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# Mini Country Report/Bulgaria

**under Specific Contract for the Integration of INNO Policy  
TrendChart with ERAWATCH (2011-2012)**

## **Mini Country Report**

Thematic Report 2011 under Specific Contract for the Integration of  
INNO Policy TrendChart with ERAWATCH (2011-2012)

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# Preface

The European TrendChart on innovation is the longest running policy benchmarking tool at European level. Since its launch in 1999 it has produced annual reports on national innovation policy and governance, created a comprehensive database of national innovation policy measures and organised a series of policy benchmarking workshops. The databases of INNO Policy TrendChart and ERAWATCH have been merged and a joint inventory of research and innovation policy measures has been created by the European Commission with the aim of facilitating access to research and innovation policies information within Europe and beyond.

With a view to updating the innovation policy monitoring, the European Commission DG Enterprise and Industry commissioned a contract with the objective to provide an enhanced overview of innovation and research policy measures in Europe and to integrate the INNO Policy TrendChart with the complementary ERAWATCH platform. This contract is managed by the ERAWATCH Network asbl. (<http://www.erawatch-network.com>) coordinated by Technopolis Group (<http://www.technopolis-group.com>).

During each of the two years of this specific contract three reports will be produced to complement data collection and to update the research and innovation policy measures: a trend report on innovation policy in the EU, an overview report on innovation funding in the EU and an analytical thematic report (the selected theme for 2011 is demand-side innovation policies). To this end, the objective of the present mini country report is to furnish those three reports with country specific information.

# Executive Summary

The current level of innovation and competitiveness in Bulgaria is low. Nevertheless, there are ample opportunities for development in that area, as indicated by the national response to the Europe 2020 strategy on smart, sustainable and inclusive growth. With domestic spending on research and development (GERD) at 0.5% of GDP, funding for science and innovation remains below the levels necessary for improving the innovation potential of the national economy in the short to mid-term. The Bulgarian government is committed to change that by setting itself the ambitious goal of increasing R&D spending to 1.5% of GDP by 2020 as per the National Reform Programme 2011 – 2015.

Though R&D funding has stagnated for the past decade, there have been some positive developments in R&D and innovation indicators. These include:

- a continuous increase in funding for R&D in absolute terms – from BGN208m in 2005 to BGN361m in 2009;
- a small, yet increasing share of support for R&D from the business sector as opposed to the state – business still provides less than a third of total R&D funding;
- a more evenly spread-out funding through the different NUTS II regions in the country.

These positive developments in R&D indicators have been primarily the result of market developments – the overall improvement of business conditions and buoyant economic growth, rather than targeted innovation and research policies. Thus, these positive developments can prove temporary in the absence of active measures for improving public innovation policy.

Major challenges to the development of innovation in Bulgaria are:

- the fragmentary nature of changes in public policy – because of fluctuating funding streams public policies tend to resemble project cases without an overall plan and/or vision;
- the inconsistency in funding for the different innovation and science fields and the related lack of continuity of policies; and
- the weak institutionalisation of policy measures, e.g. because the National Innovation Fund had not been incorporated as an independent legal entity, it was deprived of funding in 2009 and 2010 and did not provide support to new enterprises in these two crisis years.

Innovation policy in Bulgaria is in its infancy, consequently the innovation structure of the country is not well developed. This results in separate measures being implemented by separate institutions, and no differentiation being made between demand- and supply-driven innovation. As at 2011 Bulgaria does not have any demand-side innovation policy. At this stage, the governance challenge for Bulgaria is to define its innovation priorities and develop consistent innovation policies in the first place. There are signs that the implementation of the EU policy-making and funding cycles, related for example to the Europe 2020 strategy, has created momentum for more concerted and coordinated efforts in developing the country's national innovation system. In 2011 the Bulgarian government adopted the National Strategy of Scientific Research to 2020, which for the first time involved coordination between the ministry of science and the ministry of economy and has incorporated important innovation policy elements. Furthermore, the Ministry of Economy, Energy and Tourism has pledged to introduce a new law on innovation in 2011-2012.



## 1. Innovation policy trends

### 1.1 Trends and key challenges for innovation policy

There were several changes in the research and innovation policy of Bulgaria between 2009 and 2011:

- The Bulgarian government declared its intention to close the innovation gap with the EU average by approving a national target for R&D expenditure. An ambitious goal was set in the National Reform Programme (2010-2013) to reach investments in R&D of 1.5% of GDP by 2020 (from current levels of about 0.5%) and to improve the business environment.
- In July 2011, the Bulgarian Ministry of Economy, Energy and Tourism announced the drafting of a Law on Innovation. It is expected that the draft law will enter inter-ministerial consultations and the Bulgarian parliament for approval in the autumn of 2011. The law envisages the institutionalisation of the National Innovation Fund (created in 2005) - at present, the fund is a measure administered by the Bulgarian SMEs Promotion Agency, whereas the law envisions it as a separate legal entity.
- In October 2010, the Bulgarian Parliament adopted a law amending and supplementing the [Law on Scientific Research Promotion](#).<sup>1</sup> The Law (1) provides for an independent national and international assessment of public funds' spending on strategic research areas; (2) encourages the establishment of large scientific and research centres; and (3) supports the implementation of monitoring and evaluation projects funded through the [National Science Fund](#) (NSF). The new texts in the law include an increased emphasis on programme-oriented competitive research funding.
- A new [National Strategy of Scientific Research to 2020](#)<sup>2</sup> was proposed and adopted by the government in June 2011, and is currently under review by the parliament.

Positive developments in R&D and innovation indicators include:

- a continuous increase in funding for R&D and innovation in absolute terms;
- a small, yet increasing share of support for R&D from business vs. the state sector;
- a more evenly spread-out funding through different regions in the country.

Yet, these positive developments are primarily a result of market forces rather than targeted innovation and research policies. Moreover, in the absence of tangible measures to improve public innovation policy, these positive developments might have been cancelled out by the current economic and financial crisis.

In 2011, Bulgaria's competitiveness and innovation-driven development face a number of challenges:

- An **outdated National Innovation Strategy** (dating from 2004) which is not being implemented in practice. The main financing tool of the National Innovation Strategy, the [National Innovation Fund](#), has not financed any new projects in 2009 – 2010 due to a lack of funding and an on-going debate on its restructuring. Plans to merge the NIF with the NSF were not carried out. Furthermore, in an attempt to reinvigorate the national innovation policy, the Ministry of Economy, Energy and Tourism proposed drafting a Law on Innovation, and elaborated a

<sup>1</sup> <http://cordis.europa.eu/erawatch/index.cfm?fuseaction=policy.document&UUID=7D87AA96-DCA8-5978-F10CB8E90F5C251E&hwd=Scientific%20Research%20Promotion>

<sup>2</sup> It is expected that the Strategy will be reviewed by the Parliament by the end of June 2011. The text of the strategy is available at:

[http://www.mon.bg/opencms/export/sites/mon/en/top\\_menu/science/national\\_research\\_strategy-2020.pdf](http://www.mon.bg/opencms/export/sites/mon/en/top_menu/science/national_research_strategy-2020.pdf)

Vision for the Development of Bulgaria<sup>3</sup> as part of the Europe 2020 Strategy. These developments are yet to produce any tangible innovation policy results.

- The adopted Law for Amendment and Supplement of the [Law on Scientific Research Promotion](#)<sup>4</sup> is at odds with the decrease in public support for research in 2010. It remains to be seen whether these amendments of the law will have any positive effect on R&D and innovation expenditure in the country.
- Although Bulgarian policy makers begin to understand better the role of innovation as a prerequisite for sustainable growth, there are no mechanisms yet in place for the practical implementation of recent policy changes/amendments. There is also no adequate assessment and monitoring mechanism for discerning the impact from unsuccessful policies.
- Due to the negative impact of the crisis on the economy, public expenditures on R&D were reduced in 2010. Although there are no official data available yet, it is highly likely that private R&D investment has been reduced sharply in the crisis years as well.
- The level of public funding is critically low, and investments in science and innovation during the past few years have been below the potential of the national economy (and significantly lower than the EU average). In 2011, the National Science Fund is practically the only working national public financial instrument despite fluctuations in funding and notably sluggish procedures.<sup>5</sup> In effect, most research and innovation investment has been channelled through EU funds.
- The budget of the Bulgarian Academy of Sciences, the biggest public R&D organisation, saw a roughly 40% cut of its initially approved state budget for 2010. Moreover, budget subsidies for R&D in the state universities were completely suspended in the second half of 2010.
- The administrative capacity for utilising available EU funding, such as the Temporary Union Framework for State Aid Measures to Support Access to Finance in the Current Crisis,<sup>6</sup> is inadequate. Support from OP Competitiveness for innovative start-up companies, commercialisation of innovative products, and establishment of technology parks has been very slow to pick up - only 11 projects have been completed by 2009.<sup>7</sup>
- Measuring the actual level of innovation and assessing recent trends is challenging, as the National Statistical Institute provides data with a few years time lag, therefore making it difficult to develop successive and effective innovation policies. The time lag allows for no current dynamic picture of successful developments or failing areas of innovative activity. The only systematic sources of information on the state and dynamics of the Bulgarian innovation system are the European Commission's TrendChart and ERAWATCH services, EC's Innovation Union Scoreboard, as well as the Applied Research and Communications Fund's annual *Innovation.bg* reports. The lack of effective enforcement of policies on intellectual property rights in Bulgaria results in most inventions not being patented by their inventors. Thus national patent data are not a reliable measure for innovation in Bulgaria.
- Existing patent data show that R&D institutions and universities do not actively cooperate with companies (e.g., one jointly owned patent in 2006-2008).<sup>8</sup> Moreover, specific policy measures aimed at promoting public-private knowledge

<sup>3</sup> *National Reform Programme (2011-2015) in implementation of "Europe 2020" Strategy* ([http://ec.europa.eu/europe2020/pdf/nrp/nrp\\_bulgaria\\_en.pdf](http://ec.europa.eu/europe2020/pdf/nrp/nrp_bulgaria_en.pdf))

<sup>4</sup> <http://cordis.europa.eu/erawatch/index.cfm?fuseaction=policy.document&UUID=7D87AA96-DCA8-5978-F10CB8E90F5C251E&hwd=Scientific%20Research%20Promotion>

<sup>5</sup> Applied Research and Communications Fund, 2011, *Innovation.bg 2011*: <http://www.arcfund.net/arcartShow.php?id=15609>.

