RESEARCH AND DEVELOPMENT ACTIVITY IN 2013 (PRELIMINARY DATA)

In 2013, the total amount of **expenditure on research and development activity (R&D)** was 521.2 million BGN which was 5.0% more than the previous year.

R&D intensity (R&D expenditure as % of GDP) is one of the key indicators for measuring progress of the European Union (EU) in achieving the targets of the new Europe 2020 strategy - a strategy for smart, sustainable and inclusive growth. Bulgarian national goal is to reach the 1.5% R&D intensity in 2020.

In 2013 the R&D intensity in Bulgaria increased in comparison with the previous year from 0.64% in 2012 to 0.67% in 2013 but it was still significantly below the average value of this indicator for the EU-27 (2.08% in 2012).

1. R&D expenditure

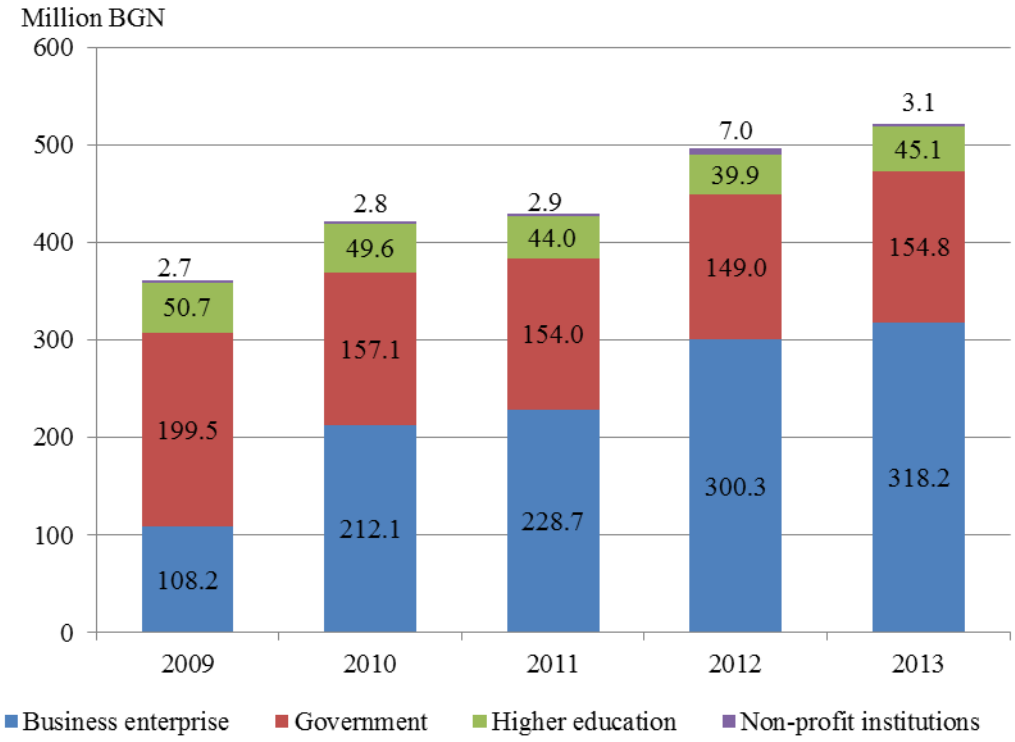
	2009	2010	2011	2012	2013
R&D expenditure in Bulgaria - million BGN	361.1	421.6	429.6	496.2	521.2
R&D expenditure as % of GDP					
Bulgaria	0.53	0.60	0.57	0.64	0.67
EU-27	2.01	2.01	2.05	2.08	.

„ . „ - data not available

Almost all of the growth in absolute value of the total R&D expenditure in 2013 compared to the previous year was due to the business enterprise sector where expenditure on R&D increased by 17.9 million BGN or 6.0%.

The business enterprise sector was the largest of the four main institutional sectors of R&D performance, accounting for 61.0% of total R&D expenditure. It was followed by the government sector and higher education sector with share of 29.7% and 8.7% respectively (Figure 1).

