December 2011

Mini Country Report/Russian Federation

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)

December 2011

Authors: Manfred Spiesberger, Centre for Social Innovation (ZSI) and Daria Zimina, Independent Consultant

Table of Contents

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

Innovation policy making and implementation in Russia are concentrated in the responsible ministries, above all in the Ministry of Economic Development, the Ministry of Education and Science, the Ministry of Industry and Trade. An important procurer of military related innovations is the Ministry of Defence. Key policy-making and advisory functions fulfil commissions for high-tech and innovation with the president and the government. The traditional top-down and centralised policy-making was reinforced in the last years, as several agencies (e.g. Federal Agency for Science and Innovation) subordinated to ministries were dissolved and reintegrated in the ministries.

Innovation activities are performed in Russia mainly in major research-intensive state-owned companies (e.g. Rosatom) and agencies (e.g. Federal Space Agency). The private business-enterprise sector shows some promising signs, especially in ICT, but in general its R&D and innovation investment remains at a rather low level. Business-enterprises financed in 2009 only 26.6% of Gross Domestic Expenditure on R&D (GERD).

The portfolio of innovation stimulation measures has been substantially expanded over recent years. Venture funding was introduced through the Russian Venture Company and through Rusnano for the nanotechnology sector in particular. Tax incentives and special economic zones for technology development were set up. Technology Platforms involving businesses and research institutions were supported, and innovation activities within universities and their cooperation with business have been stimulated with new funding instruments. In the future, it will be important to focus on a proper and long-term implementation of these measures; monitoring and evaluation, which are still weakly developed, would be helpful in this context.

Demand-side policies are focused on procurement of R&D and of innovative goods and services. Russia's main competitive R&D and innovation funding tools, the Federal Targeted Programmes are implemented according to procurement rules. Most procurement is tendered by the Ministry of Industry and Trade, the Ministry of Defence, the Ministry of Education and Science, the Federal Space Agency and Rosatom. Procurement suffers from rigid legislation, corruption, lack of competition and transparency. Other demand-side measures concern awareness-raising: for example an important nanotechnology event is organised annually since 2008 with the Rusnanotech Forum.

Several challenges are posed to innovation policy-making. The framework conditions for innovation activities remain difficult in the country. Rigid regulation, weak enforcement of regulation, and corruption hamper innovation activities and the development of innovative companies. Innovation policy is driven by governmental bodies. Stimulating business-enterprise R&D and innovation spending through improved framework conditions and a lesser role of the government sector in the economy needs to be tackled.

1. Innovation policy trends

1.1 Trends and key challenges for innovation policy

The first and last TrendChart report on Russia was published in 2007.[1] While innovation policy was already highlighted as important in the last report and measures were available (e.g. Russian Technology Transfer Network), since then innovation has come high on the policy agenda in Russia and new measures were rolled out.

Competitive R&D and innovation funding was strengthened through a range of Federal Targeted Programmes (FTPs), e.g. the most important one, the FTP R&D in Priority Fields of the S&T Complex of Russia (2007-2013). Tax incentives were introduced. Venture funding has been another policy focus: the Russian Venture Company (RVK) was established in 2006 and Rusnano, an investment vehicle for the nanotechnology sector, was set up in 2007. Innovation infrastructure was enhanced trough the establishment of technoparks and of special economic zones for technology development. The latest initiatives concern a flagship innovation zone in Skolkovo (near Moscow) and the selection of Technology Platforms in 2011.

The economic crisis in 2008/2009 brought the limitations of a resource-based economy to the attention of policy makers with renewed urgency. For some time the most relevant issue is the approach to better use the knowledge and research base, which is available and which has an important tradition in the country for innovation activities and for economic development purposes.

Innovation strategy is formulated in the currently still valid Concept of Long-term Socio-Economic Development of the Russian Federation for the Period up to the year 2020, and in the Strategy for the Development of Science and Innovation in the Russian Federation up to the year 2015. A new innovation specific strategy, Innovative Russia – 2020, is under preparation under the auspices of the Ministry of Economic Development. A draft of the strategy was presented in late 2010, which stimulated a wide discussion. The current status of the national innovation system is assessed in the strategy and proposals how to improve it have been made.[2] Major issues for developing innovation activities are outlined: human resources development, stimulating innovation activities in the business-enterprise sector, enhancing the output of R&D, innovation infrastructure and international cooperation. A review of Russia's innovation policy was conducted by the OECD on the request of the Russian Ministry of Education and Science and published in 2011.[3]

[1] See http://www.proinno-europe.eu/page/innovation-and-innovation-policy-russia

[2] A view from foreign investors on Russia's innovation policy and its challenges is provided in the Foreign Investors Advisory Council's (FIAC) White Paper Russia's Modernization and Innovation from the Perspective of Foreign Investors, 2010, http://www.fiac.ru/surveys-2010.php

