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Mini Country Report/former Yugoslav Republic of Macedonia

**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 main policies that affect the innovation aspects in the former Yugoslav Republic of Macedonia have been adopted since 2008. However, the country does not have a separate innovation policy, which is reflected by a low performance of the Macedonian innovation system. The main innovation priorities are spelled out in the Industry Policy of the Republic of Macedonia for 2009-2020, and the majority of the innovation measures that the country is implementing constitute the implementation of these priorities. The main priorities are collaborative approaches for enhancing competitiveness (business research, government collaboration, networks and clusters, alliances), SME development and entrepreneurship, human resource development and knowledge creation, internationalisation, commercialisation of new products, investment enhancement and intellectual and industrial property rights. The Ministry of Economy through cooperation with the Macedonian Academy of Sciences and Arts, universities and the business sector currently prepares the National Innovation Strategy for the period 2012-2020. The strategy is expected to be released in first half of 2012. The development of this strategy will cover the challenge of missing a clear vision, strategy and policy for developing a National Innovation System. The strategy will also include the policy-level recommendations emerged from the European Innovation Scoreboard, which included the former Yugoslav Republic of Macedonia for the first time in 2010.

The main mechanisms for financial support of innovation activities are co-financing and grants provided by the Government and its institutions. However, the available funds are relatively small and the innovation programmes have limited impact on the innovation performance. The new measure introduced in 2010, Equipping Laboratories for Scientific Research and Applicative Activities (ELSR), with a €4.3m budget for 2010 seems to be an exception. This budget significantly increased the total innovation budget for 2010.

Several international organisations through different programmes and instruments support and foster the innovation and development activities in the former Yugoslav Republic of Macedonia. The most important international programmes for the country are FP7, CIP, EUREKA, USAID programmes, projects fully financed by GTZ, such as the Technology Transfer Project for economic integration of the country in the regional and EU markets, etc.

The majority of the measures are not sector specific. However, textile companies, educational institutions, and innovative ICT companies are targeted with specific measures which encompass around 75% of the total budget for 2010 regarding measures that support innovation policy in the country. The measure ELSR which had the largest budget in 2010 (61% of the total budget for all measures that support innovation policy in the country) was focused on the HEI.

The main ministry responsible for innovation policy in the former Yugoslav Republic of Macedonia, including demand-side innovation policy, is the Ministry of Economy. The current innovation policies and measures focus on supply-side and do not prioritise aspects of demand that might stimulate or enable innovation in the country. The most popular tools used within demand-side innovation policy include awareness raising activities, regulations and standardisations. However, some ministries are using additional tools in order to achieve specific policy goals. In the framework of the Strategy for Energy Efficiency 2020, the Ministry of Economy uses financial incentive tools in several complementary measures, which are not innovation specific. Additionally, in the context of the Programme for Support and Development of Clusters' Associations the ministry uses open innovation tools. Furthermore, the Ministry for Information Society and Administration purchases the specific innovative products and services through public procurement, as envisaged in the National Strategy for Development of e-Contents 2010-2015 and the National Strategy for e-Inclusion 2011 – 2014.

Commercialisation of new products and transfer of know-how along with the increased availability of capital will be the most important challenges in the future innovation policy in the former Yugoslav Republic of Macedonia.

1. Innovation policy trends

1.1 Trends and key challenges for innovation policy

Since 2008, the former Yugoslav Republic of Macedonia is in the process of developing or adopting several policies that have an influence or are targeted towards innovation in the country. Currently, the National Innovation Strategy for the 2012-2020 period is in the process of development. Through cooperation with the Macedonian Academy of Sciences and Arts (MASA), universities and the business sector, the Ministry of Economy (ME) prepares this strategy with support from the OECD (Organisation for Economic Co-operation and Development). The main objective of Macedonia's Innovation Strategy 2012-2020 is to improve the capacity of domestic companies to absorb new technologies. The strategy should be released in first half of 2012. The development of this strategy will respond to the challenges of missing a clear vision, strategy and policy for developing of National Innovation System.

Furthermore the strategy has to deal with issues regarding the concentration of research activities at one university, overlapping of responsibilities between the Ministry of Education and Science (MES) and the ME and the low level of awareness and demand for innovation. The strategy is expected to propose tax incentives for companies that invest in R&D and an intensified focus on entrepreneurial learning to all levels of education.

On a policy level the MES concludes the National Strategy for Scientific R&D Activities 2011-2020 for the former Yugoslav Republic of Macedonia. The primary goal of the strategy is to create a knowledge-based society through increased expenditures for research and technological development, up to the 1.8% of GDP by 2020, with a private share of 50% of the total R&D expenditures. The strategy will be published in the first half of 2012.

Next to these two policy documents the following documents that influence the innovation in the former Yugoslav Republic of Macedonia are also published:

- Industrial Policy for the former Yugoslav Republic of Macedonia 2009-2020;
- Law on Encouragement and Support of Technological Development;
- Changes in the Law on Higher Education;
- National Strategy for Development of e-Contents;
- European Innovation Scoreboard; and
- Innovation Union Scoreboard 2010.

In 2009 the Industrial Policy for the former Yugoslav Republic of Macedonia 2009-2020 was adopted, developed by the inter-ministerial working group with the following key areas of intervention: applied research, development and innovation, sustainable development, collaborative approaches for enhancing competitiveness (business research, government collaboration, networks, clusters, alliances), SME development and entrepreneurship, human resource development and knowledge creation, internationalisation and investment enhancement. The Industry Policy enables a structured and guided development of innovation in Macedonia.

Based on the Industrial Policy for the former Yugoslav Republic of Macedonia 2009-2020 in January 2011, the ME issued an open call to financially support enterprises that will have activities related to Industrial Policy topics and priorities:

- strengthening capacities, development and implementation of projects;
- introducing competitive products;
- new market development;
- technological development;
- trainings for eco-production;
- employment of young researchers; and
- commercialisation of patented innovations.

Furthermore, the ME made a public call for submission of projects by the textile companies in market development, commercial infrastructure development, technological development, or human resources development. All these activities have a goal to promote innovation and development in the former Yugoslav Republic of Macedonia.

The new Law on Encouragement and Support of Technological Development from 2011 opens the door for enterprises to apply for government co-financing of up to 50% of industrial research and development project expenses, which can include an innovative component. The law favours basic research projects with increased co-financing up to 100% of the total projects' expenses.

