

# NATIONAL RTD POLICIES IN EU CONTEXT

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# GLOBAL CHALLENGES

**The world is changing very rapidly, while faced with many global challenges that require new approaches and solutions.**

**Increasing investment in science and innovation is a necessary element in the creation of these new solutions.**

**The possibility of highly innovative and cutting-edge research and support for all forms of innovation will grow rapidly in coming years.**

**These capabilities are the foundation for building competitive European universities, research organisations and business communities that can compete on the global stage.**

# GLOBAL CHALLENGES (2)

**The most important priorities of the European Area of Research and Innovation reflected in Europe 2020 strategy are:**

- ♣ The concentration of public resources and investments in priority research areas and reaching investments in research and development (R & D) amounted to 3% of GDP for the EU by 2020;**
- ♣ Support for research infrastructure and construction of modern research centers supported by the Structural Funds;**
- ♣ Awareness and involvement of industrial partners in innovation processes, and support mechanisms for financing innovative start-up businesses, especially those in the eco-innovation.**

# INNOVATION UNION EU FLAGSHIP INITIATIVE

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European Day of the Entrepreneur - 2010 Innovation - Meeting of Science and  
Business in the City of Sofia

# WHY INNOVATION UNION?

**A cornerstone of Europe 2020 strategy**

**Three aspects:**

- **Globalisation of knowledge production and innovation capacities**
- **Impact of the crisis on public and private finance, survival of innovative SMEs**
- **Major challenges to address with reduced means**

**→ *Innovation emergency!***

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# GLOBALISATION OF KNOWLEDGE

- Develop world-class excellence
- Attract investment through better support and framework conditions
- Establish strategic cooperation with world partners

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# ECONOMIC AND FINANCIAL CRISIS

**EU lost six million jobs, €1000 Bn annual GDP due to crisis**

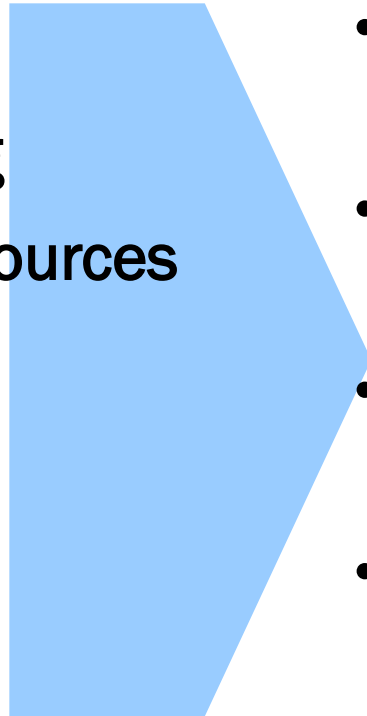
**→ Invest in future growth**

**EU target of 3% of GDP for R&D in 2020 could create a net 3.7 million jobs and close to €800 Bn annual GDP by 2025**

**→ Make the most of available resources through leverage effects, integration and cooperation**

# SOCIETAL CHALLENGES

- Climate change
- Health and ageing
- Use of natural resources
- Energy security
- Clean transport
- Land use
- ....



- Powerful drivers of change in economy and society
- Major global market opportunities
- Requiring EU-scale approaches
- From research to market

**New needs → new ideas → new markets**

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# WHAT IS INNOVATION UNION?

## Strategic approach

- Partnership with Member States
- Whole cycle of innovation: from blue sky to market

## Tackling weaknesses

- Under-investment
- Fragmentation
- Framework conditions

## Building on strengths

- Focus on **societal challenges**
- **Broad concept** of innovation
- Involving **all actors**

→ **A distinctive European approach to innovation**

# INNOVATION UNION HIGHLIGHTS

- European Innovation Partnerships
- European Research Area framework
- Streamlined EU programmes
- New financial instruments
- Reform of standardisation system
- Public procurement of innovation
- Social innovation pilot
- Stronger monitoring

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# KEY MEASURES OF INNOVATION UNION

## Strengthening the knowledge base & reducing fragmentation

- Education and skills
- European research area
- EU financing instruments

## Getting good ideas to market

- Access to finance
- Single innovation market
- Openness and creative potential

## Social and territorial cohesion

## International cooperation

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# EDUCATION AND SKILLS

## Key issues

- Europe needs at least one million more researchers
- Universities need reform and closer links with business to train top talents for innovation jobs

## Key measures

- Member States invited to establish national strategies on training and careers of researchers (2011)
- Independent ranking system to benchmark universities (2011)

# EUROPEAN RESEARCH AREA

## Key issues

- Fragmentation and overlaps between national research and innovation systems
- Huge complexity of support system with myriad of funding schemes with different rules and timetables