[3] OECD (2011) OECD Reviews of Innovation Policy: Russian Federation 2011, http://www.oecd.org/document/58/0,3746,en_2649_34269_48088442_1_1_1_1,00.html

Assessments usually find out that policy fails to stimulate significant private sector R&D and innovation investment. The innovation system is marked by big state agencies and state-owned companies, which dominate several of the research and technology intensive sectors. This concerns the Federal Space Agency for the space sector, the United Aircraft Corporation for the aeronautics sector, Rostekhnologii for the defence and other technology sectors, and Rosatom for the nuclear sector. Rosatom for example is an industrial behemoth with around 300,000 staff, around 250 subordinated companies and research institutes, and a procurement budget of more than €5b per year.[4] It covers the whole nuclear cycle from primary goods (uranium) production, construction of nuclear power stations, power generation, research and technology development in the nuclear field, recycling of nuclear waste, to supervision of nuclear and radiation safety.

Only a limited number of truly private companies, especially few high-tech SMEs are active in innovation in Russia. The state has an overly important role in the economy. But some promising sectors with significant private activities have developed nevertheless. This concerns the ICT sector at the first place, where several companies (e.g. Kaspersky Labs, Sistema) have become international players.

Overall, framework conditions are not conducive to private sector development. Regulation (e.g. taxes, import/export rules, procurement) and especially its application and administration remain a main barrier to innovation activities in the country. Some regulatory improvements can although be noted. Legislation in the field of intellectual property rights (IPR) was improved and in 2009 a law came into force, which facilitates spin-offs from universities and public research organisations and which regulates transfer of IPR in this case.

Human resources are in general well educated, but an ageing of researchers and a limited awareness of innovation activities among researchers are limiting factors. More recently the innovative capacities of universities came into focus. Stimulation tools for strengthening their innovation activities were introduced by the Ministry of Education and Science.

1.2 Innovation governance

The main ministerial players in Russian innovation policy-making and implementation are the Ministry for Economic Development (Mineconomrazvitiya), the Ministry of Education and Science (Minobrnauki), and the Ministry of Industry and Trade (Minpromtorg). Agencies for policy implementation have lost in relevance and a certain re-centralisation of policy-making and implementation within the ministries can be observed: the Federal Agency for Science and Innovation (which was responsible for implementation of major competitive FTPs for R&D and innovation) and the Federal Agency for Education were both dissolved in 2010. They were under the Ministry of Education and Science and were reintegrated in the ministry. The Agency for Information Technologies (which was among other duties responsible for IT technoparks) was also dissolved in 2010 and integrated in the Ministry of Communications and Mass Media. Finally, an agency responsible for the Special Economic Zones under the Ministry of Economic Development was also re-integrated in this ministry. Other ministries relevant for applied research and innovation activities are the Ministry of Defence, the Ministry of Health, and the Ministry of Energy.

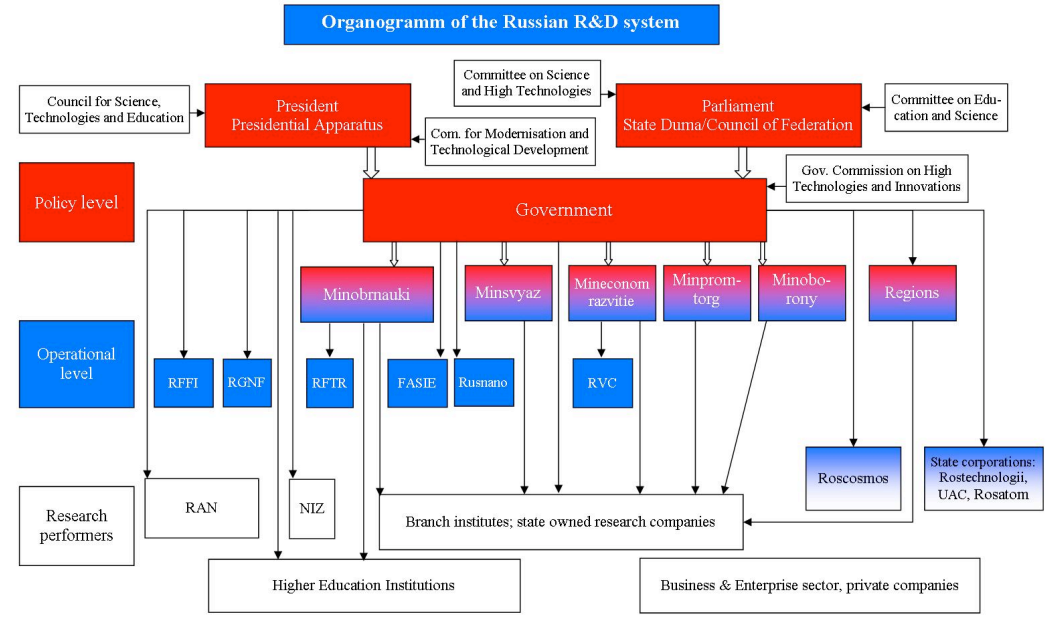
[4] See Rosatom website and the interview with the General Director Sergey Kiriyenko for Radio Ekho Moskvy of 6 October 2011: http://www.rosatom.ru/wps/wcm/connect/rosatom/rosatomsite/journalist/interview/b86d9700489a2499bd52fddb97771387