A recent policy change that influences innovation is the amendment to the Law on Higher Education adopted in August 2010. According to the new legislation on higher education, public universities are obligated to allocate 40% of students' tuition fees to R&D and innovative activities. This additional income could be expected to increase the innovation outcome and the cooperation between universities and the private sector. In addition, this law also provides the framework for the mandatory involvement of industry professionals in the educational processes at the universities. In this direction, in order to create an appropriate research infrastructure in 2010 the MES was in process of providing 22 research laboratories for R&D activities with a total value of €4.3m. The overall goal of this measure is to establish 130 laboratories with a total budget of €60m by the end of the project. The measure primarily encourages technological innovation, which is prioritised in the main national innovation policy discussions.

The National Strategy for Development of e-Contents 2010-2015 was adopted in July 2010. The strategy was proposed by the Ministry of Information Society and Administration (MISA), and defines the directions for adoption of e-learning methods and e-contents in the Macedonian educational system.

In the past period, the focus in the former Yugoslav Republic of Macedonia was on development of policies for innovation and identification of the national strengths and weaknesses. Regarding the status of innovation in 2010 an European Innovation Scoreboard was performed for the first time in the former Yugoslav Republic of Macedonia. The policy-level recommendations that emerged from this research are:

- development a national innovation strategy for the next decade;
- creation of mechanisms to promote the continuous and structured cooperation between the public and private sector;
- focusing on mechanisms for the evaluation, monitoring and controlling of performance and the mode of action for the various players;
- association of the strategies of national competitiveness with strategies of innovation, including mechanisms of sectoral autonomy;
- making businesses more competitive through cooperation projects, clusters, programs and strategic research cooperation;
- introducing specific stimulating tax policies for sustaining research, development and innovation activities within enterprises;
- promoting proper financial tools and services to sustain research, development and innovation activities within enterprises, with a special emphasis on venture capital; and
- re-orienting government funds to innovative enterprises.

Based on these recommendations, a mild emphasis of financial support is envisioned in governmental programmes that support innovation in the country.

Next to the Innovation Union Scoreboard 2010, which assesses the innovation performances in the former Yugoslav Republic of Macedonia, there has not been any other innovation evaluation conducted since mid-2010. In the Innovation Union Scoreboard 2010¹ it was evaluated on three main types of indicators: enablers, firm activities and outputs. The overall result is that the former Yugoslav Republic of Macedonia is a modest innovator with below average performance. In the general indicator enablers, the former Yugoslav Republic of Macedonia has improvements in the human resources innovation dimension where the following has been noticed: increase of 10.7% of PhD students, increase in the 30-34 demographic group having completed tertiary education and an increase of youth aged 20-24 having attained at least upper secondary level education of 5.4% and 2%, respectively. On the other side there is a decrease in the public R&D expenditures of 9.6%. In the firm activities indicator, there is an increase of 7.5% for the business R&D expenditure, but there is a strong decline in PCT (Patent Cooperation Treaty) patents applications (19.8%) and community trademarks (29.8%). At the end on the outputs, the former Yugoslav Republic of Macedonia has a growth in medium and high-tech product exports of 9.7%, knowledge-intensive services exports of 17.8% and license and patent revenues from abroad of 11.8%.

¹ <http://www.proinno-europe.eu/inno-metrics/page/former-yugoslav-republic-macedonia>

1.2 Innovation governance

The innovation system of the former Yugoslav Republic of Macedonia and its governance is presented in Figure 1.

The MES and the ME have the leading roles in innovation governance in the former Yugoslav Republic of Macedonia, while other ministries, such as MISA, the Ministry of Agriculture, Forestry and Water Management (MAFWM) and the Ministry of Health (MH) have a minor role².

The MES has responsibilities for strategy formulation and planning in the field of science and technology. It manages project development, takes responsibility for the legislative aspect of science and technology, technological development and technical culture and organises international scientific cooperation as well as bilateral, multilateral and European activities. It also supports and encourages the development of scientific research infrastructure in the former Yugoslav Republic of Macedonia (institutes, universities and independent research groups), aiding the development of young researchers and the overall technological development of the country. The ministry has been involved in the formulation and adoption of the main national R&D and innovation strategies and policies, which defines the R&D and innovation priorities in the country.

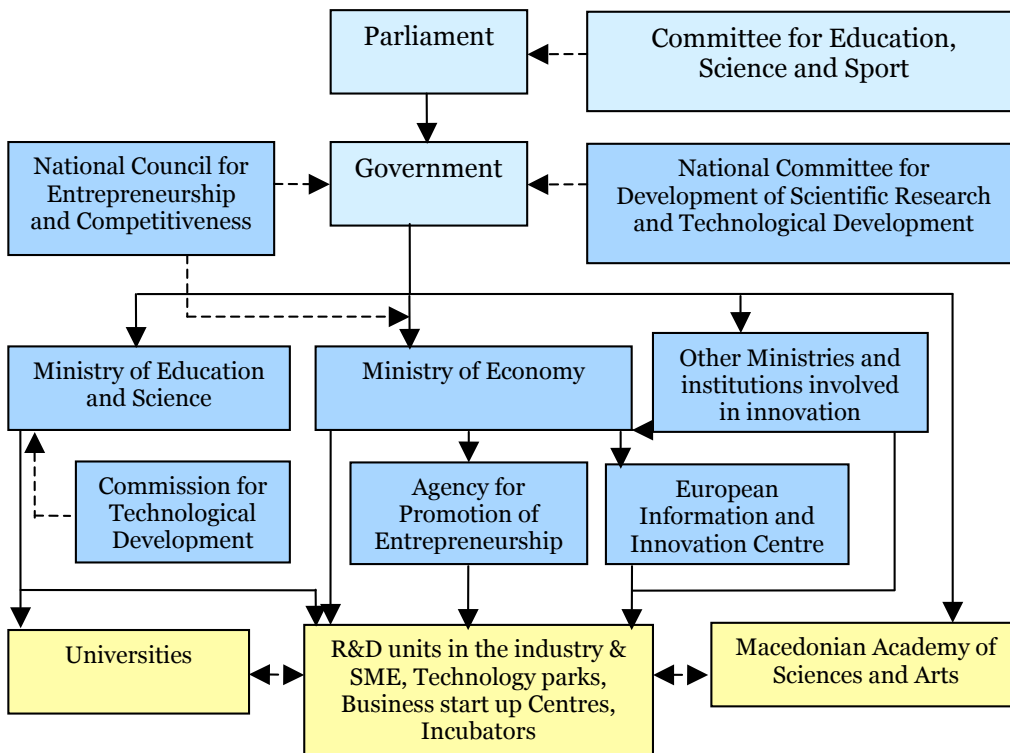
The department responsible for coordination of the aforementioned activities is the Department of Science and Technological Development. Another department that influences the innovation through its activities is the Department of Higher Education Development.

The MES has the overall responsibility for developing and administering Macedonia's science and innovation system up to the prototyping of the products and services. Afterwards the responsibility belongs to the ME.

