	0.78	0.75

In 2017, the business enterprise sector was the largest of the four institutional sectors of R&D performance with a share of 70.3% of the total R&D expenditure. It was followed by the government sector, which research institutes and organizations formed 23.2% of the total R&D expenditure. The spending on R&D by tertiary schools and university hospitals amounted to 5.7% and respectively by the non-profit organizations - 0.8% of total R&D expenditure (Figure 1).

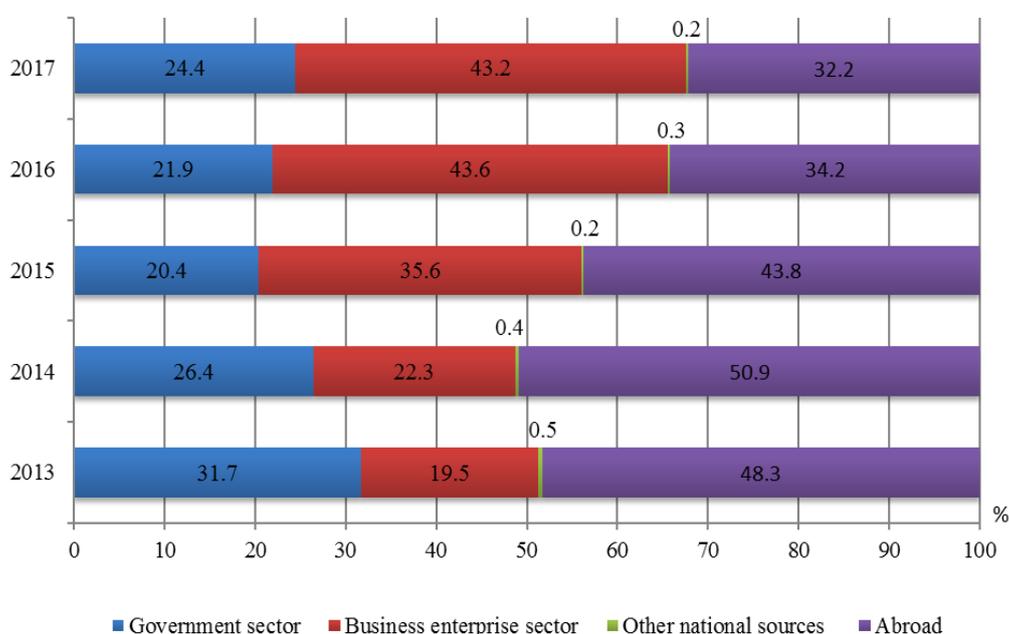
Figure 1. R&D expenditure by institutional sectors





The R&D activity was financed from the state budget, businesses, other national sources and from abroad (Figure 2). In 2017, the largest was the share of R&D funds coming from the business enterprise sector - 43.2%. They increased by 2.6% compared to the previous 2016 (from 320.2 million BGN to 328.5 million BGN). Compared to 2016, the funds from foreign sources for R&D decreased by 2.5% (from 251.0 million BGN to 244.7 million BGN).

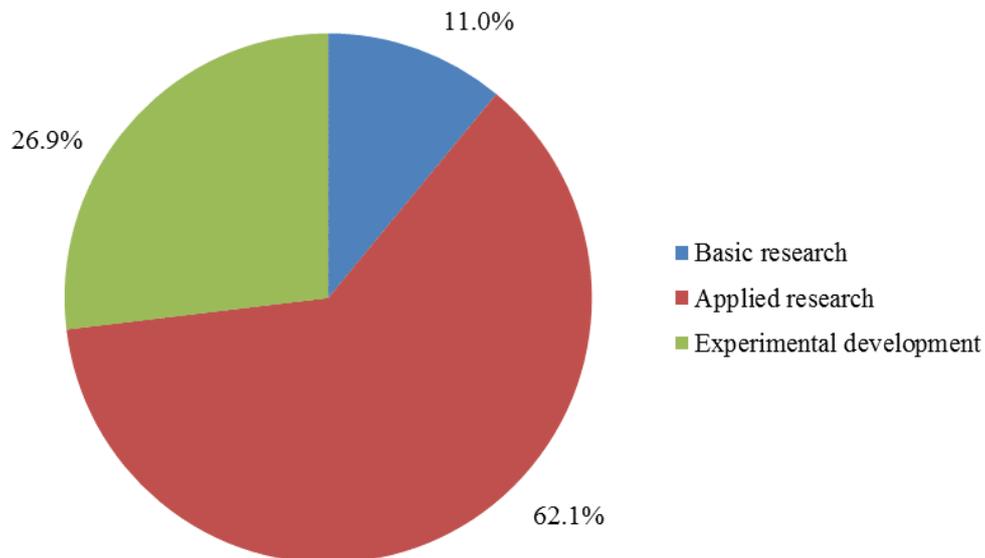
Figure 2. Structure of R&D expenditure by source of funds



In the structure of current R&D expenditure by type of research in 2017, as in the previous year, the highest share belonged to applied research - 62.1% (429.3 million BGN), followed by experimental development and basic research - with share of 26.9% (185.7 million BGN) and 11.0% (76.5 million BGN) respectively (Figure 3).