Research and innovation policy is coordinated at the governmental level by the Governmental Commission on High Technologies and Innovations. An important innovation advisory body to the President is the Commission for Modernisation and Technological Development of the Russian Economy. The latter commission was established especially to push the modernisation agenda of the President.

For policy implementation several funding bodies are in place besides the ministries: the Foundation for Assistance to Small Innovative Enterprises (FASIE), the Russian Foundation for Technological Development (RFTR), the State Corporation for Nanotechnologies – Rusnano, and the Russian Venture Company. Some important research institutions have a mixed set of tasks, including research performance, innovation activities and policy implementation. This concerns for example the Federal Space Agency: it is a major research organisation and at the same time it is responsible for implementing the Federal Targeted (funding) Programme for the space sector.

Policy analysis and support for priority setting in innovation policies is provided by think-tanks (e.g. the State University – Higher School of Economics or the Interdepartmental Analytical Centre) to ministries or innovation stimulation bodies such as Rusnano. Foresight exercises have become an important analytical tool in Russia, which are applied by think-tanks to support policy-making and priority setting. Evaluation and monitoring of innovation policies are still weakly developed; moreover several stimulation measures have been introduced only very recently and few data and results are therefore yet available.

Chart 1 Organisation chart of the Russian R&D and innovation system



Abbreviations:

Minobrnauki - Ministry of Education and Science,
Minsvyaz - Ministry of Information Technologies and Communication
Mineconomrazvitie - Ministry of Economic Development
Minpromtorg - Ministry of Industry and Trade
Minoborony - Ministry of Defence

RFFI - Russian Foundation for Basic Research
RGNF - Russian Foundation for Humanities
FASIE - Foundation for Assistance to Small Innovative Enterprises
RFTR - Russian Fund for Technological Development
NIZ - National Research Centres (pilot: Kurchatov Inst.)

Rusnano - Russian Corporation of Nanotechnologies
RVC - Russian Venture Company
RAN - Russian Academy of Sciences (RAS)
Roscosmos - Federal Space Agency
Rostechnologii - State Corporation Russian Technologies
UAC - United Aircraft Corporation
Rosatom - State Corporation for Nuclear Energy

1.3 Recent changes in the innovation policy mix

As highlighted in the overview chapter above, several new innovation stimulation measures were launched in the years since the last report. These measures are targeting the right issues, but still have certain flaws or suffer from framework conditions that block their full stimulation capacity; some are de-facto not yet working properly.

The importantly diversified portfolio of innovation measures includes now also the following new tools:

Venture Funding: the Russian Venture Company (RVK) has been set up in 2006 by the state as a fund of funds and disposes of a founding capital of more than RUB 30b (€ 750m). It invests into the development of Russian venture infrastructure, and sets up specialised venture funds in Russian thematic priority fields. Meanwhile 12 different venture funds under RVK are operational, whereby two are established under foreign law (in the UK) and some others have foreign participation. Half of the founding capital of RVK has been invested in the sub-funds.

For nanotechnologies the state corporation Rusnano was established in 2007. It received a considerable founding capital of RUB 130 billion (€ 3.71 billion) from the federal budget. Rusnano has the role of an investment fund, which invests in close to the market technology development and into commercialisation of results of nanotechnology research. Rusnano uses various tools such as investment in equity of the company, loans, credit guarantees and leasing operations. It has also set up a venture fund for its commercialisation projects. Nanotechnology is interpreted in a rather broad sense by Rusnano and investment projects cover applications in construction, renewable energies, coatings, etc.

Technology Platforms (TPs) were introduced as new tool in 2011. They shall stimulate inter-sectoral cooperation among business, research institutes, universities and governmental organisations. In spring 2011, following a call, 27 TPs were selected for support. The selected TPs highlight thematic priorities in the innovation field: some 11 deal with energy related topics (nuclear energy, oil and gas, alternative energies, etc.). Another five TPs deal with nanotechnologies and new materials. Other fields with more than one TP are space and ICT (Governmental Commission, 2011). These TPs are coordinated mostly by big R&D intensive state owned companies (e.g. Rosatom) or governmental R&D funding bodies (e.g. Rusnano). It remains to be seen, how far private businesses will collaborate on TPs, how far TPs will reach beyond the usual topical fields, and whether they will not be another support tool focusing on the big state-owned R&D players.