The ME is the institution responsible for creating and implementing documents and programmes regarding: economic policy, industrial policy, SME competitiveness and innovation enhancement. There are two departments within the ME that are dealing with innovation in different segments: the Department for Industrial Policy and the Department for Entrepreneurship and Competitiveness of SMEs.

² http://www.see-era.net/attach/InnovationInfrastructuresinWBC_see-science.euReport_version2.pdf

Figure 1 Overview of the innovation system governance structure of the former Yugoslav Republic of Macedonia



The Department for Industrial Policy is responsible for the creation and follow-up on the implementation of the Industrial policy for the former Yugoslav Republic of Macedonia 2009-2020. The department worked jointly with the Department for Entrepreneurship and Competitiveness of SMEs to create the Innovation Scoreboard and define a further detailed implementation schedule related to all areas of intervention within the Industrial Policy 2009-2020 including innovation enhancement.

The Department for Entrepreneurship and Competitiveness of SMEs aims for the support of entrepreneurship, competitiveness and innovation of SMEs. The main tasks of this department include the preparation and implementation of corresponding strategic policy documents, annual work plans, programmes and projects; the collaboration with authorities, regional development agencies and EU bodies; and the cooperation with foreign donors, domestic and international information networks. Apart from the policy-drafting role, this department also participates in the implementation of the annual programmes for support of entrepreneurship, competitiveness and innovation of SMEs. The department is currently involved in the preparation of the National Innovation Strategy 2012-2020.

The Agency for Promotion of Entrepreneurship of the former Yugoslav Republic of Macedonia (APERM) was established as a state institution in 2003 in order to support entrepreneurship and competitiveness of small businesses in Macedonia. APERM implements and coordinates state and international support for micro, small and medium businesses and promotes entrepreneurship through various forms of financial and non-financial support. Furthermore, its mission encompasses the creation of favourable economic environment, legislation and institutional infrastructure for support and development of entrepreneurship and competitiveness of SMEs. APERM operates an Innovation Voucher Counselling Scheme, which is aimed at SMEs interested in taking up innovative projects.

The National Council for Entrepreneurship and Competitiveness is a politically independent, non-governmental body for constant communication with the inter-ministerial expert groups for industrial policy for the key issues that influence the competitiveness of the industry in the former Yugoslav Republic of Macedonia, while also contributing to the monitoring and evaluation process of industrial policy implementation.

The Commission for Technological Development is the consultancy body of the minister of the MES. The Commission advises him on the preparation of mid-term and annual programmes for scientific research and technological development.

The European Information and Innovation Centre in the former Yugoslav Republic of Macedonia was established in 2008 as a Macedonian partner in the Enterprise Europe Network. The centre is financed by the ME and through the Competitiveness and Innovation Framework Programme (CIP). It supports companies and research organisations in the process of technology transfer, in establishing business partnerships and provides information about possible sources for financing innovations.

The following national agencies are also active in the field of innovation policy:

- The Agency for Financial Support in Agriculture and Rural Development is a national body accountable for utilisation and monitoring of the Instrument for Pre-accession Assistance for Agriculture and Rural Development (IPARD). This agency has been established under the umbrella of MAFWM.
- The Agency for Foreign Investments and Export Promotion of the former Yugoslav Republic of Macedonia is the primary government institution supporting foreign investment. The agency's main goal is to attract new investment projects and support the expansion of the existing base of overseas companies in the country.

The units of state universities and MASA are the main actors at the innovation performing level. The R&D units in the industry sector, SMEs and the different forms of science-industry cooperation like technology parks, business start up centres and incubators, are also a significant R&D performer in the country. The main innovative performers within the business sector are the largest companies.

1.3 Recent changes in the innovation policy mix

The main policy documents in the Republic of Macedonia that cover the innovation aspects were released after 2009. These documents give a more precise definition to priorities, already presented in other general policy documents such as the Programme of the Government of the Republic of Macedonia 2006 – 2010 and the Programme of the Government of the Republic of Macedonia 2008 – 2012. Reform measures and policies that were projected in these programmes are:

- increase of the budget for education and science and increase of investments in scientific research infrastructure as a condition to apply modern research methods;
- promotion of international cooperation and close cooperation among education institutions, chambers of commerce and employers to establish an education process that creates professionals according to the needs of business sector; and
- support technology development, transfer of technologies and implementation, as well as application of innovations through different types of incentives.

The Industrial policy for the former Yugoslav Republic of Macedonia 2009-2020 and the Strategy for Intellectual Property of the Republic of Macedonia 2009 – 2012 define more precisely the following measures that support the applied research, development and innovation in the Macedonian industry:

- raising awareness for stimulating applied research, development and innovation in industry;

- stimulating cooperation among entities for performing scientific-research activity between the universities and the industry;
- stimulating commercialisation of new products and services in the field of product design;
- supporting the industry for employment of researchers to strengthen their competitiveness for technology and innovation;
- stimulating transfer of new technologies by eliminating import barriers and co-financing import costs for technology that would increase the introduction of new products and services with higher added value;
- monitoring the innovation through inclusion of the former Yugoslav Republic of Macedonia in Innovation Scoreboard –EIS; and
- supporting and protecting the intellectual and industrial property rights.

Based on the above it can be seen that innovation policy development in the Republic of Macedonia has a coherent approach while the policies supplement each other in direction of achieving the country's strategic goals. Since the policies are new there is no record for changes in the priorities that have been laid out. The reports of the European Innovation Scoreboard in the Republic of Macedonia and the Innovation Union Scoreboard 2010 provide conclusions and recommendations that could be taken into account during the development of the National Innovation Strategy for the period 2012-20.

The new measures that were introduced in the framework of the Industry policy 2009-2020, the Programme of the Government of the former Yugoslav Republic of Macedonia 2008-2012 and the National Strategy for Development of e-Contents 2010-2015 are Equipping Laboratories for Scientific Research and Applicative Activities, the Programme for Support of the Textile Industry in the Republic of Macedonia and the Public Procurement of Innovative ICT based Products and Services in Education – e-Contents. The rest of the measures are adapted according the needs of the target groups. Therefore, the major mechanisms, measures and target groups for support of the main innovation policies are the following:

- The targeted beneficiaries of the measure Equipping Laboratories for Scientific Research and Applicative Activities (ELSR) are the state universities and public scientific institutions. These institutions receive grants through which they can purchase and install lab equipment necessary for research.
- The Programme for Support of the Textile Industry in the former Yugoslav Republic of Macedonia (PSTI) provides support to the textile companies in Macedonia. The support is provided for projects submitted by the textile companies based on a public call. The ME covers 75% of the proven expenses; however, the maximum amount varies for different sub-measures in the programme.
- The measure Innovation Voucher Counselling Scheme (IVCS) targets SMEs and potential entrepreneurs and provides subventions (grants) for covering 50% or 100% of project costs if there is innovation included. There is a limitation for the maximum amount that can be covered. The purpose of the IVCS is to boost the knowledge capacity of SMEs by building links between knowledge providers and SMEs. The specific objectives of the scheme are to enable SMEs to buy knowledge and strategic consultancy from research institutions; and to increase the demand for knowledge.