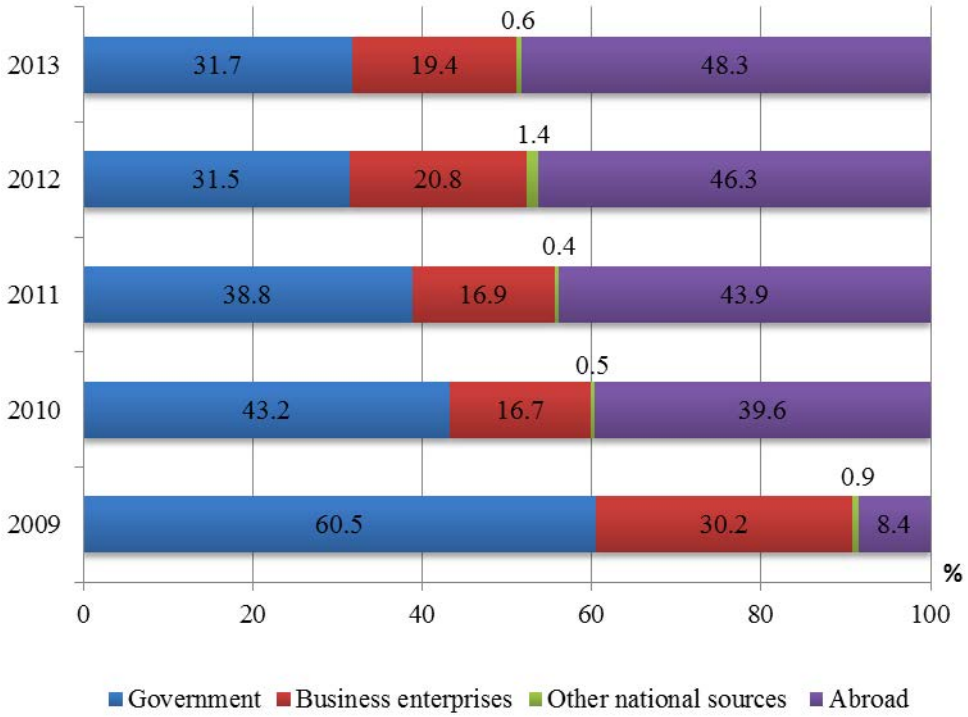
Figure 1. R&D expenditure by institutional sectors



The R&D activity was financed from the state budget, business, other national sources and from abroad. Foreign sources of funds continued to have the largest share in the R&D funding in Bulgaria - in 2013 it amounted to 48.3% of total R&D expenditure and increased by 2.0 percentage points compared to 2012. This was mainly driven by large volume of clinical trials which are carried out in Bulgaria but are funded by foreign companies.

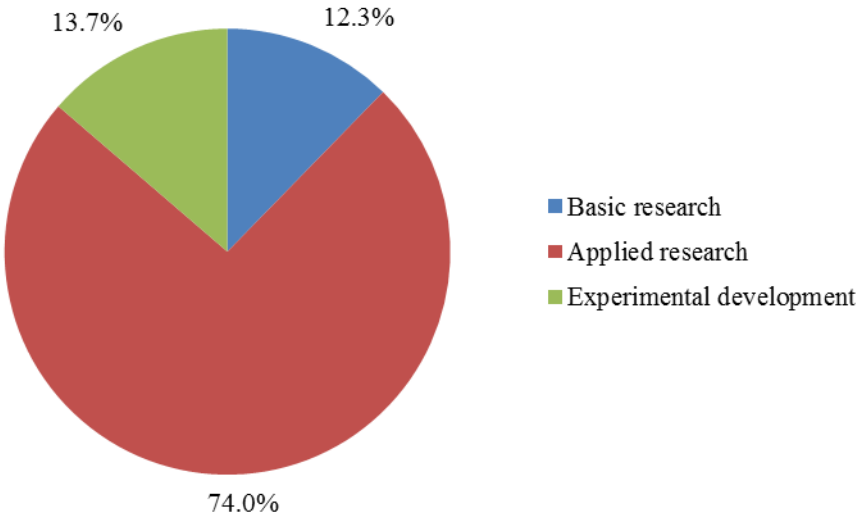
The next important sources of financing of R&D in 2013 were the government sector with a share of 31.7% which increased by 0.2 percentage points compared to 2012 and the business enterprise sector where it was reported a decrease of 1.4 percentage points and reached to 19.4% share of total R&D expenditure (Figure 2).

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



In the structure of current R&D expenditure by type of research in 2013, as in the previous year, the highest share belonged to applied research - 74.0% (356.3 million BGN), followed by experimental development and basic research - with share of 13.7% (66.2 million BGN) and 12.3% (59.4 million BGN) respectively (Figure 3).