Strengthening **R&D and innovation activities of universities** has come more and more on the agenda of the Ministry of Education and Science. A tool for stimulating university-business cooperation was launched in 2010 and two calls were implemented. Overall 112 projects received financial support of maximum RUB 100m per year (€ 2.9m) and per project. The business partner in the project needs to provide co-funding of the project with at least the same amount as the public support. Another programme of the ministry targets enhancing innovation infrastructure of universities (innovation curricula, Technology Transfer, etc.).

An important development can be observed at the **regional level,** where innovation support is gaining in importance: regional venture funds and innovation infrastructure (e.g. technoparks, incubators) have been set up. Regional (e.g. Tatarstan) and municipal (e.g. Moscow) funding programmes for R&D and especially innovation activities have been established.

Tax incentives or the **Skolkovo Innovation Centre** are other recent innovation stimulation tools, which are dealt with in more detail further below.

The clear focus of policy and of innovation stimulation measures is on commercialisation of research and getting ideas to the market. Several of the EU's Innovation Union priorities are not yet an important issue in Russia; this concerns for example social innovation or service innovation. They are not well anchored in the economic tradition of the country, where production of consumer goods and services as well as individual needs in general were traditionally not highly ranked.

1.4 Internationalisation of innovation policies

Russia increasingly tries to internationalise its innovation activities. This is caused by complementary expertise and close cooperation links with certain partner countries, and the interest to source know-how from abroad. Internationalisation measures are focused on cooperation with the EU, its Member States and countries associated to the FP7. Several initiatives are relevant in this context.

First the EU's 7th Framework Programme for RTD (FP7) needs to be mentioned as major international cooperation tool. Russia is one of the strongest participants in the FP7 among those countries, which are not EU Member States or countries associated to FP7. A range of close to the market projects involving Russian organisations were supported under the FP7, for example in aeronautics, etc. Within the FP7 coordinated calls between the EU and Russia were organised and projects jointly funded from the FP7 and Russian sources (from different ministries).

The Foundation for Assistance to Small Innovative Enterprises has established in the last years since joint stimulation instruments at the bilateral level with partner organisations in Germany (International Bureau of BMBF), France (OSEO) and Finland (TEKES). At the multilateral level it has participated in a call for innovation projects in the frame of the ERA.Net RUS project, an FP7 funded measure for coordination of bilateral programmes in 2011. In this call 10 multinational innovation projects were supported, involving research organisations and companies from Russia, Germany, Israel, Switzerland, Greece and Turkey.

Russia is member of EUREKA, the European programme targeted at supporting cooperation among innovative SMEs since 1993. Russian organisations have participated in 102 projects since then (status in September 2011), but this share is rather low as compared to other EUREKA member countries.

Russia and the EU have entered into a Modernisation Partnership, through which innovation cooperation is also fostered, for instance standards and regulation are discussed in this framework.

The recently introduced innovation tools of Rusnano and RVK are open to international participation: foreign companies may apply for Rusnano funding, (as long as they set up business in Russia) and Rusnano has created investment funds with foreign partners (Russian-Kazakh and Russian-Israeli funds). Also some RVK venture funds were established with participation of foreign capital.

The new innovation flagship project, the Skolkovo Innovation Centre, is in general conceptualised as an international venture. Foreign experts are included in the governing bodies of the Centre and firms from the EU and the US are attracted to establish subsidiaries. Incentives are provided in the form of up to date infrastructure, an attractive location close to Moscow and its major research institutions, tax and customs incentives.

Moreover, it needs to be highlighted that many leading research institutions have close contacts and projects with foreign firms (e.g. Cisco, Schlumberger, Siemens, etc.) and are therefore quite well linked internationally.

1.5 Evidence on effectiveness of innovation policy

Several assessments of the innovation system as such and of policy measures have been undertaken (e.g. OECD 2011), but to a much lesser extent of specific policy measures. The assessments have highlighted a range of critical issues for the effectiveness of policy.

A key challenge constitutes framework conditions for innovation activities. Enhancing and adapting regulation to the needs of R&D and innovation, combating overregulation and ensuring a proper administration and enforcement of regulation are issues to be tackled. The "rule of law" is not yet guaranteed in Russia.

Another major challenge for policy-making will be to oversee a proper implementation of the available portfolio of innovation stimulation measures so that they can have a real impact. A broad range of measures (venture funding, technology platforms, etc.) has been introduced over the last years, but some of them are suspected of not working well yet, e.g. Special Economic Zones and tax incentives.