- The Programme for Technical Culture (PTC) is one of the oldest measures provided by MES. Through grants this measure provides support to associations of citizens that are entrusted with activities related to technical culture. This programme is unique and provides grants only to a certain number of civil society organisations entrusted by the MES. The ministry co-finances their activities and special events such as gatherings of young technicians and naturalists, Science of the young, State gathering of radio-amateurs, State gathering of airplane and rocket modellers, Days of Macedonian photography, State festival for amateur movies, summer photo and movie schools and others.
- Through the Programme for Competitiveness of the Macedonian Products and Services (PCMPS) the ME provides subsidies for companies in order to increase their competitiveness, adopt international quality standards, increase innovation capacities and improve the cooperation with research institutions. Specifically, the ministry subsidises the expenses for certification of quality systems (ISO, NASSR, SA8000), certification of products, international applications for patents, development of industrial product design, etc.
- The purpose of the Programme for Support and Development of Clusters' Associations in the former Yugoslav Republic of Macedonia (PSDCA) is establishing new business entities that include R&D institutions and have increased capacity for innovation.
- SMEs, business centres and business incubators are targeted with the Programme for Development of Entrepreneurship, Competitiveness and Innovation of SMEs (PDECI). The responsible ministry is the ME. The programme includes measures for increasing R&D and innovative performance of SMEs, and supporting the establishment of new indigenous innovative firms.
- The Programme for Technological Development (PTD) is open to public and private research organisations and enterprises registered at the MES as organisations for technological development. Public-private partnerships are directly supported by the programme, where the government is co-financing projects from the business community with up to 50% of the total project cost.
- The Public Procurement of Innovative ICT based Products and Services in Education – e-content (PIPS) is open to ICT innovative companies as implementers and educational institutions as beneficiaries. The MISA and MES specify the technical details, the performances of the required products and services, and the selection criteria.

As it can be seen from the measures above, the main mechanism for financial support of innovation activities are co-financing and grants provided by the Government and its institutions. Since the establishment of these measures there have been no changes in the target groups or the beneficiaries. For instance, in the PTC, for the past twenty years - as long the programme exists - the beneficiaries remain the same.

The policies and the measures developed in the former Yugoslav Republic of Macedonia focus on helping their target groups to get involved in the process of innovation and start developing their innovative products or services. To a lesser extend there is financial support for the commercialisation of research results and getting the ideas on the market.

Regarding public sector innovation, the MISA is focused on implementing new technologies in all public institutions. However, the aspects of social innovation are not well covered.

1.4 Internationalisation of innovation policies

The main actors that support the development process of innovation policies are international organisations, particularly OECD, the European Union, USAID (United States Agency for International Development) and the United Nations agencies dealing with development. These organisations mainly provide financial and advisory support to a team of experts and representatives from the government.

For example the development of the National Innovation Strategy 2012-2020 is part of a EU-supported project called the Western Balkans Regional Competitiveness Initiative (RCI), which is to be realised within the framework of the OECD Investment Compact. Also the development of the European Innovation Scoreboard in the former Yugoslav Republic of Macedonia for 2010 was financially supported through the World Bank's BERIS (Business Environment Reform and Institutional Strengthening) project and involved international experts in its development.

Through the MES the government has established a Programme for Scientific and Research Activities (PSRA), which supports cross-border cooperation. The Programme finances both national and international projects along with programmes of public research institutes. The main form of international cooperation with EU and non-EU countries is bilateral cooperation and is based on signed agreements for cooperation in the area for education, science and technological development. The budget for 2010 for these activities was €0.16m. There are agreements signed with nine EU countries and 11 non-EU countries. According to the internal rulebook of the MES, the programmes and projects of the public scientific institutes that include innovative activities have a higher priority for financing through this measure.

1.5 Evidence on effectiveness of innovation policy

Based on the report "A comparative analysis of the innovation systems of WBC based on the national contributions", presented at the First Innovation Dialog Forum (IDF) in Becici, Montenegro (8-9 November, 2010), the main structural challenges of research and innovation in former Yugoslav Republic of Macedonia are:

- overlapping of responsibilities between MES and ME on scientific, technological and innovation issues;
- not clear vision/strategy/policy for developing of the National Innovation System;
- very low level of financial support by the Government;
- low level of awareness about need for innovation in the public and the business sectors;
- no tax incentives for companies that invest in R&D and innovative activities;
- very low level of investment in research infrastructure;
- increased focus on entrepreneurial learning necessary for all levels of education; and
- the main research potential in all fields is primarily located at "Ss. Cyril and Methodius" University in Skopje, which stimulated the governmental opinion that R&D&I in the country could be run more efficiently if this university is divided in several smaller universities.

Furthermore, in the paper “The National Innovation System and its relation to small enterprises: the case of the former Yugoslav Republic of Macedonia” published in the World Journal of Science, Technology and Sustainable Development, Vol. 7, No. 1, 2010 (Polenakovic, Pinto), the main policy recommendation for the development of innovation are:

- increase investment in R&D;
- introduce technological and industrial development zones;
- establish technology/science parks;
- promote R&D benefits to SMEs;
- introduce a national innovation system/ STI scoreboard;
- strengthen the science-business interface;
- develop R&D human capital and reduce brain drain;
- intensify international cooperation;
- increase technology dissemination;
- strengthen intellectual property rights; and
- introduce R&D tax incentives

Case 1 Innovation Voucher Counselling Scheme

The Programme for Innovation Voucher Counselling Scheme offers support to individual entrepreneurs and existing companies for the realisation of a specific business idea. The vouchers are used to pay consultants certified by the Agency for Promotion of Entrepreneurship in former Yugoslav Republic of Macedonia for providing services.

The goals of the programme are to:

- increase the number of entrepreneurs to start their own business;
- create new working places;
- increase the number of companies that survive the initial critical years;
- increase the number of companies with higher growth rates; and
- support the development of the consultancy industry.

The beneficiaries of this programme are SMEs and potential entrepreneurs with the aspiration of self-employment.

The SMEs receive a subsidy of 50% of the consultation costs, to a maximum of €750. For innovation projects, which propose development of new products/services/processes, the maximum subsidy is €1,500. For the purpose of self-employment the voucher covers 100% of the consulting costs, up to €500.