<sup>6</sup> Communication of the Commission (2011/C 6/05) *Temporary Union framework for State aid measures to support access to finance in the current financial and economic crisis*.

<sup>7</sup> As reported in the Annual Implementation Report of the OP.

<sup>8</sup> ERAWATCH, Country Reports 2010: Bulgaria.



transfer are hard to identify. There are no specific policy measures for the promotion of spin-offs and, while there are no formal restrictions on the mobility of research staff between the public and the private sector, examples of such mobility are rare and often related to moonlighting in the private sector, since most of the research units are state funded. The majority of Bulgarian business enterprises do not have research units, thus are not attracting research staff from the public sector. Collaboration between research institutions and SMEs often remains “hidden”: as a result of lacking tax and other incentives, neither business enterprises, nor public R&D units commonly officially report their R&D activities.

- The country experiences a shortage of qualified human resources, as reflected in the fact that Bulgaria scores lower than the EU average on the availability of a highly qualified and educated workforce. A decreasing number of young Bulgarians choose science and technology as a career (i.e. in 2009 the proportion of members of the economically active population with a science and technology major was 32.2% in Bulgaria, lower than the EU-27 average of 40.1%).<sup>9</sup>

Table 1 An Overview of Policy Trends

	<b>Policy Changes</b>	<b>Actual Implementation</b>
<b>Research policy</b>	Enacted Law amending and supplementing the Law on Scientific Research Promotion provides for the establishment of large research centres and better functioning of the National Science Fund.	As the crisis has negatively affected the economy, these changes came at a time when the Bulgarian government cut public spending on R&D and innovation. Hence, so far they remain primarily good intentions without actual implementation.
<b>Innovation policy</b>	A national goal for the R&D expenditures has been set for 2020: 1.5% of GDP. Adopting a national R&D goal has been a major breakthrough and demonstrates political will and determination for change.	No actual change can be reported so far. The National Innovation Strategy has not been updated while the National Innovation Fund has ceased operation in 2009 – 2010 due to lack of budget funding.
<b>Education policy</b>	Academic career promotion has been reformed through the adoption of a new Law on the Development of Academic Staff. A university rating system was introduced to rank higher education institutions.	Policy changes remain largely on paper, and their practical implementation is forthcoming. Public financing for education was reduced in 2010.
<b>Other policies</b>	Both 2010 (actual) and 2011 (planned) budgets envisage a cut in resources for R&D, innovation, and education. Delays in the absorption of European funds related to science and innovation persist. This could change with the introduction of guarantee, mezzanine and venture financing vehicles through OP Development of the Competitiveness of the Bulgarian Economy. <sup>10</sup>	Actual public research, education and innovation budgets may differ as more funding is released throughout 2011 with the easing of the adverse impact of the global economic crisis on the state budget. There are continuous delays in the implementation of OPs, including: <ul style="list-style-type: none"> <li>• delays in payments to businesses by state and regional authorities;</li> <li>• insufficient public financing for R&amp;D and innovation;</li> <li>• reports that beneficiaries experience difficulties in securing co-financing.</li> </ul>

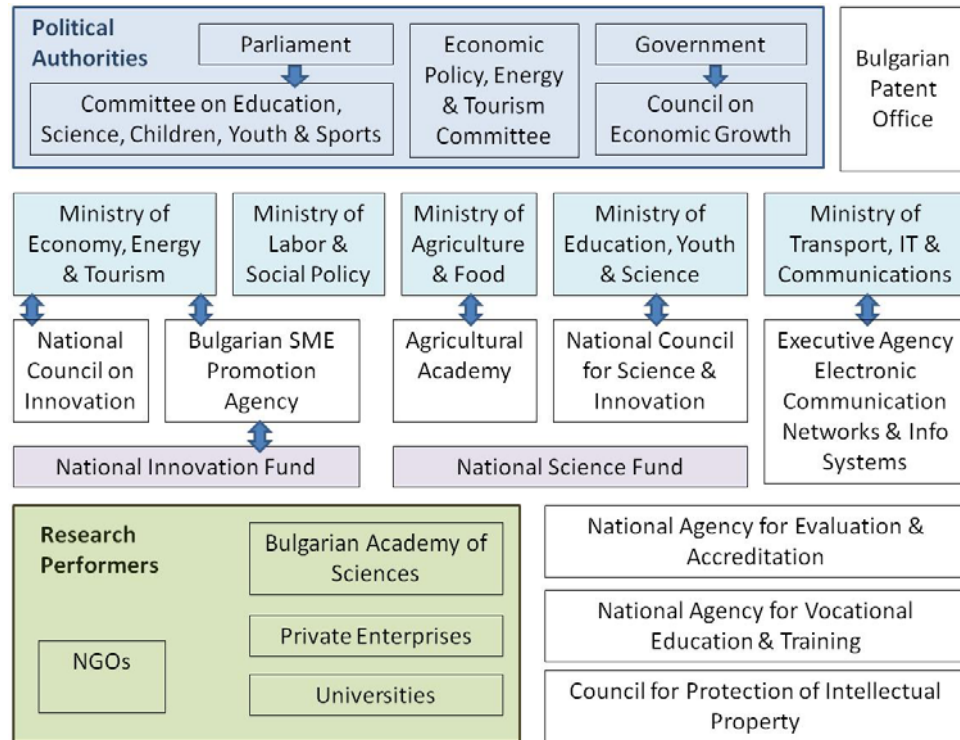
## 1.2 Innovation governance

The Bulgarian governance structure for innovation has remained static since the 1990s. Yet, the newly set national goal for R&D investments to reach 1.5% of GDP by 2020 is a testimony to some change in priority setting by attributing a growing priority to innovation. To that end, the latest National Scientific Strategy contains innovation goals and measures, which aim to achieve the newly set goal for investments in R&D and innovation.

<sup>9</sup> According to 2009 data from Eurostat.

<sup>10</sup> Hereafter referred to as OP Competitiveness.  
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Figure 1 Bulgaria: Governance Structure for Innovation



Source: Applied Research and Communications Fund, 2011.

There are no notable changes in the established framework for developing innovation capacity in the country between 2009 and 2011. In Bulgaria, the system supporting research and innovation is centrally coordinated and financed at a national level, with no regional dimension. There is a visible split between bodies responsible for research and education policies, and those in charge of innovation. This split is evident throughout the system and is a major cause for the lack of coordination and silo thinking. The highest policy-making bodies for research and innovation are the Standing Committee on Education, Science, Children, Youth and Sports and the Standing Committee on Economic Policy, Energy and Tourism at the National Assembly. Yet, in practice, national research and innovation policies are designed and carried out by the [Ministry of Education, Youth and Science](#) and the [Ministry of Economy, Energy and Tourism](#). In addition, the Council of Ministers endorses, among other things, research and innovation-related strategic documents. There are a number of consultative councils at the different ministries and at the Council of Ministers that have varying degrees of impact on the national research and innovation policies (e.g., the National Council on Innovation chaired by the Minister of Economy, Energy and Tourism, the National Council on Science and Innovation chaired by the Minister of Education, Youth and Science, the Council on the Protection of Intellectual Property Rights chaired by the Minister of Culture, etc.)

Policy-making and policy implementation are divided between various ministries and different governmental agencies reporting to the ministries. There is a lack of coordination and consistency between main policy documents concerning R&D and innovation, such as the National Reform Programme 2011-2015<sup>11</sup>, the [National Innovation Strategy](#), Regional Plans for Development and Regional Innovation Strategies, the [Law on Scientific Research Promotion](#), the [Law on Higher Education](#), the [Law for the Bulgarian Academy of Sciences](#), etc. Moreover, as these documents have been prepared under different socio-economic and political circumstances, they tend to include a random selection of priorities, lacking an overall thematic focus for national R&D and innovation policies, and obstructing a meaningful financial

<sup>11</sup> [http://ec.europa.eu/europe2020/pdf/nrp/nrp\\_bulgaria\\_en.pdf](http://ec.europa.eu/europe2020/pdf/nrp/nrp_bulgaria_en.pdf)

planning process. With the introduction of the different European planning documents related to EU funds' absorption and the coordination of EU policies, there has been an improvement in the process of strategic policy planning. However, this needs to be followed up by an adequate process of updating related legislation and policy implementation action plans.