A third challenge is the stimulation of business R&D and innovation funding, especially from SMEs and truly private companies. The issue of increasing business funding has been mentioned as priority in several consecutive strategic documents. For the moment the role of the state in the economy is rather strong. Major R&D intensive companies are fully or partly state-owned; for example the state nuclear company Rosatom, the United Aircraft Corporation, etc. Privatisation efforts and improvements in regulation would have important repercussions on private sector development and increased R&D and innovation investment.

A relatively renowned instrument for start-up and seed funding of small innovative companies is the Foundation for Assistance to Small Innovative Enterprises, which is highlighted below as a good practice case.

Case 1 Foundation for Assistance to Small Innovative Enterprises (FASIE)

FASIE programmes

The Foundation for Assistance to Small Innovative Enterprises (FASIE) implements innovation support measures since 1994. Several funding tools have been developed by FASIE for specific aims: its main programme, START, provides support for market oriented R&D of small innovative companies (which may be undertaken jointly with research institutions) and for establishing of start-up companies. Its second main programme, UMNIK, is designed for young scientists, who wish to commercialise innovative ideas. Programmes are implemented according to the public procurement law and support is provided in the form of grants.

The measure targets an important need in the Russian innovation system, in that it focuses on developing small innovative companies. The Russian economy is marked by a dominance of big state owned companies, whereas the SME sector is still relatively weak.

The measure has proven adaptive to a changing innovation environment. New funding instruments were introduced or existing instruments adapted to changing needs. For example during the financial crisis in 2008-2009, a specific anticrisis programme for supporting small innovative companies suffering from a temporary slump in demand was introduced. But financial means of FASIE are limited and happen to come under pressure from other innovation stimulation priorities: for 2012 substantial cuts to the FASIE budget may be applied on a proposal of the Ministry of Finance.

For further information: http://www.fasie.ru (in Russian)

2. Innovation policy budgets – an overview

2.1 Trends in funding of innovation measures

R&D and innovation funding has changed substantially over the last decade in Russia. Competitive funding allocation has been growing importantly and constitutes now well above 50% of civil R&D funding. This process has been accelerated in recent years especially through Federal Targeted Programmes (FTPs) for competitive R&D and innovation funding.[5] Venture funding has gained in importance through governmental stimulation measures (e.g. RVK, Rusnano). Indirect funding measures (e.g. tax incentives) were introduced. However, the legacy of a strong governmental planning approach is still present in the current system: innovation activities are concentrated in public research institutions, state-owned companies and design bureaus, whose budgets are directly allocated from the federal budget or through FTPs with no or only limited competition.

Figure 1 below and the analysis of the budgetary trends in the following are based on the set of measures indicated in the Appendix A.

In 2010, the roughly calculated total budget for the listed measures was €3883m; this surpasses by more than 20% the budget in 2009. The majority of the measures – almost 83% - fall into the "Research and Technology" category of the Trendchart classification. They cover mostly a broad spectre of R&D and innovation activities, ranging from applied research to industrial implementation. The funds are spent on labour costs, on investment in facilities and on infrastructure, which can be used at any stage of the innovation cycle.

The category "Human Resources" makes up 8.3% of funding. Development of human resources is one of the priorities in Russia's innovation strategy. The third and the fourth categories, each of them including one measure only, have 7.3% and 1.8% correspondingly.

The balance between the categories did not change much over the past two years. Nevertheless there have been several internal shifts. First of all, many of the support measures experienced budget cuts in 2009-2010, which were explained by the negative impact of the financial and economic crisis. In 2011 most of the budgets were brought back to initially planned levels and some of the Federal Targeted Programmes originally due to finish between 2010 and 2012, were prolonged for an extra year. For example the FTP "Development of Infrastructure for Nano-Industry in the Russian Federation" did not finish in 2010 as it was planned, but was extended to 2011. Second, there were a number of new measures introduced in 2010, specifically for enhancing research and innovation in the Russian universities and for the Skolkovo Innovation Centre project. Third, the government attempted to attract more co-financing from the private sector for research and innovation projects. FTPs are conceived in a public-private partnership approach, whereby business and other non-budgetary funding should make up a significant share of an FTP's budget. The availability of actual figures is limited to only some measures, what makes it difficult to perform an analysis of the recent trends. However, policy makers voiced on several occasions that co-funding shares could not be reached as was planned in programming documents.

[5] See for the most relevant new initiatives the list in the Appendix A.

As for the funding sources the general picture has remained the same. Most of the funding for the support measures comes from the national public budget. The role of the regional financing is significant for the special economic zones, where regional authorities and large municipalities within the zone contribute to the development and infrastructure budgets. Regional venture funds have been established and regional or municipal R&D and innovation funding tools are available. In comparison to funding from the federal level, regional funding is still rather low.