The general observations from independent experts that evaluated the voucher programme for 2006, 2007 and 2008 are:

- The programme is appropriately designed for the development of SMEs. There is a strong base for efficient and effective functioning of the programme and the programme has achieved positive results.
- The outreach, the volume and the impact of the programme are relatively small as the available resources are much less than needed.

Do:

- focus on more innovative projects; and
- offer bigger amounts for innovative projects.

Don't:

- in a certain period of time lower the dependence for funds from the donors.

For further information: <http://www.apprm.gov.mk/voucher.asp>

2. Innovation policy budgets – an overview

The 2009 TrendChart reports included a detailed analysis of available budgets based on the data contained in the policy measure templates for each country. The findings were summarised in the European Innovation Progress Report 2009 (available at: <http://www.proinno-europe.eu/trendchart/european-innovation-progress-report>).

This section updates the 2009 analysis and further explores the issue of the budgets for implementing innovation policy. It is recognised that not all Government departments/agencies allocate specific budgets to specific measures and that actual expenditure year-on-year can vary considerably from that initially declared in policy documents or programming documents. Equally, not all important policy measures are based on significant direct public funding (e.g. the enforcement of a regulatory measure may have an indirect cost for public or private sector stakeholders that is not easily quantifiable prior to adoption).

2.1 Trends in funding of innovation measures

The distributions of the funds dedicated to measures that support the innovation processes in the former Yugoslav Republic of Macedonia have no regional dimension. The available funds by measures are presented in appendix A, while there is no concrete information regarding the division of the budget by main categories of research and innovation measures. Based on the characteristics of the measures and the activities that they support an estimation has been made which is presented in Figure 2. No financial data is available only for the measure Public Procurement of Innovative ICT based Products and Services in Education – e-Content. However, the funds are provided from the state budget.

Figure 2 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 |
|--|--|--|
| 1. Governance & horizontal research and innovation policies | Total: €190,000 <ul style="list-style-type: none"> • €50,000, part of PDECI • €140,000, part of PSRA | <ul style="list-style-type: none"> • The majority of the expenses is covered by the budget. Since they mainly consist of salaries and current expenses in the appropriate ministries and institutions, it is difficult to get a correct estimation |
| 2. Research and Technologies | Total: €5.07m <ul style="list-style-type: none"> • €4.3m, the measure ELSR • €120,000, the measure PTD • €650,000, part of PSRA | <ul style="list-style-type: none"> • The ELSR measure is a new measure with projected funds of up to €60m for the period 2010-2013. Therefore an increase in the funds can be expected for the next year. • PTD and PSRA are standard measures along with the funds, which are allocated for these programmes. There are no expectations that the allocated funds will be increased. |

| Broad category of research and innovation policy measure | Approximate total annual budget for 2010 (in euro) | Commentary |
|---|--|--|
| 3. Human Resources (education and skills) | Total: €474,000 <ul style="list-style-type: none"> • €20,000, part of the IVCS • €54,000, part of the PCMPS • €400,000, part of PSRA | <ul style="list-style-type: none"> • The IVCS measure has received increased attention and importance. Consequently, an increase in the funds can be expected. • Due to the importance of the competitiveness of the Macedonian economy it is expected that the funds for the PCMPS measure will be increased. • PSRA is a standard measure with fixed allocated funds. It is not expected that these funds will be increased. |
| 4. Promote and sustain the creation and growth of innovative enterprises | Total: €175,000 <ul style="list-style-type: none"> • €28,000, part of the IVCS • €57,000, the measure PSTI • €40,000, the measure PSDCA • €50,000, part of PDECI | <ul style="list-style-type: none"> • Since the IVCS measure has been given increased attention and importance, an increase in the funds can be expected. • Funds for PSDCA are expected to remain at the current level. • PSTI is a new programme and due to the importance of the textile industry an increase in the funds is expected. • PDECI is a programme co-financed by the EU. As funds for the EEN network will be increased it is expected that the PDECI funds will also increase. |
| 5. Markets and innovation culture | Total: €81,000 <ul style="list-style-type: none"> • €50,000, the measure PTC • €31,000, part of the PCMPS | <ul style="list-style-type: none"> • PTC is one of the oldest measures and due to the known fund recipients and activities increase in the funds is not expected. • It is expected that the funds for the PCMPS measure will be increased. |

In 2010 three new measures, ELSR, PSTI and PPIPS were introduced. The planned funds for the realisation of the measure ELSR have significantly increased the funds for the research infrastructure that can be a base for innovation activities. The PSTI target the textile industry, which is mainly cut-and-sew production, to move it to full package production through the support of innovative projects. The PPIPS target two sectors, ICT as implementer and education as beneficiary. These three measures are also examples for sector-focused measures. While the PSTI is focused on the textile companies, the ELSR is sector-focused measure focusing on state universities and public scientific institutions as beneficiaries.

Although new measures were introduced in 2010, there were no changes in the balance of support provided through different forms and sources of funding. As in the previous years the majority of the funds were provided by the state budget. They were mainly allocated through grants and co-financing of the projects by the government. One change that was made was the increased government participation from 30% to 50% for the projects proposed by business community through the PTD.

Recently, a process has started for development of infrastructure for Venture capital and Angel investments. This process is in its very early stages.

Strong support to the innovation in Macedonia is provided through international programmes such as the Framework Programme Seven (FP7), the Competitiveness and Innovation Framework Programme (CIP) and EUREKA. The participation of organisations from the former Yugoslav Republic of Macedonia in EU funded programmes increases the cross-border knowledge circulation and enables them to get involved in activities through which they support their innovation activities and develop their innovation capacities. These funds are very important for the innovation system in the former Yugoslav Republic of Macedonia.

In the period 2007-2010 organisations from the former Yugoslav Republic of Macedonia have shown the biggest interest for the FP7 inter-government scheme. They have participated in 271 eligible proposals, with 47 proposals retained for funding with a total amount of €7.51m.

The former Yugoslav Republic of Macedonia has been a member of EUREKA since 2008. In this period the Republic of Macedonia has been involved in seven projects in the fields of industrial manufacturing and materials and biosciences and technologies. Four projects, with a total value of €3.45m, are still running, while three projects with a total value of €12.8m are completed. The total national value of the projects is €0.98m, and the total number of participants is 13. The structure of the participants is seven universities, one research institute, two large companies and one SME.

Through the CIP programme with funds of €90,000 per year and additional subsidy of €100,000 per year by the MES the European Information and Innovation Centre in the former Yugoslav Republic of Macedonia has been funded since 2008. The centre is a Macedonian partner in the Enterprise Europe Network.

Also, through the IPA programme the institutional capacity building as included in the implementation of the Industrial Policy 2009-2020 is supported with €2.8m.