The Bulgarian innovation system and its governance structure are still dominated by the public sector. Dynamic post 1990s reforms in the private sector (privatisation, deregulation, liberalisation, etc.) have resulted in a severance of the links between industry and science. While the former has transformed into private property and numerous new SMEs have emerged, the latter has remained dependent on government control and funding. The bulk of state funding for science is taken up by public institutions, such as the Bulgarian Academy of Sciences and the Agricultural Academy, as well as by universities, which leaves little room for supporting research and innovation in the private sector. Meanwhile, the private sector R&D and innovation structure remains immature. The average size of the Bulgarian enterprise is far smaller than that of its European counterpart, which leaves them strapped for capital, including for innovation and R&D.

Main innovation policy-making bodies include:

- The [Ministry of Economy, Energy and Tourism](#) is responsible for the development and implementation of the national innovation policy. It also manages OP Competitiveness;
- The [Ministry of Education, Youth and Science](#), defining the national education and science priorities and responsible for the development of the research framework, including the identification of innovation and research priorities. It prepares and submits to the Parliament all major research and education policy documents;
- The [Ministry of Labour and Social Policy](#) is involved in various programmes encouraging entrepreneurship in the context of the National Employment Action Plans. It manages OP Human Resources;
- The [Ministry of Agriculture and Food](#) leads policies related to science and innovation in the agricultural sector;
- The [Ministry of Transport, Information Technology and Communications](#) is responsible for the development of the national policy on information and communication technologies and the e-government.

Executive bodies (i.e. main bodies managing the implementation of policies) include:

- The [Bulgarian Small and Medium-sized Enterprises Promotion Agency](#) (under MEET) that manages information and consulting services, supports innovative projects and new technologies, assists Bulgarian companies in entering foreign markets, and maintains training and know-how transfer through international projects with its four specialised departments.<sup>12</sup> The Agency's services are intended to meet the information and consultation needs of Bulgarian businesses on national and international legal regulations, international agreements, banking/crediting and taxation, business supporting programmes, etc. The Agency is also mandated with the operation of the National Innovation Fund. The Fund has not supported any new projects in 2009 and 2010 due to insufficient funding;
- The Bulgarian Patent Office<sup>13</sup> is an executive body with 120 employees, which is entrusted with the protection of intellectual property rights in Bulgaria.

Other stakeholders in the innovation policy domain include private sector associations and business organisations, as well as non-profit organisations (NGOs). Stakeholders' involvement in the policy-making process usually happens through their participation in different consultative bodies such as: the National Council for Scientific Research or

<sup>12</sup> <http://www.sme.government.bg/IANMSP/>

<sup>13</sup> <http://www.bpo.bg/>

the National Council for Innovation, or some tripartite advisory bodies including industry, civil society, and the government. Yet, the participation of the private sector and civil society is notably limited in most advisory bodies. Government representatives usually hold the majority of votes in decision-making.

### 1.3 Recent changes in the innovation policy mix

There have not been any notable changes in the innovation policy mix in Bulgaria between 2009 and 2011. As a general rule, after the introduction of the Currency Board in the country in 1997, Bulgaria has relied primarily on public expenditure, and not public revenues, to promote different policies, including research and innovation. Hence, there is a general reluctance with respect to introducing tax relief for R&D and innovation in Bulgaria. Limited tax relief for R&D activities is provided by the Law on Corporate Income Tax, yet few firms have benefited from its provisions, as they do not favour in-house longer-term R&D activities. In addition, certain goods are exempt from customs import duties if they are of “scientific nature” and are exclusively used for non-commercial purposes.<sup>14</sup>

There has been no funding allocated for the National Innovation Fund in 2009 and 2010. This led to a practical suspension of the Fund’s activities. In 2011, the Ministry of Economy, Energy and Tourism has announced that it has secured BGN5m for the functioning of the fund from central budget savings. The funds will be available to companies in the autumn of 2011. They will cover payments due for the completion of already approved projects.

A look at the separate programmes and measures aimed at supporting R&D and innovation reveals a few developments. Some universities, notably the University of Food Technologies in Plovdiv and the Medical University in Sofia, have become more active in promoting scientific and innovative activities. In 2009 alone, there were 18 completed science and technology research projects at the University of Food Technologies in Plovdiv. The University also organises an annual International Science Conference, and maintains centres for skill and qualification advancement, knowledge exchange between universities, and a lab on food quality and safety (opened in December 2009). The Medical University in Sofia has a tradition of financing research projects through grants, funds competitions for scientific development, and increasingly participates in national calls and competitions on scientific research and the policy-making process related to R&D and innovation. The University has placed innovation “reactive to social needs” and increased competitiveness in its mission.

Due to a reduction of the National Science Fund’s budget in 2011 (currently about BGN35m), and due to the excessive funding obligations of the Fund to already approved projects,<sup>15</sup> funding for the second phase of projects started in 2009 and 2010 will generally not exceed 50% of the initially granted allowances. The situation was similar in 2010. Consequently, a number of support measures and programmes were negatively affected, while on-going projects were significantly downsized or abandoned altogether. Funding for most projects under the measure Development of the Research Infrastructure has been significantly reduced. The projects approved for financing by the programme in 2009 were 14 (8 of which from universities and 5 from BAS). Similarly, funding for most projects under the support measure Establishment of Centres of Excellence has been significantly reduced. Advance payments for most projects approved in 2009 were significantly delayed to March through May 2010. The Ideas support programme<sup>16</sup> was also affected by NSF’s budget cuts, reducing its funding for projects and experiencing notable delays in advance payments. In 2009, the measure included 40 projects approved for funding (16 from universities and 18 from BAS). Larger scale measures, like the Promotion of Scientific Research in

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<sup>14</sup> Customs Regulation 1186/2009.

<sup>15</sup> Currently, there is no access to the Fund’s public database of approved projects, which makes a proper assessment difficult. A new database is in the process of being created.

<sup>16</sup> [http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country\\_pages/bg/supportmeasure/support\\_mig\\_0013?searchType=simple&sort=&action=search&matchesPerPage=20&orden=LastUpdate&query=&displayPages=10&reverse=true&country=bg&searchPage=2&index=Erawatch+Online+EN&tab=template](http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/bg/supportmeasure/support_mig_0013?searchType=simple&sort=&action=search&matchesPerPage=20&orden=LastUpdate&query=&displayPages=10&reverse=true&country=bg&searchPage=2&index=Erawatch+Online+EN&tab=template)

Universities, with 103 projects approved for financing<sup>17</sup> in 2010, also seem likely to suffer from financing shortages. This will further delay the development of research and innovation capacity at Bulgarian universities. Despite difficulties in budget funding, the MEYS continued sponsoring the Young Talents competition. The most current (2011) 13th National Young Talents Competition aided the following results: 1st place and BGN1,000 for the project DriveFreez – Driving Simulator, 2nd place and BGN900 for a project related to “convex sets in Euclidean space”, and 3rd place and BGN800 for a project in geometry related to “isogonal triangles”. All winning projects are also automatically eligible for participation at the European Young Talents Competition in Finland in September 2011.

While numerous, the above measures are small in scale, rendering them unlikely to significantly affect the R&D and innovation performance of the country in the coming years. In addition, persistent funding and institutional uncertainties as to the future of the National Innovation Fund and the National Science Fund render their impact even smaller. As support measures and innovation policies remain underfunded and isolated, it is hard to identify any tendencies or changes in their impact on target groups.

Public sector innovation mostly materialises as an introduction of electronic services and registries, as well as the use of software and communication systems. For example, a heightened use of integrated management systems, the use of GIS (e.g., at the National Railway Company), online services, applications, and orders (e.g., I-KAT,<sup>18</sup> e-invoices, etc.), high-speed internet, and others is observed. A major setback in this trend has been the sporadic suspension and the subsequent closure of services to the public (e.g., certain services of the Central Commercial Registry). Yet, most of these innovations are not related to new inventions, but rather to applying existing foreign know-how.

#### 1.4 Internationalisation of innovation policies

Bulgaria has a nationally-centred innovation policy. This characteristic of the country's innovation policy is partially attributed to the fact that the international competitiveness of Bulgarian enterprises is still low.

The internationalisation of innovation policies in Bulgaria is entirely driven by the country's membership into the EU. That is, Bulgaria's participation in initiatives like the European Scoreboard, or in benchmarking exercises is merely project-based.

According to *Innovation.bg 2007*, Bulgarian enterprises active on the European and the international market are the most innovative in the country, yet, they constitute only a small share (less than 5%) of all enterprises. The rapid rise of exports in Bulgaria following the global financial and economic crisis signals for the increasing dependence of the economy's competitiveness on international markets.<sup>19</sup> The latter is likely to lead to an increase in the international innovation activity of Bulgarian enterprises in the next 3-5 years.

Bulgaria does not have any nationally-driven, regional, or cross-border innovation support schemes, venture capital, etc. Although venture capital funds have been active in the country since the 1990s, the practice to use venture capital for research and innovation is not established in Bulgaria. In 2011, two financial instruments funded by the EU under OP Competitiveness were established in the country to support research and innovation (JEREMIE and JESSICA), but they have not effectively started their operations yet, and they only finance Bulgarian, and not international, enterprises. In addition, the use of public procurement to boost innovative activities is not yet developed, though there are such provisions in the Public Procurement Law.

