RESEARCH AND DEVELOPMENT ACTIVITY IN 2009[1]

(Preliminary data)

In 2009 the total amount of the **expenditure on research and development activity (R&D)**[2] is 361.1 million BGN which increases by 10.8% in comparison with the previous year and the annual growth tendency retains for the period of 2005 - 2009.

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.

In 2009 the R&D intensity in Bulgaria as compared to the previous year grows from 0.47% in 2008 to 0.53% in 2009, but still vastly lags behind than the average value of the same indicator for the total EU-27 countries (1.90% in 2008).

Table 1

R&D expenditure

	2005	2006	2007	2008	2009
R&D expenditure - million BGN	208.1	237.0	273.0	325.9	361.1
R&D expenditure as % of GDP	0.46	0.46	0.45	0.47	0.53

In 2009 the highest level of investments in scientific and technological development is seen in the government sector - 199.5 million BGN, followed by business enterprise sector - 108.2 million BGN, higher education sector - 50.7 million BGN and private non-profit sector - 2.7 million BGN.

During the period 2005 - 2009, in the structure of R&D expenditure by **institutional sectors**[3] tends to reduce the share of government sector (Bulgarian Academy of Sciences and Agricultural Academy are included) in favor of the increasing share of business enterprise sector. The decreasing share of government

[1] 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.

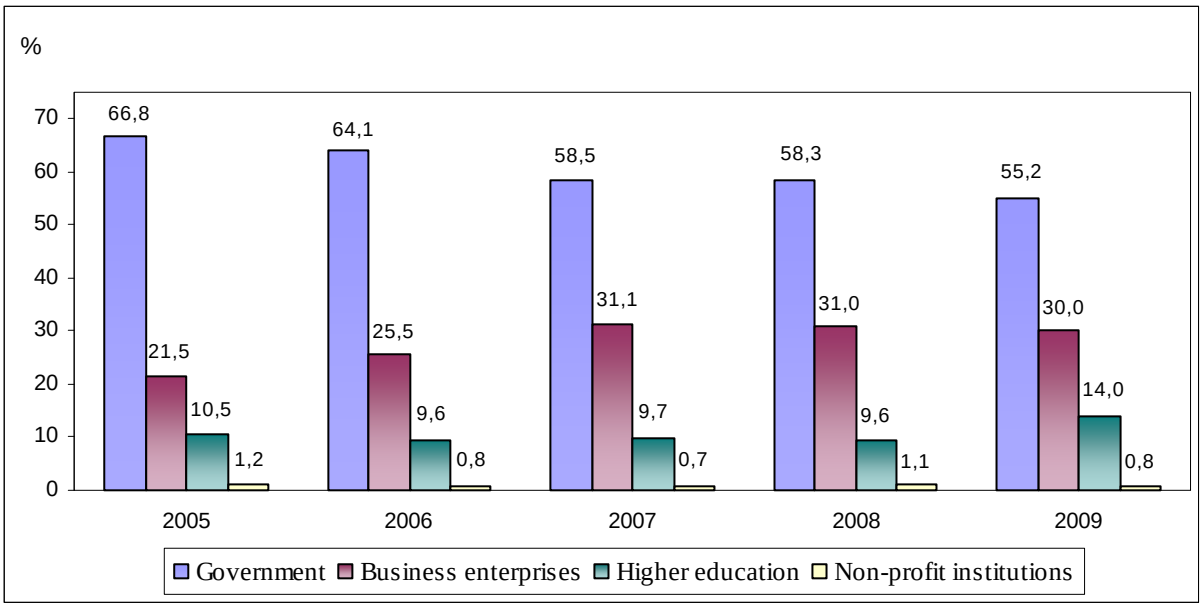
[2] The indicator "R&D expenditure" is defined as all expenditure for R&D performed within a statistical unit, whatever the source of funds. The R&D expenditure comprises current costs and capital expenditure on R&D.

[3] 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.