Several programmes and instruments have been also created in Macedonia to support activities initiating and fostering innovation and development. The most important programmes for the country are the following: Central European Initiative Know-how Exchange Programme; Open Regional Fund for Foreign Trade Promotion in South-East Europe financed by German Federal Ministry for Economic Cooperation and Development; GTZ Technology Transfer Project; USAID funded projects for competitiveness and productivity through workforce development, innovation and infrastructure; Western Balkans Investment Framework established by the European Bank for Reconstruction together with the European Commission, the European Investment Bank and the Council of European Development Bank; etc.

Because the former Yugoslav Republic of Macedonia is a candidate country it is not yet eligible for the ERDF/ESF funds.

While a part of the measures in the country are sector-focused, still the majority of the measures are not sector specific.

The private-public partnership in the former Yugoslav Republic of Macedonia is still in development and is directly encouraged by the PTD.

2.2 Departmental and implementing agency budgets for innovation policies

The number of staff responsible for innovation and the innovation budgets of the responsible organisations in the former Yugoslav Republic of Macedonia is presented in Figure 3.

Figure 3 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 |
|--|--|---------------------------|---|
| Ministry of Economy www.economy.gov.mk | • 3.2 % (17 out of 531) | • €300,000 | <ul style="list-style-type: none"> • €57,000, PSTI, 19% • €85,000, PCMPS, 28% • €40,000, PSDCA, 13% • €50,000, PDECI, 17% |
| Ministry of Education and Science www.mon.gov.mk | • 10% (29 out of 295) | • €6m | <ul style="list-style-type: none"> • €50,000, PTC, 0.8% • €4.3m, ELSR, 72% • €120,000, PTD, 2% • €1.19m, PSRA, 20% |
| Agency for promotion of entrepreneurship www.apprm.gov.mk | • 100% (12 out of 12) | • €114,000 | • €48,000, IVCS, 42% |
| European Information and Innovation Centre http://www.eiicm.com.mk/ | • 100% (20 out of 20) | • €190,000 | • €50,000, PDECI, 26% |
| Ministry of Information Society and Administration | • 15% (17 out of 116) | • €1.0m ³ | • 100% public funds for PPIPS |

An important change in the budget provided to different ministries is the budget allocated to the MES for the programme ELSR. With this programme the funds available to the MES have significantly increased.

Another significant change is the support of the strategic development of the textile industry. The budget is allocated through the PSTI. The budget, although modest, provides incentives for the textile companies to start thinking about innovative projects and products that can add value and help them move towards full package services.

The change that affects the public sector innovation is the extension of the responsibilities of the Ministry of Information Society and Administration. The ministry is also responsible for the public administration and the digitalisation of the public administration activities. This puts the ministry in the centre of decision-making regarding public sector innovation.

³ The Ministry of Information Society and Administration reported a €10m innovation budget. Nevertheless, the estimate is that only around 10% of this budget is directly focused on innovation.

2.3 Future challenges for funding of innovation policy

One of the goals of the new Government, as presented in their election programme for the period 2011 – 2015, is economic growth through the increase of R&D and innovation expenditures and by providing incentives for innovations and new technologies.

Special attention in the next four years will be paid to the following activities, which will have an increase in their funding:

- development and commercialisation of new products, services and processes;
- stimulation of the introduction of new technologies;
- know-how transfer;
- partnership between the science and the business sector; and
- capacity building for stimulation of research and innovations.

The measures that are proposed in this programme are:

- establishing of equity and mezzanine investment funds;
- establishing of university spin-off companies;
- improvement of the technological cooperation in the frames of the clusters' associations;
- establishing of technology and innovation agency;
- grants for supporting technology transfer; and
- support of ecological innovations.

Since these activities and measures were given in the election programme, there might be some decrease in the number of activities and measures that will be realised in the near future.

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 4 Categorisation of demand-side policies

| Demand side innovation policy tool | Short description |
|--|---|
| Public procurement | |
| 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. ⁴ |
| 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 ⁵ . |
| Regulation | |
| 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. ⁶ |
| 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. ⁷ |
| Supporting private demand | |
| 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. ⁸ |
| 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. ⁹ |
| Systemic policies | |
| 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 ¹⁰ . |
| 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 ¹¹ , while user-centered innovation refers to innovation driven by end- or intermediate users. ¹² |

⁴ NESTA (2007) Demanding Innovation Lead Markets, public procurement and innovation by Luke Georghiou

⁵ http://ec.europa.eu/information_society/tl/research/priv_invest/pcp/index_en.htm

⁶ FORA, OECD: New nature of innovation, 2009, <http://www.newnatureofinnovation.org/>

⁷ Commission Communication: Towards an increased contribution from standardisation to innovation in Europe COM(2008) 133 final 11.3.2008

⁸ Edler, Georghiou (2007) Public procurement and innovation – Resurrecting the demand side. Research Policy 36. 949-963

⁹ Edler (2007) Demand-based Innovation Policy. Manchester Business School Working Paper, Number 529.

¹⁰ COM 2005 "Industry Policy" http://ec.europa.eu/enterprise/enterprise_policy/industry/index_en.htm and Mid-term review of industrial policy

¹¹ Chesbrough (2003) Open innovation. Harvard Business School Press

¹² Von Hippel (2005) Democratizing innovation. The MIT Press, Cambridge

3.1 Trends in the use of demand-side innovation policies

The main policies and laws that affect the innovation in the country have been adopted since 2008. Moreover, current policies and measures of innovation capability focus on supply-side and neglect aspects of demand that might stimulate or enable innovation in the country. Therefore, the potential of the demand-side innovation policy as a part of the innovation strategy in the former Yugoslav Republic of Macedonia has not been exploited yet. Also, the demand-side innovation measures are linked with only a few supply-side policies and measures, since the current innovation policies and measures mainly refer the supply side.

Since the independence of the country in 1991, the absence of the national innovation policies and appropriate measures has been compensated with two programmes, Programme for Technological Development (PTD) and Programme for Technical Culture (PTC). While the PTD mainly is a supply-side measure, the PTC includes several demand-side tools, like awareness raising campaigns, support to open innovation and user-centred innovation. Since 2009, several new complementary measures that affect demand-side innovation have been implemented in the country. The measures comprise procurement of innovative products and services, awareness raising activities, regulations, standardisations and financial incentives. They are not part of the integral innovation strategy, and are not always complemented with the supply-side measures. However, the demand-side innovation policy is becoming more relevant in the former Yugoslav Republic of Macedonia and it is expected that in the National Innovation Strategy for the period 2012-20 it will have a significant role.