<sup>17</sup> Among them, projects are most often awarded to Sofia University, Medical Universities Sofia and Plovdiv, as well as the Technical University Sofia.

<sup>18</sup> Internet-based information service for traffic violation ticket tracking and the issuing of new driving licences developed by a private company and donated to the Ministry of Interior.

<sup>19</sup> Bulgarian exports grew 26% on an annual basis in the first quarter of 2011, according to preliminary data from the National Statistical Institute.



## 1.5 Evidence on effectiveness of innovation policy

In the absence of updated research and innovation strategies and priorities for the country, the effects of innovation policies are hard to evaluate. There is no formal public system for monitoring the effectiveness of measures supporting innovation in Bulgaria<sup>20</sup>. There are no regular consistent evaluations of the functioning of the NSF and NIF. Bulgaria has also not carried out any formal evaluation of its participation in EU's Framework Programmes and their potential effect on research and innovation.

There are, however, evaluations of the measures financed through the OPs. For example, businesses have cited many obstacles to the effective take up of OP Competitiveness, such as complicated and ambiguous application requirements, no respect for evaluation and implementation deadlines, and excessive and unjustified spending on technical assistance to the Intermediary Body.<sup>21</sup>

### Case 1 Support for Clusters

The development of cluster policies and projects has been continuously supported in Bulgaria through international donors throughout the 2000s (especially in the area of ICT). The Ministry of Economy, Energy and Tourism adopted and continued this policy, financing two grants through the Phare Programme:

- The first supported Implementing a Cluster Approach and a Cluster Model and eventually aided the development of a National Strategy for the Development of Clusters (2006), while also launching a pilot project creating 2 clusters;
- As a result of the second project (2007-2009), another 10 clusters were created.

The cluster policy has become more prominent in Bulgaria in the past few years, giving rise to the creation of an Association of Clusters. Today, there are clusters in all regions of Bulgaria, in addition to Centres encouraging entrepreneurship in cities like Plovdiv and Ruse, for example.

The most prominent examples of the cluster model are in the ICT sector, which is among the most dynamic sectors of the Bulgarian economy. The Bulgarian ICT Cluster was created in 2004 and, during the last three years, it has aided the creation of two additional clusters – namely, the Bulgarian Cluster “Telecommunications” founded in 2008, and the Cluster “Microelectronics and Embedded Systems” founded in 2010. In addition, the ICT Cluster supported the establishment of “ICT Cluster –Varna” and is a co-founder of the Association of Business Clusters in Bulgaria.

While no formal evaluations of the cluster policy exist, among the most valuable contributions of the cluster model to the innovation culture and system in the country are, perhaps, the opportunities for co-operation and partnership that they readily provide.

<sup>20</sup> The last publicly commissioned report on innovation policy assessment was completed in January 2008 - Annual Report on Innovation Policy in Bulgaria in 2007. The only report providing annual assessment of the Bulgarian innovation performance and policy perspectives since 2005 has been *Innovation.bg* of the Applied Research and Communications Fund, a think tank.

<sup>21</sup> For more information see *Innovation.bg 2011*, Applied Research and Communications Fund, pp. 35-36.

## 2. Innovation policy budgets – an overview

### 2.1 Trends in funding of innovation measures

Table 2 Gross Domestic Expenditure on R&D and Innovation by Funding Source (€, thousand)

Sector	2005	2006	2007	2008	2009	2010*
<b>Business enterprises</b>	29,632	37,091	47,686	51,021	55,803	35,874
<b>Government</b>	68,049	74,968	79,145	101,926	111,639	93,045
<b>Higher education</b>	376	816	1448	719	1,357	1,044
<b>NGOs</b>	289	450	711	1541	334	205
<b>Abroad</b>	8,075	7,869	10,617	11,400	15,474	84,629
<b>TOTAL</b>	106,421	121,195	139607	166,607	184,607	214,796

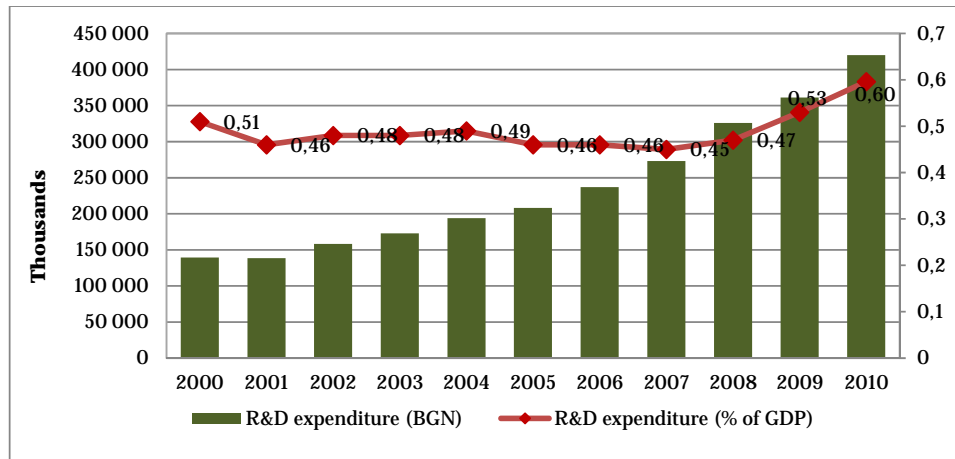
Note: The conversion rate used for the data in the table is Bulgarian National Bank's fixed exchange rate of EUR 1 = BGN 1.95583; \* preliminary data.

Source: National Statistical Institute, 2010.

Gross domestic expenditure on R&D as a share of GDP in 2010 was 0.6%, or about BGN420m (€215m).<sup>22</sup> Funding for R&D in Bulgaria has been on a steady increase in absolute terms, yet R&D expenditure as a share of GDP has stagnated since 2000 at around 0.5%. This implies that the innovation potential of the Bulgarian economy remains unchanged and is unlikely to lead to higher competitiveness in the near future. The trend changed in 2010 but it is not clear what was exactly the source of that change. Both public and private national funds for R&D contracted sharply in 2010 compared to 2009 in the face of the global economic crisis. Their decline was more than compensated by R&D expenditures from abroad. As these expenditures have come from less than three sources they remain confidential and are not published by the national statistics. Most probably the increase was due to the inflow of financing from the Cohesion and Structural Funds as well as the European framework programmes for research (FP 7) and for innovation (CIP). They all have the European Commission as a source of the funds. This is in line with the findings of this and other reports that during the crisis EU funds have become the primary source of funding for R&D and innovation in Bulgaria.

<sup>22</sup> National Statistical Institute's preliminary data for 2010, available online at: <http://www.nsi.bg/otrasal.php?otr=16> [last visited November 24, 2011].  
Mini Country Report/Bulgaria

Figure 2 Bulgaria: R&D Expenditure

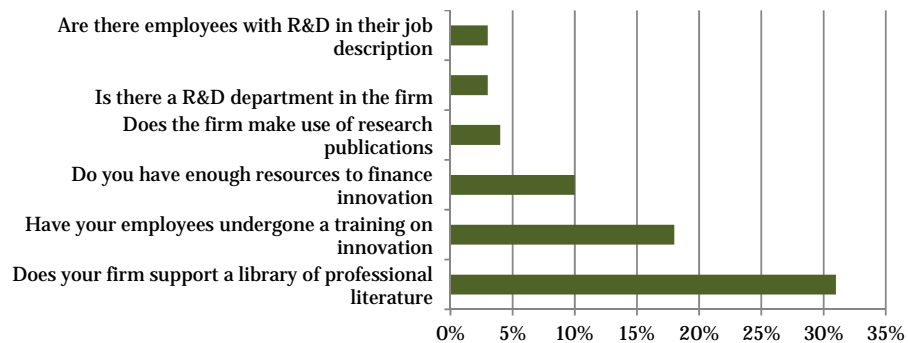


Source: ARC Fund's calculations based on preliminary budget information for 2010 and data from NSI.

Research and innovation in Bulgaria continue to be dominated by public funding distributed at a national level. In contrast to R&D financing in other EU Member States, government financing in Bulgaria is directed primarily towards supporting the running costs of public R&D institutes. Only 13% of government R&D funds are spent for promoting R&D in the non-government sectors of the economy.

The share of private sector financing has been on the rise in Bulgaria, yet, Business Enterprise R&D (BERD) expenditure remains among the lowest in Europe. The promotion of business investment in R&D through legislative or fiscal stimuli is practically non-existent in Bulgaria. Existing guarantee schemes through the Bulgarian Development Bank have not targeted research and innovation. It is expected that this void will be filled with funds from the JEREMIE initiative. The latter started operations in 2011 through establishing a Guarantee Fund. It is expected that the initiative will soon expand to include a Risk Capital Fund, a Mezzanine Capital Fund and a Growth Capital Fund<sup>23</sup>. Tax incentives for R&D expenditures are very limited in scope<sup>24</sup> and have failed to attract private enterprises. They do not favour in-house R&D, and tax breaks' effects are significantly delayed in time until after the completion of the R&D project. Moreover, while there is an increase in absolute terms in the R&D funding from higher education and enterprises, the share of the latter in total R&D expenditure in Bulgaria remains half that of the EU average. This implies that the capacity of Bulgarian enterprises to support research infrastructure and staff is limited.