## Key measure

- European Research Area framework (2012) to remove cross-border obstacles by 2014
- Including coherence of overall support system

# EU FUNDING INSTRUMENTS

## Key issues

- Too many instruments pursuing different objectives
- Complexity of access, particularly for SMEs

## Key measure

- Focus, streamlining and radical simplification of funding schemes by 2014

# ACCESS TO FINANCE

## Key issues

- Few European SMEs grow into major companies
- Lack of finance is a major cause
- Crisis made situation worse

## Key measure

- New generation of financial instruments with European Investment Bank (2014)

# SINGLE INNOVATION MARKET

## Key issues

- Lack of EU Patent: Council called to agree by end 2010
- Slow standard setting
- Public procurement (17% of GDP) not geared to innovative products and services

## Key measures

- Reform standardisation system (2011)
- Member States invited to set procurement budgets for innovation, with EC technical/ financial support (2011)



# OPENNESS AND CREATIVE POTENTIAL

## Key issues

- Growing importance of open innovation
- Dormant knowledge and intellectual property

## Key measures

- Open access to become default principle for publications from EU Research Framework Programme
- Develop European knowledge market (2011) based on national experiences (e.g. patent pools)

# SOCIAL AND TERRITORIAL COHESION

## Key issues

- Avoid an « innovation divide »
- Make best use of € 86 Bn Structural Funds earmarked for research and innovation until 2013

## Key measures

- Member States and regions invited to use Structural Funds within smart specialisation strategies (2011)

# INTERNATIONAL COOPERATION

## Key issues

- Third countries see 27+1 small/medium parties, not one major partner
- Europe's openness is not always reciprocated
- Global challenges require a global response

## Key measures

- Joint EU / national priorities for cooperation with third countries (2012)
- Agree international infrastructures with world partners (2012)

# NATIONAL RTD POLICIES

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# NATIONAL POLICY IN EU CONTEXT

**Lisbon Strategy (2000-2010) had the ambition to transform the European Union in the most dynamic and competitive economy in the world and to ensure high quality of life of European citizens, with a major emphasis on developing research, education and all forms of innovation.**

**Bulgaria faced the same challenges as whole Europe but in its capacity of one of the slowest growing economies in the EU and operating under conditions of very limited resources - financial, human potential and physical infrastructure. Thus, effective management of science as an economic factor that ensures growth, employment and dynamism of the national economy was and is a priority of the Bulgarian government.**

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# PRIORITIES IN EU CONTEXT

The government priorities reflects the main priorities of the EU to build a European Area for Research and Innovation:

- Concentration of public resources and investments in priority research areas;
- Support for research infrastructure and sustainable development of advanced research organizations;
- Modernisation of universities and research organizations;
- Inclusion of industrial partners in research and innovation processes;
- Better promotion of the Knowledge Triangle through better coordination of policies in education, research and innovation;
- Promotion of free movement of persons, knowledge and technology.

# CURRENT STATUS

**A number of actions are undertaken by the Bulgarian government to update the regulatory framework in the field of science and innovation:**