The main ministry responsible for innovation policy, including demand-side innovation policy is the ME. The ministry sets the priorities of the innovation policy and selects policy tools for its realisation. Despite having become a key reference point for the development of innovation policy in the country, with regards to the demand-side policy the ME has not achieved its full potential, since the ministry's main attention was on the supply-side policies.

Other ministries that are active in creating and implementing the innovation policy in the country in their specific fields of responsibility, also take part in setting the priorities of the demand-side policy. The MES is particularly active in the area of increasing awareness through the PTC. Another ministry that proactively contributes towards adopting innovation developments in the country is the MISA. Due to its role in the development of the information society and reorganisation of the public administration through the adoption of innovative technologies, the ministry contributes to the adoption of both, supply-side and demand-side policies and measures. The MAFWM and MH also have minor roles in demand-side innovation governance.

Since the ME has the leading role in the development of the National Innovation Strategy for the period 2012-20, it is expected to strengthen its position in the demand-side innovation policy. Based on the Programme of the Government of the former Yugoslav Republic of Macedonia for the period 2011-2015 the new Technologies and Innovations Agency will be established by 2013 with the responsibility to coordinate and balance demand-side and supply-side innovation policies and measures.

The most popular tools used within demand-side innovation policy are awareness raising activities, regulations and standardisations. The awareness raising activities for innovation and the need to balance between demand and supply of innovation are common tools used by all ministries involved in innovation. The need for these tools is emphasised in main national policy documents since the innovation and R&D system in the country is underdeveloped, and there is a low awareness for the benefits of innovation. Part of the regulations and standardisations adopted in the country have also implications on demand-side innovation policies in the ICT sector, public sector, energy sector and production of food sector. In its main programmes, policies, strategies and laws the government envisages to adopt regulations and standards in

order to bring in new technologies and stimulate their development in specific sectors. The operational responsibilities for their implementation are delegated to appropriate bodies and state offices. The Agency for Electronic Communications in the former Yugoslav Republic of Macedonia is an independent regulatory body in the communication sector. The Agency's regulations have direct influence on the demand for innovations in the ICT sector. Furthermore, since the government adopted legislation and standards for adoption of innovative services in the education and public sector through usage of ICT, demand for innovative solutions is additionally increased. For the energy sector and food processing sector the regulations and standards that can increase demand for innovative products are proposed and adopted by the Energy Agency and State Office for food, respectively. The ME in the framework of the Strategy for Energy Efficiency until 2020 in several complementary measures which are not innovation specific, uses financial incentive tools for applying equipment and appliances with particular specifications, that indirectly increase the demand for sophisticated and innovative solutions. Through the measure PSDCA the ME stimulates a dialogue between users, producers and other innovation actors, in order to increase their levels of coordination and cooperation and thus smoothes the path of innovation. Furthermore, the MISA purchases the specific innovative products and services through public procurement, since the available solutions on the market do not possess the required specifications. This ministry is also responsible for public service innovation. In the framework of these objectives, the ministry launched a portal as a part of e-democratisation project, where tools for open and user-centred innovation are widely used.

The main barrier for implementing demand-side policies in the former Yugoslav Republic of Macedonia is the low awareness of the importance of innovation as the main driver for the economic prosperity in the country. This is also the main reason why the country has no separate innovation strategy yet, and consequently why the innovation priorities are only part of the other general policies.

The absence of effective monitoring and assessment procedures for innovation policies and measures could be also regarded as a barrier for the further development of demand-side policies, which should be balanced with supply-side policies and measures.

A weak economy, the absence of venture capital and the low purchasing power of Macedonian citizens are additional barriers, which slow down the adoption and implementation of demand-side policies and measures.

A more concrete linkage between demand-side and supply side innovation policies is expected within the new National Innovation Strategy for the period 2012-20.

The innovation system of the former Yugoslav Republic of Macedonia is evaluated in a few reports (European Innovation Scoreboard for 2010, Innovation Union Scoreboard 2010), and common findings are a low capacity of Macedonian companies for innovation, low awareness for the benefits of innovation and a lack of venture capital. The reports that evaluate specific measures, which belong to the demand-side innovation policy are part of the annual reports that the responsible ministries are obliged to submit. According to these reports the effects of the measures are mainly positive, but the general weaknesses of the innovation system are stressed as well.

Until now, there has been no effort to capture the possible impact of demand-side innovation policies and to determine the indicators according to which demand-side innovation policies will be evaluated. Moreover, up to now there is no integral national study or any national guideline recently conducted in the field of demand-side innovation policy.

3.2 Governance challenges

The main policies that include innovation aspects are usually generated by inter-ministerial working groups. However, the demand-side innovation measures, which are linked with concrete policies' priorities are mainly implemented within responsible ministries. Since demand-side measures are not strongly addressed in these policies, no specific coordination mechanisms are envisaged. However, for a more efficient coordination of innovation activities between the administration and involved stakeholders in the country, the establishment of additional institutions and associations have been envisaged. For this purpose, the Agency for Promotion of Entrepreneurship and the European Information and Innovation Centre were established. It is expected that the new Technologies and Innovations Agency will have a more concrete role in the coordination between demand and supply-side innovation policies. According to the Programme of the Government of the former Yugoslav Republic of Macedonia for the period 2011-2015, this agency will be established by 2013 and will provide additional institutional support for the innovation system.

Furthermore, for the implementation of a specific measure there is the possibility for the engagement of additional inter-ministerial teams. A concrete example for inter-ministerial coordination for a specific demand-side measure is the procurement of the innovative e-learning system for secondary level schools that can support innovative teaching methods. The procurement of the innovative product and the implementation of the measure were coordinated by the MISA and MES.

3.3 Recent demand-side innovation policy measures

The most recent demand-side innovation policy measure, which is envisaged in the National Strategy for Development of e-Contents 2010-2015 and the National Strategy for e-Inclusion 2011 – 2014, is the public procurement of innovative ICT products and services in the framework of several e-governance and innovative public service projects. The responsible ministry is MISA, but for specific measures it is possible to involve an additional ministry. The MISA, as a ministry responsible for developing the information society and reorganisation of the public administration through the usage of innovative ICT based products and services, is a leading ministry in the process of adopting the above-mentioned strategies and appropriate measures.

The National Strategy for Development of e-Contents defines the directions for a more successful and qualitative inclusion of ICT based products and services in education. The strategy and the complementing rulebooks provide detailed guidelines for the technical preconditions of the solutions, evaluation criteria and evaluation procedures in public procurement. Since the required solutions should support the educational processes in different levels of studying, all products and services have an innovation dimension because of the specific character of the educational system and learning materials. The required performances and functionalities of the products are published in the public tender. In order to encourage more companies to participate in the public calls, the ministry alone or with other institutions adopted regulations and standards in this field. However, no study exists on the influence of the regulations on the innovation developments. The ministry in coordination with the Bureau for Public Procurement in the former Yugoslav Republic of Macedonia have organised trainings for the entire procedure. In addition, detailed guidelines, along with the contract template are published on the ministry's web site. Through the public procurement of the above-mentioned services and products the MISA can simulate innovative services and products.