Figure 3 Bulgaria: R&D activity of SMEs



Source: The Bulgarian Small and Medium Enterprises Promotion Agency, 2011.

<sup>23</sup> According to the European Investment Fund the guarantee fund will total €400m, while the other three instruments will amount to €150m altogether.

<sup>24</sup> Art. 69 of the Law on the Corporate Income Tax states that enterprises can claim R&D expenditures for tax credit purposes only if these have been spent on R&D procured from public research organisations..



Funding for research and innovation in Bulgaria is carried out at a national level. The country has not yet developed a regional dimension to its innovation policy. In spite of the existence of Regional Innovation Strategies (RIS) (2008) in all six regions, no actual mechanisms for their implementation exist. The lack of authority of regional administrations in the distribution of Structural Funds is a major obstacle to RIS implementation, as these funds are coordinated at the national level, and financing for innovation is not distributed according to needs, but according to number of research institutions within the region.

The main instruments for competitive public R&D funding are the National Innovation Fund (NIF) and the National Science Fund (NSF). In addition to these funds, the government provides direct budget subsidies to the public research organisations – the Bulgarian Academy of Sciences and the universities. In 2008, for the first time since 2000 the ratio between national institutional (direct subsidies for public research organisations) and competitive funding was almost equal.<sup>25</sup> The crisis has resulted in a reversal of the trend towards an increase in the weight of competitive vis-à-vis institutional funding. In 2011, the National Science Fund's budget was reduced to BGN36m (€18.4m)<sup>26</sup> as a direct consequence of the crisis on the state budget revenues. This came on top of a similar budget reduction in 2010. Initially, the NSF budget for the year was set at BGN61m (€31.2m), only to be further cut to BGN 45m (€23m) during a mid-year revision of the state budget<sup>27</sup>. As a consequence, a number of programmes, support measures, and projects were negatively affected. In effect, the budgets of NSF for 2010 and 2011 were almost entirely swollen up by due payments to multi-annual research projects funded in 2008. But even such projects had to take cuts to their initial budget plans, which resulted in a mounting dissatisfaction of the beneficiaries with the work of the fund. The NIF has practically ceased its activity and has supported no projects since 2009. Payments for projects already approved for funding under the NIF have been significantly delayed. In 2011, the government planned transferring BGN5m (€2.6m) from the state budget to the Fund to cover payments owed to businesses, whose research and innovation projects have already been approved for funding in previous years. Similarly, in 2010, BGN4m (€2.1m) were transferred to the Fund exclusively used to cover the costs of projects already approved in the past. Thus, NIF cannot provide financing for supporting new projects. The situation is unlikely to change in 2011, as the Fund still owes over BGN7m (€3.6m) to projects already approved in previous years, while its programming budget for 2011 is BGN5m<sup>28</sup>.

EU instruments like the Cohesion and Structural Funds play a key role in R&D funding in Bulgaria, as they are specifically directed towards innovation, research, and human resource development, while public institutional subsidies mainly cover salaries and current spending in public research institutions. It is expected that their contribution to Bulgarian R&D investment will start to show up in national R&D data from 2011 onwards, as actual reimbursements of projects starts to flow into the country. The EU Structural Fund's Operational Programmes (OPs) relevant to R&D and innovations are OP Competitiveness,<sup>29</sup> OP Human Resources Development, and, to some extent, OP Regional Development. OP Competitiveness allocates €551,588,378 for innovation (55.8% of total ERDF support) for 2007-2013, including €204m for the development of SMEs in Bulgaria. This is twenty times more than the NIF peak budget in 2008. OP Human Resource Development has a budget of €1.213m, of which 5% are allocated to activities related to innovations. However, the absorption of EU funds remains low, though improving, due to no prior experience and shortage of administrative capacity in managing OPs, opaque administrative

<sup>25</sup> The Applied Research and Communications Fund, 2009, *Innovation.bg 2009*.

<sup>26</sup> According to the Draft Programming Format Budget of the Ministry of Education, Youth and Science 2011.

<sup>27</sup> According to the Draft Programming Format Budget of the Ministry of Education, Youth and Science 2010 and 2011. As a consequence of the crisis budget revenues fell so steeply in 2010 that the Government of Bulgaria had to revise the *Law on the State Budget* in the middle of the fiscal year.

<sup>28</sup> According to the Draft Programming Format Budget of the Ministry of Economy, Energy and Tourism 2011

<sup>29</sup> OP Competitiveness is currently the only public source that supports setting up new Research Technological Development and Innovation (RTDI) companies.

rules, fraud, etc. By mid-2010, only 13.5% of the contracted funds have been paid out by the OPs, and only 33.9% of the total budget of the programmes has been contracted.<sup>30</sup>

An analysis of the support measures for research and innovation in the country (Appendix A) reveals that the crisis has dealt a heavy blow to national funding and organisational underpinning for research and innovation. Most of the measures' budgets have not been updated since 2009, either because they had to be discontinued due to the lack of funding or because of organisational problems, e.g. the NSF leadership changed three times in the past three years. This is indicative of the lack of deliberate and strategic targeting of research and innovations. The country has experienced an across the board reduction of R&D investment in the private and the public sectors, with the exception of initiatives supported by EU funds.

It is very difficult, if not impossible, to allocate national research and innovation funding to the five broad categories of research and innovation policy measures. These categories are much more applicable to research and innovation funding provided to Bulgaria through the EU funds. The *Law on State Budget* and the Programming Format Budgets of the separate ministries provide information at a programme rather than individual measures level. Furthermore, there are rarely publicly available reports on the actual implementation of the measures and how it differs from the budget. For example, the Draft Programming Format Budget of the Ministry of Economy, Energy and Tourism 2010 allocated BGN0.49m (€0.25m) for the programme Stimulating Entrepreneurship and Innovation, which included as many as 9 measures: (a) Developing Competitive Start-Ups – Project 100 and Stimulating the Innovation Activity of Young People in Bulgaria – Technostarters; (b) Entrepreneurship Training among the Young for Creating Skills for Competitive SMEs; (c) Developing an Annual Report on the Bulgarian Innovation Policy 2009; (d) Support for the Enterprise Europe Network – Bulgaria; (e) National Innovation Fund; (f) Promoting the National Innovation System; (g) Developing Enterprise Centres at the Universities; (h) Voucher Scheme; (i) Knowledge Factory – Youth Technological Platform. Reporting on the implementation of its 2010 budget, the Ministry noted that the actual expenditure on Stimulating Entrepreneurship and Innovation in 2010 amounted to BGN3.8m (€1.9m), without providing further details<sup>31</sup>. In many cases the bulk of the budget of the separate measures goes to the implementing administration of the respective ministry and/or agency. Hence, measures for which we could not establish firm affiliation with any of the broad categories of research and innovation, we have assigned to Governance and Horizontal Research and Innovation Policies. It should also be noted that while annual funding allocations coming from the national budget are usually absorbed within the year of their appropriation, financing from EU funds would take two to three years to trickle down in the economy. Hence, it is visible that Bulgaria provides the bulk of its current budget resources for Research and Technologies (€119.21m in 2010) for institutional support of public research organisations (Bulgarian Academy of Sciences, Agricultural Academy and universities). On the other hand the country has chosen to direct EU fund's support primarily to Promote and Sustain the Creation and Growth of Innovative Enterprises (€166.94m in 2010), the absorption of which depends on the capacity of the government and the enterprises. The available data seem to point to an underinvestment in Governance & Horizontal Research and Innovation Policies (€8.16m in 2010) and in particular in Human Resources (€9.6m in 2010). As national budgets for research and innovation continue to shrink in 2011 and 2012 Bulgaria's innovation development will increasingly depend on its capacity to manage and absorb EU funds.

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<sup>30</sup> ERAWATCH Network – ARC Fund, 2010, *Country Reports 2010: Bulgaria*.

<sup>31</sup> Short Analysis of the Implementation of Policies and Programmes by the Ministries and Agencies for 2010, Ministry of Finance.