Competitive, programme based innovation funding, especially via FTPs, is allocated through public procurement procedures (state contracts). In the block funding mode, which is non-programme based, innovation support grants are allocated directly from the Federal Budget to the research organisation and enterprises. Venture capital for innovation is provided through RVK and Rusnano and is also planned to be launched under the Skolkovo project. The Skolkovo fund will work as a fund of funds and is hoped to repeat the success of the Israeli Yozma and similar enterprises.

The entire system of competitive funding of innovation and research is focused on the thematic priority fields approved by the president.[6]

- Security and counter-terrorism;
- Industry of nanosystems;
- Information and telecommunication systems;
- Life Sciences;
- Advanced weapons, military and special technologies;
- Sustainable use of environment;
- Transport and space systems;
- Energy efficiency, energy saving, nuclear energy.

Among the FTPs listed in the Appendix A, three have a narrower thematic focus and are designed for support of a specific sector: the Federal Space Programme, FTP Development of Civil Aviation Technology, and FTP Development of Infrastructure for Nano-Industry. Together they account for 61% of total funds in 2010 among the listed measures.

[6] Presidential Decree No. 899 of 7.7.2011

Figure 1 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	• no measures under this category	
2. Research and Technologies	• €3208.87 m, from which 93% are allocated via public procurement system (state contracts) and 7% via grants	• This is a sum of actual budgets for six measures added with a sum of planned budgets of another three measures (€310,7m). • The figure is public expenditure only and does not include any co-financing from private sector or other sources. • Although the bigger part (app. 80%) of the indicated budget goes to R&D support, it also includes indirect expenditures, such as capital investment, equipment purchase, etc. • Only measures shown in the appendix A were included in the category. These are only part of the state support to innovation activity in the country. The figure should be used carefully in the analysis.
3. Human Resources (education and skills)	• €320.42 m, from which 95% are state contracts and 5% are grants	• Actual expenditure for 2010. Federal budget only. • a twofold growth compared to 2009 • Only measures shown in the appendix A were included in the category. These are only part of the state support to innovation activity in the country. The figure should be used carefully in the analysis.
4. Promote and sustain the creation and growth of innovative enterprises	• €72.29 m, 100% grants	• Actual expenditure for 2010 • Only one measure in the category – grant allocation programmes run by FASIE
5. Markets and innovation culture	• €281.58 m, plus non quantifiable tax incentives	• Planned budget • The figure stands for state investment into the four innovation based Special Economic Zones. These funds only indirectly support the innovation process via creation of facilities, zones infrastructure, etc.

2.2 Departmental and implementing agency budgets for innovation policies

Figure 2 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 Economic Development	• n/a	• €495m	• 100% -development of Special Economic Zones (all 16 zones included, from which only 4 are innovation focused), Technology Platforms
Ministry of Education and Science of the Russian Federation	• approx. 20%	• €3,141.97 m, out which 92% is for Science, research and staff development, 8% - innovation budget	• 80% of Ministry science and innovation budget goes via programmes with set KPIs. • 53% is dedicated to basic science and staff development • 20% for integration of education and science, staff development, HEI • 3% is dedicated to creation of infrastructure for the National System of Innovation • 2,7% is directed to support of SMEs
Ministry of Industry and Trade	• n/a	• €702.75 m	• 80% goes to the FTP "Development of Civil Aviation Technology of Russia in 2002-2010 and up to the year 2015"
Ministry of Defence	• n/a	• n/a, but significant	• n/a; procurement of military technology
Federal Space Agency	• n/a	• €2,162.66 m out of which 50-55% is dedicated R&D budget	• 90% of the R&D budget goes through the Federal Space Programme of Russia 2006-2015
Rosatom	• Innovation management department	• €98.1 m	• 51% for FTP "Nuclear Technologies of new generation 2010- 2015"
FASIE - Foundation for Assistance to Small Innovative Enterprises	• approx. 40	• €85.05 m	• 85% seed and start-up capital
Rusnano – Russian Corporation of Nanotechnologies	• approx. 400	• €1,130m	• 73% for innovation projects, innovation infrastructure, venture funds • 5% for European XFEL
RVC – Russian Venture Company	• 64	• €750m	• Statutory fund – invested in venture funds
Moscow State University (MSU)	• n/a	• €100.48 m, of which 56% is supplied by the Federal Budget. • The figure above stands only for the financing of the MSU development programme and does not include possible relevant funds available in the main budget.	• 100% for financing of the MSU development programme

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 Communications and Mass Media	• n/a	• €37.6m	• IT technoparks
President executive office	• n/a	• €6.79 m	

The Ministry of Education and Science, the Federal Space Agency (Roscosmos), the Ministry of Defence, Rosatom and the Ministry of Industry and Trade altogether manage most of the state science and innovation budget. Another important player is the Ministry of Economic Development, which supports Technology Platforms and a number of the Special Economic Zones, which provide a special tax regime for R&D performing enterprises on their territories. FASIE funds, which are used exclusively to support innovation, occupy an important position in the Russian innovation system too.