The goals of the National Strategy for e-Inclusion 2011 – 2014 that can initiate demand-side innovations are:

- increasing the availability of the internet and other information and communication technologies to all citizens, especially through involving persons that have limitations in usage of these technologies;
- increasing the coverage percentage of the country with broadband internet and improving the awareness and the capacities of the population to use ICT; and
- improving the availability of e-government services and increasing awareness about their benefits.

Two measures envisaged in the strategy that are conducted through the public procurement procedures for innovative ICT related products and services, are the following ones:

- development of a solution for language synthesis; and
- development of an e-democracy portal.

The e-democracy portal enables the application of other demand-side policy tools, such as awareness raising campaigns, open innovation and user-centred innovation in the field of e-governance and public sector innovation.

Financial incentive tools in demand-side measures, as an integral part of the Strategy for Energy Efficiency until 2020, are implemented by the ME. The strategy comprises goals, priorities and measures, which are not innovation specific. However, two of the measures refer to improving the use of renewable energy and investing in scientific research, education, and promotion of highly efficient technologies and appliances. These measures encourage the use of equipment and appliances with particular specifications that indirectly increase the demand for sophisticated and innovative solutions.

Through the PSDCA measure, the ME stimulates mutual cooperation in clusters and networks in the fields of development, procurement, sale, extending knowledge and mutual innovative solutions, common approach on the market, common promotion, common trainings for creation of more efficient labour force, etc. Eligible participants in clusters are R&D institutions, technological centres, companies and other innovation actors, which are encouraged to develop new products and services through the usage of internal and external resources.

Moreover, the ME is responsible for the PDECI. A considerable share of the budget for this measure is used for increasing the awareness of SMEs about innovation through trainings, promotion activities and campaigns. Awareness raising activities are also part of the PTC, which is under the responsibility of MES.

Figure 5 Key demand-side policy measures

| Measure name (duration) | Short description of objectives, main activities or types of funding support, etc. | Key implementation details |
|--|--|---|
| Public Procurement of Innovative ICT based Products and Services in Education – e-Content (PPIPS) | <ul style="list-style-type: none"> • Purchasing innovative products for education – e-contents • ICT sector implements | <ul style="list-style-type: none"> • 100% public funds • MISA and MES are responsible organisations • Educational institutions are beneficiaries |
| Programme for Support and Development of Clusters’ Associations (PSDCA) | <ul style="list-style-type: none"> • increase the levels of coordination and cooperation between innovation actors • not sector specific • co-financing by stakeholders | <ul style="list-style-type: none"> • €40,000 public funds • ME is responsible organisation • All stakeholders involved in innovation are target groups |
| Programme for Development of Entrepreneurship, Competitiveness and Innovation of SMEs (PDECI) | <ul style="list-style-type: none"> • co-financing of business centres and business incubators • increasing the awareness about innovation • not sector specific • co-financed by CIP | <ul style="list-style-type: none"> • €100,000 public funds • ME with European Information and Innovation Centre are responsible organisations • SMEs are target groups |

3.3.1 Sectoral specificities

The demand-side innovation measure that addresses specific sectors is the Public Procurement of Innovative ICT based Products and Services in Education – e-Content. The measure is planned in the National Strategy for Development of e-Content. The ICT sector implements this measure, and the beneficiaries are the educational institutions in the former Yugoslav Republic of Macedonia. This is the only case in the country where the applied tool is public procurement of innovative products and services. The responsibility is shared between the MISA and ME.

3.3.2 Good practice case

Case 2 Public Procurement of Innovative ICT based Products and Services in Education – e-Content

| |
|--|
| <p>The measure was launched in 2010 through the National Strategy for Development of e-Contents. Its main objective was to introduce e-learning system in secondary level schools in the country, which comprises innovative teaching methods based on ICT products and services.</p> <p>The measure includes a detailed rulebook for the implementation process. Since the measure was adopted in 2010, there is still no evidence for its success.</p> <p>Do:</p> <ul style="list-style-type: none"> • pay attention on sustainability of the measure, and consider involvement of private co-financing. <p>Don't:</p> <ul style="list-style-type: none"> • exclude end users in the specification of the required product's performances. |
|--|

Appendix A Research and innovation policy measures for the former Yugoslav Republic of Macedonia

| Name of the Support measure | 1 st Priority | Start date | End date | Status (CC to complete) | Estimated public budget in 2010 in euro | Comment |
|---|--|------------|----------|-------------------------|---|---|
| Equipping Laboratories for Scientific Research and Applicative Activities | 2.1.4 Research Infrastructures | 2009 | | Continuing | €4.3m | • This measure is added in the repository |
| Programme for Support of the Textile Industry in the Republic of Macedonia | 2.3.1 Direct support of business R&D (grants and loans) | 2010 | | Continuing | €57,000 | • This measure is added in the repository |
| Innovation Voucher Counselling Scheme | 4.2.1 Support to innovation management and advisory services | 2005 | | Continuing | €48,000 | • This measure is added in the repository |
| Programme for Technical Culture | 5.1.1 Support to the creation of favourable innovation climate (ex. road shows, awareness campaigns) | 1995 | | Continuing | €50,000 | • This measure is added in the repository |
| Programme for Competitiveness of the Macedonian Products and Services | 5.3.2 Consultancy and financial incentives to the use of IPR | 2000 | | Continuing | €85,000 | • This measure is added in the repository |
| Programme for Support and Development of Clusters' Associations in the former Yugoslav Republic of Macedonia | 1.3.1 Cluster framework policies | 2005 | | Continuing | €40,000 | • This measure is added in the repository |
| Programme for Development of Entrepreneurship, Competitiveness and Innovation of SMEs | 4.3.1 Support to innovative start-ups incl. gazelles | 2000 | | Continuing | €100,000 | • This measure is added in the repository |
| Programme for Technological Development in the former Yugoslav Republic of Macedonia | 2.2.3 R&D cooperation (joint projects, PPP with research institutes) | 1995 | | Continuing | €120,000 | • Existing measure |
| Programme for Scientific and Research Activities in the former Yugoslav Republic of Macedonia | 2.1.1 Policy measures concerning excellence, relevance and management of research in Universities | 1995 | | Continuing | €1.19m | • Existing measure |
| Public Procurement of Innovative ICT based Products and Services in Education – e-Content | 2.2.1 Support infrastructure (transfer offices, training of support staff) | 2010 | 2015 | Continuing | 100% public | • This measure is added in the repository |