Figure 4 Broad Share of Available Budgets by Main Categories of Research and Innovation Measures\*

Broad category of research and innovation policy measure	Approximate total annual budget for 2010 (in euro)	Commentary
<b>1. Governance &amp; horizontal research and innovation policies</b>	<ul style="list-style-type: none"> <li>• <b>Total budget: €8.16m</b></li> <li>• Programme “Evaluation, development and preservation of the national research potential” - €0.72m</li> <li>• Programme “Coordination, monitoring and analysis of the research potential for integration into ERA and the global information network” - €6.5m</li> <li>• Programme “Increasing the index of the quality of administrative services of the resources centres and the creation of favourable information environment” - €0.14m</li> <li>• Programme “Development of the information society” - €0.80m</li> </ul>	<ul style="list-style-type: none"> <li>• Reported in the Draft Programming Format Budget of MEYS 2011; refers to planned expenditure as per the revised <i>Law on State Budget 2010</i></li> <li>• Reported in the Draft Programming Format Budget of MEYS 2011; refers to planned expenditure as per the revised <i>Law on State Budget 2010</i></li> <li>• Reported in the Draft Programming Format Budget of MEYS 2011; refers to planned expenditure as per the revised <i>Law on State Budget 2010</i></li> <li>• Reported in the Draft Programming Format Budget of Ministry of Transport, Information Technologies and Communication 2011; refers to planned expenditure as per the revised <i>Law on State Budget 2010</i>; includes support for R&amp;D and innovation in ICT</li> </ul>
<b>2. Research and Technologies</b>	<ul style="list-style-type: none"> <li>• <b>Total budget: €119.21m</b></li> <li>• Bulgarian Academy of Sciences - €30.6m</li> <li>• Targeted subsidy from MEYS to universities for research and creativity as well as for publishing textbooks and research - €5.13m</li> <li>• Stimulating research through competitive financing - €23.2m</li> <li>• Programme “Scientific research” (in agriculture) - €15.28m</li> <li>• Development of applied research in the research institutions in Bulgaria - €20m</li> <li>• Development of new and strengthening of existing technology centers - €20m</li> <li>• Development of new and strengthening of existing technology transfers offices - €5m</li> </ul>	<ul style="list-style-type: none"> <li>• Planned in the revised <i>Law on State Budget 2010</i>; institutional funding provided through MEYS budget</li> <li>• Transfer from the MEYS budget as per the <i>Law on State Budget 2010</i> before its downward revision</li> <li>• Reported in the Draft Programming Format Budget of MEYS 2011; refers to planned expenditure as per the revised <i>Law on State Budget 2010</i>; this is the annual subsidy to NSF, which funds measures in all broad categories</li> <li>• Reported in the Draft Programming Format Budget of the Ministry of Agriculture and Foods 2010; represents the annual budget subsidy (institutional financing) of the Agricultural Academy</li> <li>• Call for proposals under Indicative Annual Working Programme of OP Competitiveness for 2010 (after state budget revision), Priority Axis 1 Development of a Knowledge-Based Economy and Innovation Activities; 85% ERDF funding</li> <li>• <i>Ibid</i></li> <li>• <i>Ibid</i></li> </ul>

Broad category of research and innovation policy measure	Approximate total annual budget for 2010 (in euro)	Commentary
<b>3. Human Resources (education and skills)</b>	<ul style="list-style-type: none"> <li>• <b>Total budget: €9.6m</b></li> <li>• Support of the career development of doctoral students, post graduate students and young scientists - €7m</li> <li>• Science and business - €2.6m</li> </ul>	<ul style="list-style-type: none"> <li>• Call for proposals under OP Human Resources Development, Priority Axis 3 “Improving the quality of education and training in correspondence with the labour market needs for building a knowledge-based economy”; figure refers to total budget since the opening of the measure in 2007/2008</li> <li>• <i>Ibid</i></li> </ul>
<b>4. Promote and sustain the creation and growth of innovative enterprises</b>	<ul style="list-style-type: none"> <li>• <b>Total budget - €166.94m</b></li> <li>• Programme “Encouraging entrepreneurship and innovation” - €1.94m</li> <li>• Development of innovative start-ups through support for commercialization of innovative products, processes and services - €10m</li> <li>• Support for commercialisation of innovations by enterprises - competitive phase - €25m</li> <li>• Upgrade of technologies in SMEs - €100m</li> <li>• Upgrade of technologies in large enterprises - €30m</li> </ul>	<ul style="list-style-type: none"> <li>• Actual. Reported by MEET. Includes annual subsidy to NIF as well as other measures</li> <li>• Call for proposals under Indicative Annual Working Programme of OP Competitiveness for 2010 (after state budget revision), Priority Axis 1 Development of a Knowledge-Based Economy and Innovation Activities; 85% ERDF funding</li> <li>• <i>Ibid</i></li> <li>• Call for proposals under Indicative Annual Working Programme of OP Competitiveness for 2010 (after state budget revision), Priority Axis 2 Increasing Efficiency of Enterprises and Promoting Supportive Business Environment; 85% ERDF funding</li> <li>• <i>Ibid</i></li> </ul>
<b>5. Markets and innovation culture</b>	<ul style="list-style-type: none"> <li>• <b>Total budget: €49m</b></li> <li>• Achieving compliance with internationally recognized standards - €10m<sup>32</sup></li> <li>• Creation of business support organisations’ network - €5m</li> <li>• Support for the establishment and development of regional business incubators - €18m</li> <li>• Support for cluster development in Bulgaria - €15m</li> </ul>	<ul style="list-style-type: none"> <li>• Call for proposals under Indicative Annual Working Programme of OP Competitiveness for 2010 (after state budget revision), Priority Axis 2 Increasing Efficiency of Enterprises and Promoting Supportive Business Environment; 85% ERDF funding</li> <li>• <i>Ibid</i></li> <li>• <i>Ibid</i></li> <li>• <i>Ibid</i></li> </ul>

\* ARC Fund calculations based on available budget information.

<sup>32</sup> This and the other three measures presented under “Markets and innovation culture” do not target innovative enterprises, research and/or technology specifically. But a number of studies have found that Bulgarian enterprises adopting standards, participating in clusters or coming from incubators tend to be much more innovative than the rest.

## 2.2 Departmental and implementing agency budgets for innovation policies

The innovation budgets in Bulgaria are centred in two ministries and their agencies – the Ministry of Economy, Energy and Tourism and the Ministry of Education, Youth and Science. The only sizable sectoral research and development budget is located in the Ministry of Agriculture and Foods, which hosts the Agricultural Academy. The funds for the Agricultural Academy are in effect institutional support for a public research organisation. While there are small budget appropriations for sectoral research and innovation policies under the Ministry of Defence, Ministry of Healthcare, and Ministry of Transport, Information Technology and Communications, these are rarely of any public policy significance, as they are generally very small in size (less than BGN1m or €0.5m). Budgets have generally shrunk in 2010, and are likely to stay depressed in 2011. The only notable exception is the budget of the Bulgarian SMEs Promotion Agency, which manages two priority axis budgets under OP Competitiveness.

Figure 5 Innovation budgets of the main government departments and agencies

Name of the organisation (with link)	Number of staff responsible for innovation measures (% of total)	Innovation budget managed	Estimated share of budget earmarked for specific policy measures
<b>Ministry of Education, Youth and Science (MEYS), Science Directorate</b> <a href="http://www.minedu.government.bg">http://www.minedu.government.bg</a> <b>National Science Fund (NSF)</b> <a href="http://www.nsf.net/?id=43">http://www.nsf.net/?id=43</a>	15 staff positions at the Science Directorate, of which one vacant (3.2% of the total administration of MEYS); they also support NSF, which has about 11 more staff managing the fund, plus a various number of permanent and temporary Scientific Expert Committees	€64.7m – budget line “Science” less institutional support for BAS and universities in the 2010 <i>Law on State Budget</i> (before revision)	€30.5m - Development of Science Potential Policy budget line within MEYS budget from the <i>Law on State Budget</i> (before revision), which includes the annual subsidy of the NSF
<b>Ministry of Economy, Energy and Tourism, Economic Policy Directorate, Innovation Unit</b> <a href="http://www.mec.economy.gov.bg/ind/econ.html">http://www.mec.economy.gov.bg/ind/econ.html</a>	7 staff (1% of the total administration of MIET)	€0.17m – budget as per 2010 <i>Law on State Budget</i> (before revision)	The unit is responsible for innovation policy development and coordination and does not manage policy implementation measures
<b>Bulgarian SMEs Promotion Agency, National Innovation Fund (NIF)</b> <a href="http://www.sme.government.bg/ianmsp/story.aspx?id=61">http://www.sme.government.bg/ianmsp/story.aspx?id=61</a>	15 staff managing the fund	€2.06m in 2010, all used to cover the costs of already approved projects; no new projects funded in 2009-2011	Funding is project-based, thus, not earmarked for any specific policy measure
<b>Bulgarian SMEs Promotion Agency, Intermediary Body for Priority Axis 1 Development of Knowledge Based Economy and Innovative Activities and Priority Axis 2 Increasing Efficiency of Enterprises and Promoting Supportive Business Environment of OP Competitiveness</b> <a href="http://ibsme.org/">http://ibsme.org/</a>	174 staff positions, of which 36 not taken as of 2011	Total allocated amount to Priority Axis 1 for the whole period 2007 – 2013 is EUR 246.5m Total allocated amount to Priority Axis 2 for the whole period 2007 – 2013 is EUR 583.8	The whole amount of Priority Axis 1 is dedicated to the Development of Knowledge Based Economy and Innovative Activities The whole amount of Priority Axis 2 is dedicated to the Increasing Efficiency of Enterprises and Promoting Supportive Business Environment

### 2.3 Future challenges for funding of innovation policy

The main challenges for the national R&D and innovation system in 2011 can be summarised as follows:

- institutional fragmentation in national policy-making; research and innovation policies remain separated in two different ministries, each with its own policy development and policy implementation structures;
- a lack of sufficient and adequately planned national financial resources; national funding for research and innovation has no stable mid- to long-term funding perspective;
- a lack of consensus on the national research and innovation priorities; rather than having a strategic approach to research and innovation, policy measures usually follow the money, i.e. the available EU financing;
- low level of absorption capacity of EU funds for research and innovation; the Bulgarian administration still has no capacity to provide reliable funding support from EU funds to SMEs and research teams.