In 2009-2010 the science and innovation budgets of the majority of the agencies and ministries were significantly cut due to unfavourable economic conditions. The situation has however improved, and the lack of funding in the foregoing years will be compensated to a certain extent (but not entirely) over 2011-2013. Roscosmos was the only government body whose level of financing increased substantially over the same period – the 2010 budget is almost twice as big as the 2008 budget.

It is rather difficult to get a clear picture of innovation funding for Russia, as budgetary figures are not fully transparent (especially for defence) and spread over a broad range of measures and governmental bodies. Venture funding of RVK and Rusnano is invested over longer time periods and exact annual figures are not available. In addition, significant amounts are spent through procurement of innovative goods and services (see for more details section 3 below).

2.3 Future challenges for funding of innovation policy

Innovation funding has been developing dynamically over the last years. Large scale projects such as the Skolkovo Innovation Centre, Rusnano, RVK, etc. were launched since 2006. Now it will be important to stabilise the system and focus on a proper implementation of measures so that they will generate reasonable results.

While the government declares itself to be ready to provide the necessary support for the innovation system, it has several challenges to cope with. The first challenge is to ensure the efficient use of the available budget. Combating corruption, transparency of financial flows, enhancing competition within FTPs, performance measurement, several legislative obstacles are the issues still to be solved. The second big challenge is to activate private sector investment.

Major work for improving the situation has been done over the last years. An innovation funding system, which was traditionally based on direct funding through grants to subordinated institutions is moving more and more towards competition-based funding. The competitive budget distribution via programmes has for some state bodies already reached 80% (e.g. the Ministry of Education and Science), but on average it remains somewhere slightly above 50%, offering room for improvement. An increased proportion of programme funding and a decrease of non-programme funding are expected in the next years.

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 3 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.[7]
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[8].
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.[9]
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.[10]
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. [11]
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.[12]
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[13].
Support to open innovation and user-centered innovation	Open innovation can be described as using both internal and external sources to develop new products and services14, while user-centered innovation refers to innovation driven by end- or intermediate users.[15]

7 NESTA (2007) Demanding Innovation Lead Markets, public procurement and innovation by Luke Georghiou
8 http://ec.europa.eu/information_society/tl/research/priv_invest/pcp/index_en.htm
9 FORA, OECD: New nature of innovation, 2009, http://www.newnatureofinnovation.org/
10 Commmission Communication: Towards an increased contribution from standardisation to innovation in Europe COM(2008) 133 final 11.3.2008
11 Edler, Georghiou (2007) Public procurement and innovation – Resurrecting the demand side. Research Policy 36. 949-963
12 Edler (2007) Demand-based Innovation Policy. Manchester Business School Working Paper, Number 529.
13 COM 2005 "Industry Policy" http://ec.europa.eu/enterprise/enterprise_policy/industry/index_en.htm and Mid-term review of industrial policy
14 Chesbrough (2003) Open innovation. Harvard Business School Press
15 Von Hippel (2005) Democratizing innovation. The MIT Press, Cambridge

3.1 Trends in the use of demand-side innovation policies

Demand-side innovation policy is not an explicit policy strategy and not a widely discussed concept, but it is implicitly quite relevant in Russian innovation policy making. In the draft Innovation Strategy 2020, some demand side policies are discussed. A short chapter is dedicated to public procurement of innovative goods, and improvement of regulation is highlighted as crucial for stimulating innovation activities.

Public Procurement is a very important, but rather ambiguous tool in Russia. Supply side and demand side elements cannot be clearly separated in several R&D and innovation funding programmes (especially Federal Targeted Programmes), as these funding programmes are implemented according to public procurement rules and the related law (94-FZ). The FTPs are therefore close to pre-commercial procurement of R&D.

The Ministry of Economic Development oversees public procurement and is responsible for legislation in the field. Control of practical implementation is performed by the Federal Antimonopoly Service.[16] Tenders are published at the federal procurement web-portal.[17] For the defence sector, a specialised agency has been established, the Federal Service for Defence Procurement.[18]

In this context it needs to be considered that Russia's innovation system is still marked by some legacies of the former soviet organisation of R&D and innovation. It comes from a system, where important innovations were based on a state order system and where the state ordered and financed innovative breakthroughs in space, weapons, or aviations from public research institutes and state owned companies. Public Procurement reflects to some extent the planning and top-down approach of Russian policy making and has therefore an important role. The state is in general the driver behind innovation policy, and most funding for R&D and innovation activities is allocated from governmental sources (66.5% of GERD were provided by government in 2009 – Eurostat, 2011). The importance of the procurement law has also to do with efforts to reduce corruption. The rigid and detailed framework for R&D and innovation funding was introduced to combat corruption, but even Minister for Economic Development Nabiullina admits that corruption in the system is on the rise.