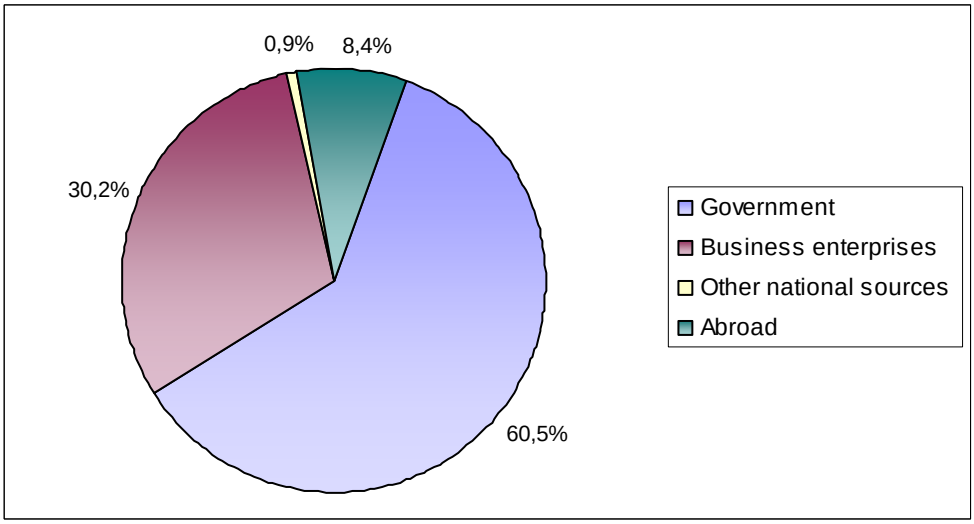
sector in the last year leads to increasing the share of the higher education sector - by 4.4 points compared to 2008.

Figure 1. Structure of R&D expenditure by institutional sectors



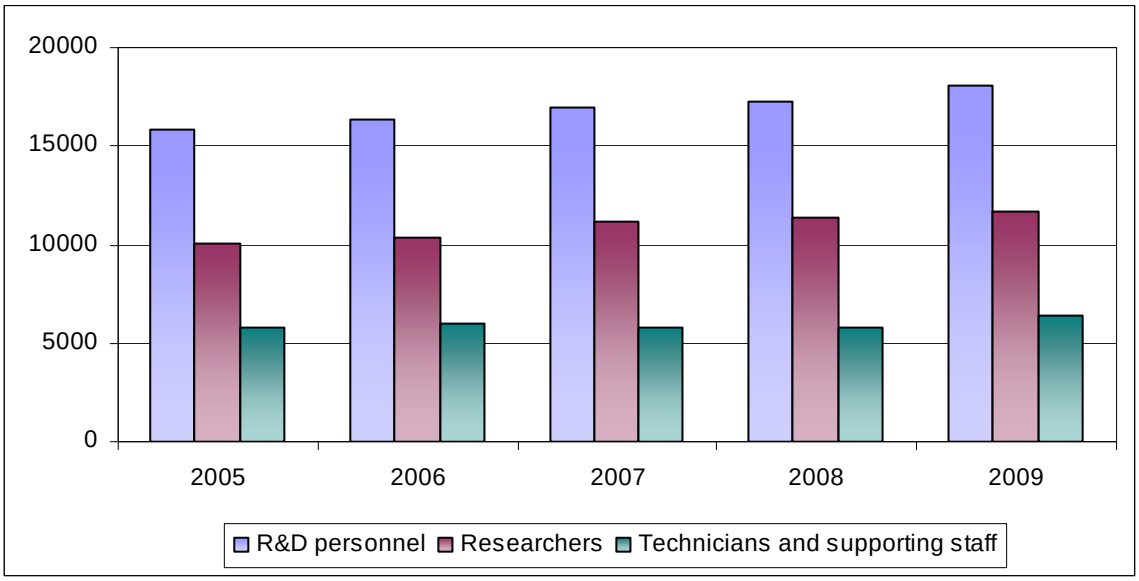
Financing of R&D activity is allocated by the government budget, business, and other national sources and from abroad. The foreign funds used for R&D activity cover governmental resources (another governments, European programs, international organizations etc.) and resources from foreign enterprises as well. In 2009 the government sector remains the biggest source of R&D financing by 60.5 %.

Figure 2. Structure of R&D expenditure by source of funds in 2009



In 2009 the **personnel employed with research and development activity**[4] are 18 230 persons (in full-time equivalent) which is 5.9% higher than the previous year. In 2009 the researchers which are the most highly qualified category of scientific staff, constitute 65.6% of total R&D personnel.

Figure 3. R&D personnel (in full-time equivalent)



The main part of the scientific staff is concentrates in the organizations and institutes in government sector where are spent most resources for R&D. In 2009 in the same sector are employed 9 467 persons (in full time equivalent), which forms 51.9% of the total R&D staff. The personnel engaged with scientific research and development in higher education sector is vastly less number - 5 367 persons, as their share is 29.5%. In 2009 there are 3 335 persons dealing with scientific activity in the business enterprise sector which comprise 18.3% of the total R&D personnel.

[4] 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 three categories - researchers, technicians and other personnel. Personnel in full-time equivalent (FTE) are calculated on the basis of working time spent on R&D activity during the reference year.