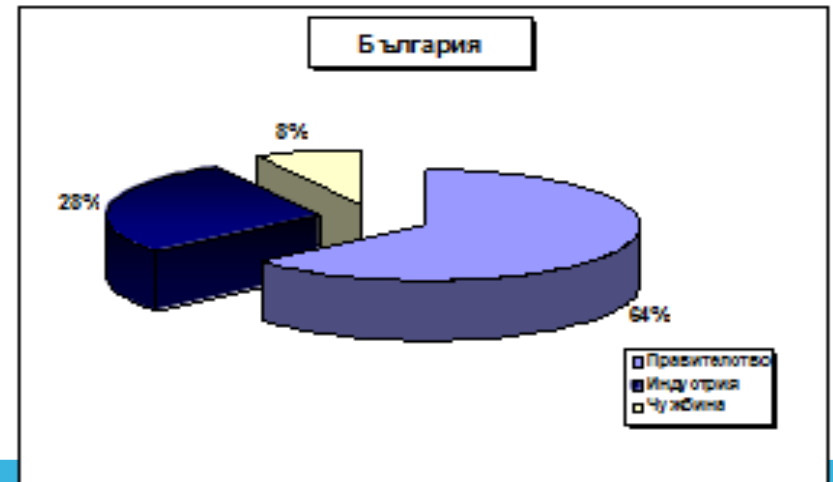
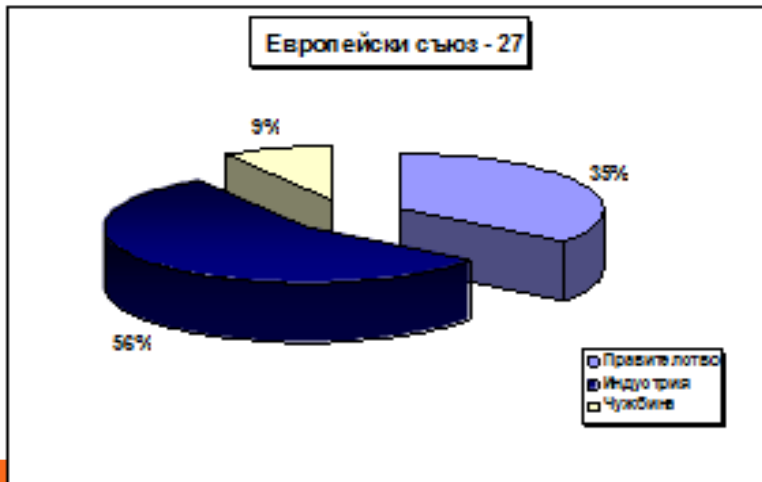
- **Amendments of the Act of Promotion of Scientific Research and National Roadmap for Research Infrastructure were adopted;**
- **Amendments to the Higher Education Act are under preparation;**
- **New Law for Innovation Fund is foreseen;**
- **Adoption of a national target for investment in R & D between 0,6 % and 1,5% of GDP by 2020;**
- **Providing co-financing of priority R & D projects, which is enshrined in legislative measures to encourage investment**

# CURRENT STATUS (2)

The main feature of financial instruments for science is its "scarcity"

"Lagging" State behind the EU average, with almost constant rate of 0.48 % from GDP for RTD until 2009 and declining trend for three-year budget forecast 2010-2012 – up to 0.3 % of GDP

Unfavorable ratio between public and private investment with highest burden of government spending . Not enough financing for the higher education sector.



Distribution of research expenditure by source of funding  
Source: OECD

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## CURRENT STATUS (3)

- **Prevailing institutional support to numerous scientific organizations at a very low share of program-project financing. Missing competitive environment, independent and external (international) expertise of scientific ideas, developments and results.**
- **Not efficient use of various sources of funding - only 0,1% of the Structural Funds are used to support research activity and particularly building research infrastructure and facilities.**
- **Fragmentation of funding provided by the two main national instrument - the Fund for Scientific Research and the National Innovation Fund. Without complementarity between instruments and schemes.**

# CURRENT STATUS (4)

## Actions to improve the human resources are needed to:

- **Overcome the negative trends of reducing the inflow of young people in science and incentives for their retention for undertaking scientific careers;**
- **Ensure the free movement of intellectual capital as the government strives to create an favorable environment - legal, social and financial to make the scientific career an attractive and sought occupation;**
- **Increased opportunities for life long learning and up skilling of scientific staff and implementation of joint programs for research training and practice between academic and business communities.**

<b>STRENGTHS</b>	<b>OPPORTUNITIES</b>
<p>Good traditions in science            Good scientific schools            Cultural diversity and specificity; national identity            Orientation towards internationalization and collaboration            Positive attitude of society towards science            High publishing activity in specific areas</p>	<p>New funding system            Prioritization in Science            Concentration of resources            Increasing the flow of doctoral students            Increasing inter-sectoral mobility            An independent international evaluation            Participation in international scientific networks and infrastructure facilities</p>
<b>WEAKNESSES</b>	<b>THREATS</b>
<p>Lack of coordinated policy actions in the field of science and innovation            Lack of modern science and innovation infrastructure            Fragmented institutional landscape            Low share of the competitive funding and low overall percentage of funding in RTD            Unfavorable age profile of researchers            Passive position of business toward RTD</p>	<p>Fading activities of the scientific system            Poor market of research products and low absorption capacity            Reduced capacity for innovation            Loss of intellectual potential            Lack of inflow of young people in the system</p>

# CHALLENGES FACED BY BULGARIA

**The research Strategy currently being developed will contribute to the establishment of "knowledge society" and the formulation of such a national science policy that creates conditions and sets the prospects for achieving the tasks set by the European Strategy 2020 and contribute towards building an integrated European ERA.**

**The challenges for Bulgaria are:**

- **Reform of the national (and regional) research and innovation system through "reasonable" investment in quality and partnerships;**
- **Providing conditions for more undergraduate and graduate students in science, mathematics and engineering disciplines;**
- **Prioritization of the cost of knowledge, including tax breaks, incentives and other available financial instruments**