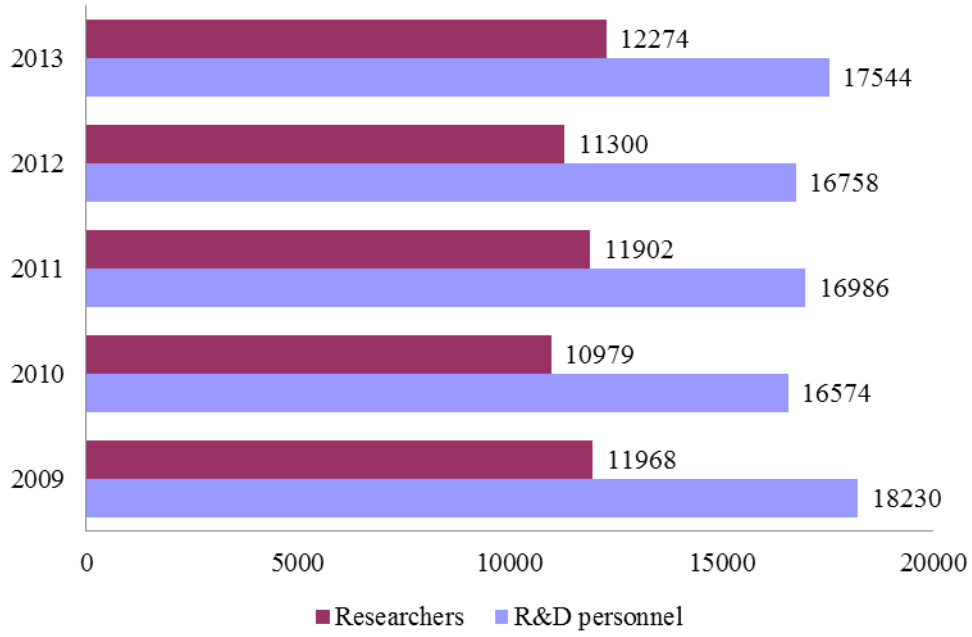
Figure 3. Structure of R&D expenditure by type of R&D, 2013



In 2013, the personnel employed with research and development activity amounted to 17 544 persons (in full-time equivalent) which was 4.7% more than in the previous year (Figure 4). The share of women in total R&D personnel was 52.5%, as the difference in the level of employment between genders was 5 percentage points in favor of women.

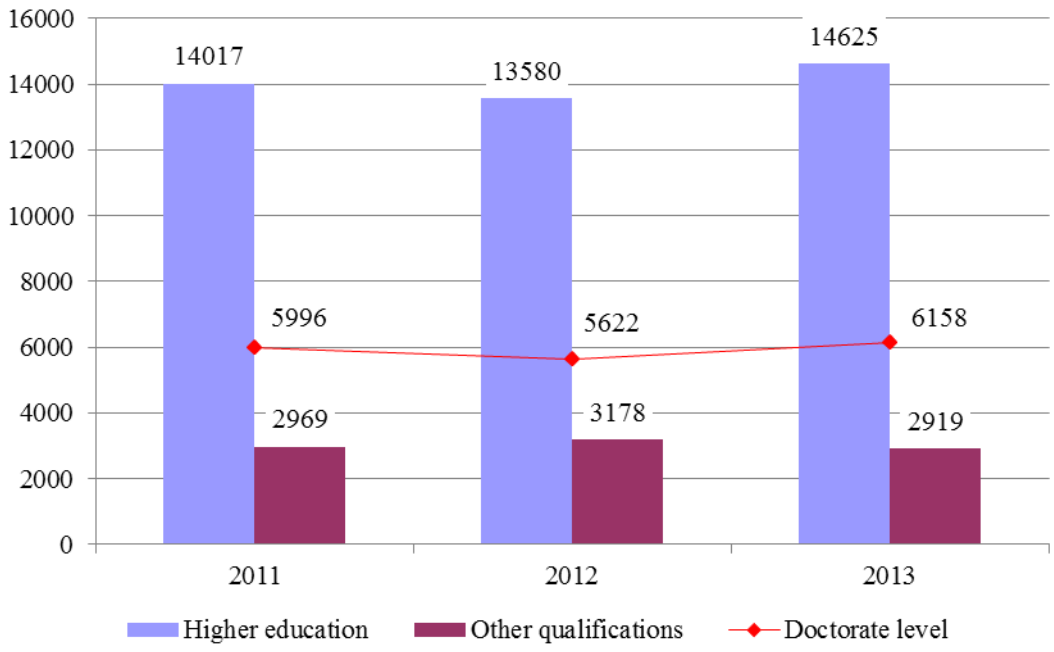
The main part of the scientific staff was concentrated in organizations and institutions in the government sector. In 2013, in the same sector 8 990 persons (in full time equivalent) was employed or 51.2% of the total R&D personnel. The personnel engaged with scientific research and development in higher education sector was considerably less - 4 517 persons and their relative share was 25.8%. In the business enterprise sector 3 852 persons were engaged with scientific activity which accounts for 22.0% of the total R&D personnel in 2013.

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



The researchers which are the most highly qualified category of scientific staff constituted 70.0% of total R&D personnel as their share increased compared to the previous year by 2.6 percentage points. In 2013, half of researchers hold a doctorate degree.

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



Methodological notes

Research and development activity (R&D) comprises any creative work undertaken on a systematic basis in order to increase the volume of knowledge, including knowledge of man, culture and society, and the use of this knowledge to devise new applications. 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 employed directly in R&D, as well as those providing direct services (R&D managers, administrators 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' (Proposed standard practice for surveys on research and experimental development - Frascati Manual, OECD, 2002), 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.