Figure 3. Structure of current R&D expenditure by type of R&D, 2017

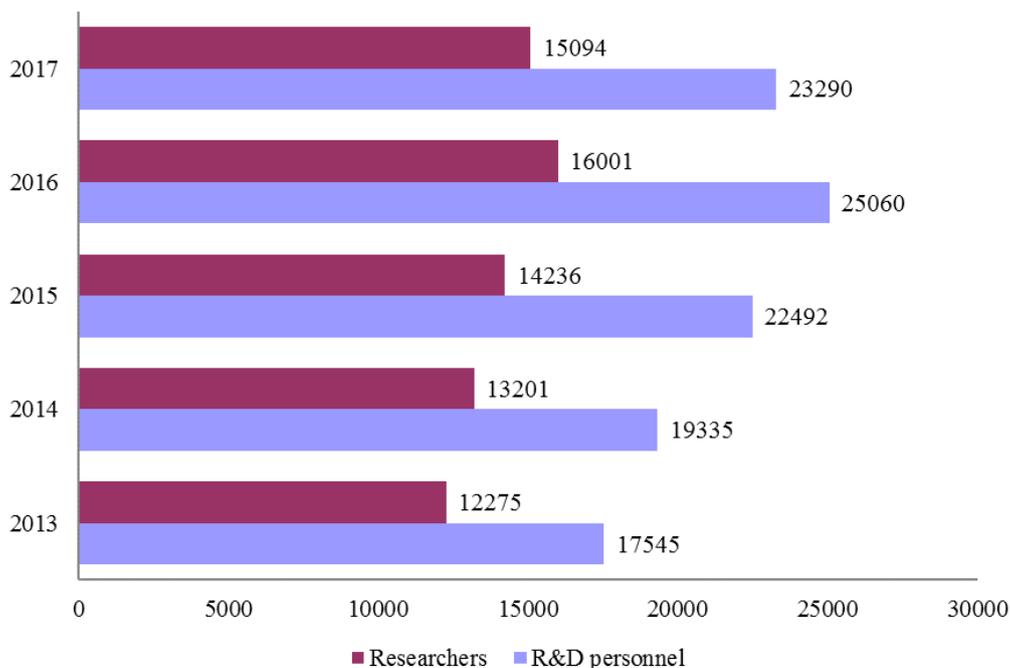


In 2017, the personnel employed with research and development activity amounted to 23 290 persons (in full-time equivalent), which was 7.1% less than the previous year (Figure 4). The share of women in total R&D personnel was 47.9%, as the difference in the level of employment between genders was 4.2 percentage points in favor of men. The number of researchers in full-time equivalent was 15 094 persons, which was 5.7% less compared to 2016.

As in 2016, the main part of R&D personnel was concentrated in companies and research institutes in the business enterprise sector - 46.1% of the total R&D personnel (in full-time equivalent) or 10 735 persons. In organizations and institutions of the government sector 7 990 persons were involved in R&D activity, which constituted 34.3% of the total personnel engaged in R&D in 2017. In the higher education sector 4 414 persons were engaged in research and development, with a relative share of 19.0%.

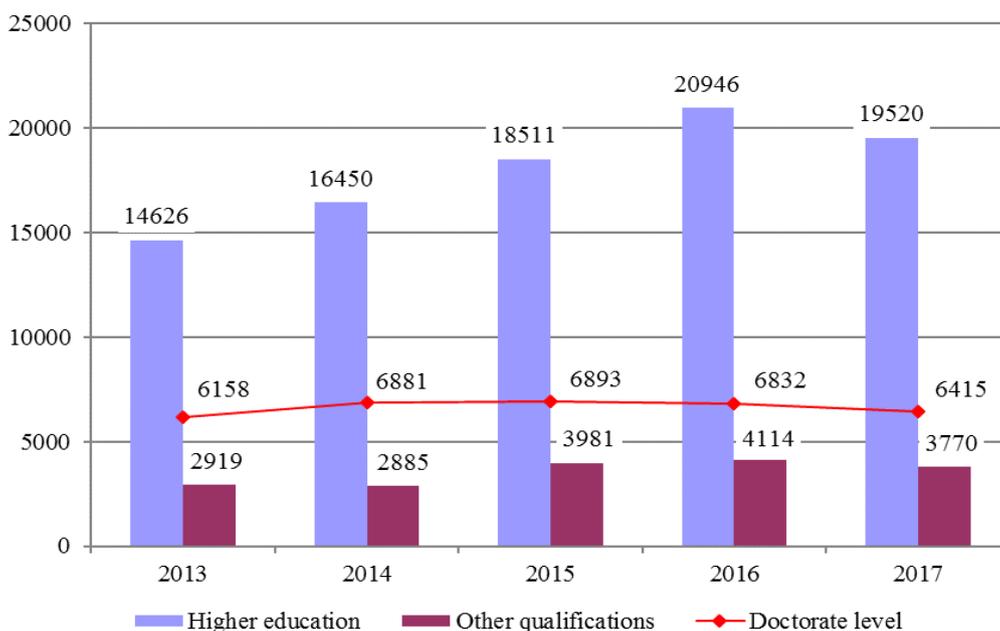


Figure 4. R&D personnel (in full-time equivalent)



In 2017, the structure of R&D personnel by qualification is characterized by increase of the share of persons employed with higher education - from 83.6% in 2016 to 83.8% in 2017 (Figure 5).

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





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 capital expenditure 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.