Support for research and innovation has been declared a priority by the Bulgarian government but so far financing is largely left to European funding. Meeting the national R&D goal of 1.5% of GDP by 2020 would require a concerted effort in increasing national public funding, as well as developing a plethora of support measures for encouraging the participation of the private sector. The target for R&D expenditure by 2013 set by the 2004 National Innovation Strategy has not been achieved, as the Bulgarian government has not followed through with consistent policy measures and a mid-term budget framework. Thus, national R&D expenditures have stagnated at around 0.5% of GDP since 2000.



### 3. Thematic report: Demand-side innovation policies

For the purposes of this report, the following categorisation of demand-side innovation policy tools is adopted:

Figure 6 Categorisation of demand-side policies

<b>Demand side innovation policy tool</b>	<b>Short description</b>
<b>Public procurement</b>	
Public procurement of innovation	Public procurement of innovative goods and services relies on inducing innovation by specifying levels of performance or functionality that are not achievable with 'off-the-shelf' solutions and hence require an innovation to meet the demand. <sup>33</sup>
Pre-commercial public procurement	Pre-commercial procurement is an approach for procuring R&D services, which enables public procurers to share the risks and benefits of designing, prototyping and testing new products and services with the suppliers <sup>34</sup> .
<b>Regulation</b>	
Use of regulations	Use of regulation for innovation purposes is when governments collaborate broadly with industry and non-government organisations to formulate a new regulation that is formed to encourage a certain innovative behaviour. <sup>35</sup>
Standardisation	Standardisation is a voluntary cooperation among industry, consumers, public authorities and other interested parties for the development of technical specifications based on consensus. Standardisation can be an important enabler of innovation. <sup>36</sup>
<b>Supporting private demand</b>	
Tax incentives	Tax incentives can increase the demand for novelties and innovation by offering reductions on specific purchases.
Catalytic procurement	Catalytic procurement involves the combination of private demand measures with public procurement where the needs of private buyers are systemically ascertained. The government acts here as 'ice-breaker' in order to mobilise private demand. <sup>37</sup>
Awareness raising campaigns	Awareness raising actions supporting private demand have the role to bridge the information gap consumers of innovation have about the security and the quality of a novelty. <sup>38</sup>
<b>Systemic policies</b>	
Lead market initiatives	Lead market initiatives support the emergence of lead markets. A lead market is the market of a product or service in a given geographical area, where the diffusion process of an internationally successful innovation (technological or non-technological) first took off and is sustained and expanded through a wide range of different services <sup>39</sup> .
Support to open innovation and user-centred innovation	Open innovation can be described as using both internal and external sources to develop new products and services <sup>40</sup> , while user-centred innovation refers to innovation driven by end- or intermediate users. <sup>41</sup>

<sup>33</sup> NESTA (2007) Demanding Innovation Lead Markets, public procurement and innovation by Luke Georghiou.

<sup>34</sup> [http://ec.europa.eu/information\\_society/tl/research/priv\\_invest/pcp/index\\_en.htm](http://ec.europa.eu/information_society/tl/research/priv_invest/pcp/index_en.htm)

<sup>35</sup> FORA, OECD: New nature of innovation, 2009 (<http://www.newnatureofinnovation.org/>)

<sup>36</sup> Commission Communication: Towards an increased contribution from standardisation to innovation in Europe COM(2008) 133 final 11.3.2008.

<sup>37</sup> Edler, Georghiou (2007) Public procurement and innovation – Resurrecting the demand side. Research Policy 36. 949-963.

<sup>38</sup> Edler (2007) Demand-based Innovation Policy. Manchester Business School Working Paper, Number 529.

<sup>39</sup> COM (2005) "Industry Policy" ([http://ec.europa.eu/enterprise/enterprise\\_policy/industry/index\\_en.htm](http://ec.europa.eu/enterprise/enterprise_policy/industry/index_en.htm)) and Mid-term review of industrial policy.

<sup>40</sup> Chesbrough (2003) Open innovation. Harvard Business School Press.

<sup>41</sup> Von Hippel (2005) Democratizing innovation. The MIT Press, Cambridge.

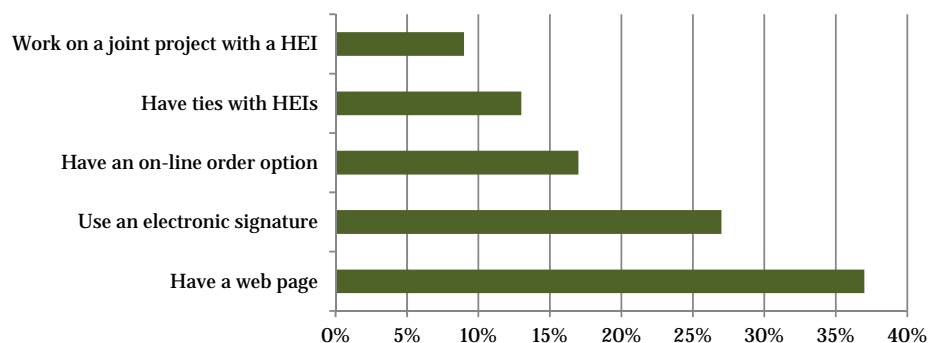
### 3.1 Trends in the use of demand-side innovation policies

There are a number of factors that have resulted in a low demand for the development of innovation in Bulgarian enterprises. The most important among these can be summarised as follows:

- the lack of sophisticated demand tradition in the domestic market;
- the lowest national income level in the EU-27; and
- the low-technology specialisation of the Bulgarian economy;
- the lack of adequate policy responses underpinned with sufficient sustained public funding.

In the past two years the effects of these factors have been exacerbated by the impact of the global financial and economic crisis. Thus, Bulgaria's low GDP and the related low purchasing power of the population provide no real environment for the development of demand-driven innovations.

Figure 7 Bulgaria: SMEs' Innovation Activities



Source: The Bulgarian Small and Medium Enterprises Promotion Agency, 2011.

The obstacles to the development and dissemination of innovations in Bulgaria are numerous, notably, a lack of user-friendly and appropriate financing mechanisms and a low-income profile determining modest demand patterns. In the absence of significant demand and a working national system for innovation, local SMEs find little value in innovating: in 2009, only a quarter of local enterprises (those supplying local markets within a 30 km range) reported undertaking some innovative activity.<sup>42</sup> Exporting enterprises reported a notably larger tendency to innovate, while also having better access to leading technologies and developments but they represent only a very small fraction of the total enterprise population.

Historically both the Bulgarian economy and public policy have been skewed towards technology push vs. market-pull innovations. The Bulgarian economy is characterised by a major share of micro enterprises (almost 90%, according to National Statistical Institute data) with a very low asset base. At the same time the public sector remains the dominant funder and performer of research and development activities. Thus formally there are many barriers between the business and industry collaboration. This has created an unfavourable environment for the emergence of market-based, demand-driven innovations. The existing active informal ties between universities and businesses do not yet allow for the necessary maturity of relations, on which transferred new knowledge could be commercialised.<sup>43</sup>

<sup>42</sup> The Bulgarian Small and Medium Enterprises Promotion Agency, 2011, Bulgarian SMEs in Times of Crisis.

<sup>43</sup> The Applied Research and Communications Fund, 2011, *Innovation.bg 2011*.



The development of a demand-side innovation policy has not yet become relevant for Bulgaria, given that innovation policy making is in its infancy in the country. Demand-side innovations as a term and policy strategy/discourse are not seen in any strategic policy document or action plan in Bulgaria. Thus, there are no policies to specifically target and no mechanisms to specifically govern demand-driven innovations. Instead, the use of demand-side innovation policy instruments is sporadic, not deliberated, and not part of any thought-out policy or strategy.

There is no specific innovation promotion policy through public procurement. Article 4 of the Public Procurement Law allows for a general exemption for R&D contracts between the state and another party when performing “research for public benefit”. The law requires no public procurement procedure, as long as the acquired results remain in the domain of public goods. While the Public Procurement Law<sup>44</sup> foresees the use of public procurement for R&D, this article has rarely been utilised in the innovation sector. The [Public Procurement Agency](#) does not maintain information about the number of public procurement procedures used for sourcing R&D and/or innovations.

There are examples, when regulations have been used in Bulgaria for promoting the penetration of existing products, typically in innovation-related industries. For example, regulations were used with respect to the introduction of e-services and payment methods, the e-government, etc. It should be noted that innovation has never been the stated intended purpose of the regulations. The average low income of the population has constrained the extent to which such innovations can be deployed and have been taken up in the country.

Standardisation has not been related to innovations in Bulgaria but to quality and safety assurance. The last observed wave of standardisation was in the food industry, when in 2010 voluntary meat and bread quality standard was introduced. It was related entirely to food safety and quality assurance. Yet another example, the ISO certification is increasingly penetrating the Bulgarian market as a result of the process of expansion of Bulgarian exports onto the world markets.

No lead market initiatives have been observed in Bulgaria. The long-term detailed policy planning that such initiatives require is not yet evident in the innovation policy-making process.

The Bulgarian government has avoided using tax incentives for promoting any kind of policies in the country after the introduction of a Currency Board in 1997. Demand-side taxes, like VAT have been uniform, with no rate differentiation per product or market. The same is true for excise duties. For example, there is no tax break for electric vehicles or green technologies. VAT is reduced for specific investment goods only, yet only applies to large certified investors and has had no real effect on innovation.