# OBJECTIVE 1: INCREASE THE INTENSITY, EFFICIENCY AND EFFECTIVENESS OF RTD ACTIVITY IN FAVOR OF ECONOMY AND SOCIETY

**Measure 1. Increasing the share of GDP for research and innovation to between 0.6 and 1,5% of GDP by 2020 and implementation of priority areas for research and innovation**

- Introduction of targeted national thematic programs in priority areas;
- Provide specific mechanisms for conducting research in response to urgent needs;
- Support of scientific developments through institutional funding based on established programs and plans for research in priority areas
- Increasing the use of Structural Funds to support the realization of national targets for investment in Science and Innovation

**Measure 2. Increasing the share of program funding through grants under the NSF, NIF and Structural funds for our innovation and improve policy coordination within these tools**

# OBJECTIVE 1: INCREASE THE INTENSITY, EFFICIENCY AND EFFECTIVENESS OF RTD ACTIVITY IN FAVOR OF ECONOMY AND SOCIETY

## Measure 3. Improving the legal framework for conducting R & D and its association with economic growth

Adoption of national strategies for development of research 2010-2020, Amendments of Law of promotion of Scientific Research and the Higher Education Act, a new Law on Innovation Fund, Amendments to the Law for Investment Promotion

## Measure 4. Internationalization of the Bulgarian science and its integration into ERA

- Coordination of national, regional and European policies and programs,
- Introduction of schemes designed to support the participation of national scientific community into EU RTD programs and initiatives,
- Access to European and international organizations and scientific infrastructure,
- Access to international data bases with scientific information and publications and communication infrastructure;
- Enlargement of bilateral RTD cooperation with European and third countries

## OBJECTIVE 2: BUILDING SUSTAINABLE RELATIONSHIP EDUCATION-SCIENCE-BUSINESS AS A BASIS FOR THE DEVELOPMENT OF KNOWLEDGE-BASED ECONOMY

### Measure 1. Creating favourable conditions for attracting investment by business, building effective public-private partnerships by:

- Introduction of incentive schemes for employment of young researchers in enterprises;
- Improve innovation infrastructure, create new and strengthen existing structures for technology transfer and removing barriers to entrepreneurship
- Pro active steps towards the protection of intellectual property.

### Measure 2. Promote integration between universities, research institutes, public and private actors and actors from the third sector, both internally and internationally

- Maintenance of a national interactive platform education-science-business ;
- Implement targeted programs to support research in SMEs and for joint participation in projects of scientific institutes and enterprises;
- Creation of bridge structures between universities, research organizations and business

## OBJECTIVE 3: BUILDING A FAVORABLE ENVIRONMENT FOR RESEARCH

### Measure 1. Improving governance and modernization of the universities and public research institutions

**This measure aims to strengthen international competitiveness and quality of research in universities and public research institutions on the basis of internal strategies, prioritization and specialization, and development of various forms of cooperation within the institution and between institutions needed to build a critical mass of human resource, material and technical base and financial resources.**

### Measure 2. Introduce a system of evaluation of scientific organizations and universities

**In order to increase the efficiency of publicly funded research activities and provide an opportunity to participate in world class research, of regular internal evaluation of universities and scientific organizations and international assessment of scientific organizations, programs and projects should be introduced**



## OBJECTIVE 3: BUILDING A FAVORABLE ENVIRONMENT FOR RESEARCH

### Measure 3. Development of scientific infrastructure

- Grants to update equipment for applied research in research institutions
- Implementation of the National Roadmap for Research Infrastructures (2011-2018 )

**Aims at improving the conditions for carrying out applied research and provide innovative services to businesses.**

**Investment in research infrastructure will be planned and developed to ensure maximum contribution to the system of research and innovation for economic development, social welfare and environmental sustainability.**

**Funds for infrastructure will be focused on areas in which our country has, or has the potential to play a leading role from regional and European perspective. Funding and rules for access to national research infrastructure will encourage other scientific institutions, and businesses to work together and will lead to improving their way of cooperation.**

## OBJECTIVE 3: BUILDING A FAVORABLE ENVIRONMENT FOR RESEARCH

### Measure 4. Development of scientific potential by creating attractive conditions for scientific careers, career advancement, training and specialization of scientists

- Enter the horizontal support programs of research potential;
- Encouraging research in masters programs;
- Support for doctoral and post-doctoral programs;
- Promote the mobility of researchers (intra and intersectoral).

### Measure 5. Strengthening the social dimension of research

- Encouraging the open dialogue with society about the role of science;
- Stimulating information initiatives to demonstrate the scientific achievements
- Introduction of programs to stimulate scientific activity of students;
- Raising the prestige of the scientist and establishment of awards for research