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<sup>44</sup> [http://rop3-app1.aop.bg:7778/portal/page?\\_pageid=173.1082252&\\_dad=portal&\\_schema=PORTAL](http://rop3-app1.aop.bg:7778/portal/page?_pageid=173.1082252&_dad=portal&_schema=PORTAL)  
Mini Country Report/Bulgaria

### 3.2 Governance challenges

Innovation policy in Bulgaria is in its infancy. The innovation structure of the country is not well developed. This results in separate measures being implemented by separate institutions, and no differentiation between demand- and supply-driven innovations yet exists in Bulgaria. Therefore, at this stage, the governance challenge is to define innovation policies in the first place. Detailing such policies and targeting specific innovations is a leap forward, which can be expected in the next 5 to 10 years. The most pressing challenge in this respect is bringing existing policy initiatives that relate to innovation (e.g. ICT, regulation, standardisation, procurement, etc.) under one roof. There is evidence of increasing cooperation and coordination between the Ministry of Economy, Energy and Tourism and the Ministry of Education, Youth and Science. For example, for the first time the National Strategy of Scientific Research to 2020 has incorporated important science, technology and innovation policy guidelines under one heading. This cooperation needs to be spread horizontally - to more policy areas and vertically – to more policy instruments (e.g. from strategy to laws to regulations to specific measures).

### 3.3 Recent demand-side innovation policy measures

No recent demand-side innovation policies have been proposed in Bulgaria. This might change with the planned adoption of a law on innovation in 2011/2012.

## Appendix A Research and innovation policy measures for Bulgaria

Country	Name of the Support measure	1 <sup>st</sup> Priority	Start date	End date	Status (CC to complete)	Estimated public budget in 2010 in euro	Comment
	Association of clusters		2009	No end date indicated	To be created	–	<ul style="list-style-type: none"> <li>no budget available</li> </ul>
<b>Bulgaria</b>	Bulgarian Scientific Periodicals	3.1.1 Awareness creation and science education	1997	No end date planned	To be updated	102,709	<ul style="list-style-type: none"> <li>budget for 2009</li> <li>214,742 - overall budget for the period 2006 -2009</li> </ul>
	Development of the Research Infrastructure	2.1.4 Research Infrastructures	2005	No end date planned	To be updated	6,932,881	<ul style="list-style-type: none"> <li>budget for 2009</li> </ul>
	Establishment of Centres of Excellence	2.1.4 Research Infrastructures	2008	2011	To be updated	4,108,374	<ul style="list-style-type: none"> <li>budget for 2009</li> <li>3,681,302 - budget for 2008</li> </ul>
	Establishment of clusters	1.3.1 Cluster framework policies	2005	2009	To be updated	3,000,000	<ul style="list-style-type: none"> <li>this is the overall budget for the whole program period</li> </ul>
	Establishment of entrepreneurship centres at universities	4.2.1 Support to innovation management and advisory services	2006	2009	To be updated	450,000	<ul style="list-style-type: none"> <li>this is the overall budget for the whole program period</li> </ul>
	Establishment of University Science and Research Complexes	2.1.4 Research Infrastructures	2009	2014	To be updated	4,090,335	<ul style="list-style-type: none"> <li>budget for 2009</li> </ul>
	Guarantee fund for Micro-crediting, Bulgarian Development Bank	1.3.2 Horizontal measures in support of financing	2008	No end date planned	To be updated	250,000,000	<ul style="list-style-type: none"> <li>budget for 2009</li> </ul>
	Ideas	2.2.3 R&D cooperation (joint projects, PPP with research institutes)	2008	2012	To be updated	2,567,734	<ul style="list-style-type: none"> <li>budget for 2009</li> </ul>
	Info centres - Enterprise Europe Network-Bulgaria	4.2.1 Support to innovation management and advisory services	2008	No end date planned	To be updated	3,100,000	<ul style="list-style-type: none"> <li>overall budget for the program</li> <li>the network does not fund any projects but helps businesses tap into EU's FP7 (€ 1.3 billion for small businesses) instead.</li> </ul>
	Integrated Scientific Centres in the Universities	2.1.1 Policy measures concerning excellence, relevance, and management of research in Universities	2008	No end date planned	To be updated	1,022,584	<ul style="list-style-type: none"> <li>budget for 2008</li> </ul>
	Medical University, Sofia			No end date planned	To be created	12,131,802	<ul style="list-style-type: none"> <li>state subsidy paid to the university in 2010</li> <li>funding for <b>2011</b> is 8,925,675</li> </ul>
National Innovation Fund	1.3.2 Horizontal measures in support of financing	2005	No end date planned	To be updated	2,054,187	<ul style="list-style-type: none"> <li>budget for 2010</li> <li>planned budget for <b>2011</b> is 2,567,734</li> </ul>	

Country	Name of the Support measure	1st Priority	Start date	End date	Status (CC to complete)	Estimated public budget in 2010 in euro	Comment
	One-stop-shops	4.3.1 Support to innovative start-ups incl. gazelles	2002	2004	To be archived	3,600,000	<ul style="list-style-type: none"> <li>overall budget for the program</li> </ul>
	Promoting Scientific Research in Priority Areas	2.2.3 R&D cooperation (joint projects, PPP with research institutes)	2008	2011	To be updated	7,189,655	<ul style="list-style-type: none"> <li>budget for 2009</li> </ul>
	Promotion of scientific research in the universities	3.1.3 Stimulation of PhDs	2004	No end date planned	To be updated	4,365,147	<ul style="list-style-type: none"> <li>budget for 2010</li> </ul>
	Reintegration Grants for Bulgarian Researchers Working Abroad	3.2.3 Mobility of researchers (e.g. brain-gain, transferability of rights)	2008	No end date planned	To be archived	511,292	<ul style="list-style-type: none"> <li>budget for 2009</li> </ul>
	Research competitions, based on bilateral agreements for scientific and technical cooperation	3.2.3 Mobility of researchers (e.g. brain-gain, transferability of rights )	2003	No end date planned	To be updated	1,210,942	<ul style="list-style-type: none"> <li>overall budget for the program</li> <li>for 2010 there are 17 approved projects with Romania</li> <li>currently ongoing are calls for bilateral co-operation in the field of research and technology between Bulgaria and: the Slovak Republic, Germany, Ukraine, Slovenia, Romania, Macedonia, and China</li> <li>also currently ongoing are a call for "Scientific co-operation between Eastern Europe and Switzerland", and a call for bilateral cooperation funded by the Russian Federation's Humanitarian Fund</li> </ul>
	RILA Programme	3.2.3 Mobility of researchers (e.g. brain-gain, transferability of rights )	2002	2010	To be updated	–	<ul style="list-style-type: none"> <li>no budget available</li> <li>110 EUR per diem and up to 308 for travel</li> </ul>
	Sabbaticum Competition 2009	3.2.2 Career development (e.g. long-term contracts for university researchers)	2008	2010	To be archived	255,646	<ul style="list-style-type: none"> <li>budget for 2009</li> </ul>
	Scientific Research	2.2.2 Knowledge Transfer (contract research, licences, research and IPR issues in public/academic/non-profit institutes)	1994	No end date planned	To be updated	896,099	<ul style="list-style-type: none"> <li>overall budget for the period 2005-2006</li> </ul>
	SME Services and Technology Grant Scheme	4.2.1 Support to innovation management and advisory services	2001	2006	To be updated	1,500,000	<ul style="list-style-type: none"> <li>overall budget for the program</li> </ul>
	Union of Inventors	4.2.1 Support to innovation management and advisory services			To be created	–	<ul style="list-style-type: none"> <li>no budget available</li> <li>main activities incl.: participation in policy-making and enforcement related to inventiveness; Raise the knowledge and</li> </ul>

Country	Name of the Support measure	1 <sup>st</sup> Priority	Start date	End date	Status (CC to complete)	Estimated public budget in 2010 in euro	Comment
							<p>qualification in the sphere of inventiveness and patent licensing; Support the dialogue between its members and state, NGOs, and other institutions; Establish contacts and develop collaboration with associations, creative unions, and other inventors' organisations in Bulgaria and abroad; Consulting, awareness raising, and marketing of inventions.</p> <ul style="list-style-type: none"> <li>• Members of UIB could be the authors of at least one invention or utility model, experts in patents and juridical persons.</li> </ul>
	University of Food Technologies, Plovdiv				To be created	–	<ul style="list-style-type: none"> <li>• no budget available</li> <li>• supports science and technology research projects (18 projects completed in 2009 )</li> <li>• organizes an annual international science conference</li> <li>• has a Center for skill &amp; qualification improvement and a Center for knowledge exchange between universities, as well as numerous labs</li> </ul>
	Young Researchers	3.1.1 Awareness creation and science education	2000	No end date planned	To be updated	359,483	<ul style="list-style-type: none"> <li>• budget for 2009</li> <li>• overall planned budget for the period 2005-2009 is 894,759</li> </ul>
	Young Talents	3.1.1 Awareness creation and science education	1999	No end date planned	To be updated	–	<ul style="list-style-type: none"> <li>• no budget available</li> <li>• currently ongoing: the 13<sup>th</sup> National “Young Talents” Competition ( 2011)</li> </ul>