The OECD review of Russia's innovation policy (2011) recognises procurement as quite relevant, especially in the defence sector. Defence procurement is set to gain in importance even more in the future, as defence expenditure shall be significantly increased over the coming years.[19] Other major procurers are the Ministry of Industry and Trade, the Federal Space Agency and Rosatom.

Awareness raising measures were taken: an important nanotechnology event, the Rusnanotech Forum is organised annually (see the following chapters for more details). And the Russian Venture Fair will be held in 2011 for the 12th time, bringing venture investors, business angels and high tech businesses together.[20]

[16] See http://en.fas.gov.ru/

[17] See http://zakupki.gov.ru/wps/portal/base/topmain/home

[18] See http://www.fsoz.gov.ru/

[19] Differing views with the President on increases of defence spending were one of the reasons, which led to the resignation of finance minister Kudrin in September 2011.

[20] See http://www.rvf.ru/eng/about/

The main barrier in the field of demand side policies is regulation. This concerns rigidity of regulation, overregulation with too many detailed rules, and enforcement and administration of regulation. There are many vested interests, which try to keep up and use current regulation for rent seeking. Corruption is an issue in this respect, which is a hindrance for the improvement and proper application of regulation. It needs also to be mentioned that the rule of law is not yet fully upheld in Russia, which is a deterring factor for innovation investments. Nevertheless some regulatory improvements have been undertaken, for example in the field of IPR and in employment rules, and several policy makers are aware of the issue.

Open innovation and user-centred innovation are only weakly established in Russia, with its traditional focus on top-down governmental policies. There are some recent supply side measures available to stimulate cooperation among higher education institutions and businesses, and among public research organisations and businesses in the framework of Technology Platforms (selected in 2011), which should give some impulses for open innovation.

3.2 Governance challenges

Governance of innovation policies is shared between the Ministry of Economic Development, the Ministry of Education and Science and the Ministry of Industry and Trade. For procurement, which is the main demand side tool in Russia, conflicting interests among ministries have to be coordinated. The Ministry of Finance and the supervising agencies try to enforce the rigid rules with the aim to reduce corruption, while innovation actors suffer from the rigidity and non-appropriateness of procurement rules especially for R&D funding.

Demand side and supply side policies are not sufficiently complementary, as there is "not yet a firm consensus on the rationale and scope of innovation policy [among the ministries] and thus shared criteria on which to assess the costs and benefits of the corresponding public investment".[21] This lack of consensus hampers introducing supply side R&D and innovation stimulation instruments, which are successfully applied in other countries.

An example where supply side and demand side policies are combined is Rusnano, the Russian Corporation for Nanotechnologies. It was reorganised in spring 2011 into two elements: an open joint-stock company, whose shares are 100% owned by the Russian government and which takes care mostly of investment in nanotechnology related commercialisation projects. The second element is the Fund for Infrastructure and Educational Programs, which is covering demand side policy elements. It is responsible for the annual Rusnanotech Forum, an awareness raising tool for nanotechnologies, and for standardisation in the nanotechnology field.

[21] OECD (2011)

3.3 Recent demand-side innovation policy measures

Innovation activities are driven mostly by governmental actors in Russia. In this context, procurement of innovative goods and services is highly relevant in major publicly dominated industry sectors such as energy, aeronautics, defence and space. According to the World Bank, more than 10% of GDP are falling under procurement.[22] Public procurement is also the main implementation procedure for the most important competitive R&D and innovation funding tools, the Federal Targeted Programmes. These programmes launch their calls for projects according to the Russian public procurement law (94-FZ). The implementation procedures of FTPs follow different approaches: on the one hand relevant topics are collected from potential applicants and experts, which lead then to concrete calls for project proposals. On the other hand specific innovative goods and R&D services are procured. Procurement rules are used here to implement supply side policies and for procuring pre-commercial R&D.

But the rules of the law are not well adapted to the needs of R&D and innovation funding and are more a type of straightjacket than a proper legal framework. The law has been modified more than 20 times over the last years, and is therefore rather complicated and an example of overregulation. Some of the most pressing problems are:

- Among the selection criteria for projects, the price of a good or service has an overly important role. This leads to price dumping and to the selection of less qualified proposers over scientifically much better qualified teams.
- Project Budgets are very rigid. Financial means foreseen for a certain year have to be spent in the same year and cannot be transferred to the next one.
- The purchase of scientific material and equipment has to be tendered. As usually the cheapest offer has to be selected, scientists end up buying inferior material than would be necessary for their research.
- Procurement suffers from limited competition in several sectors and is prone to corruption. Limited competition is caused by procurers procuring innovative solutions from their subordinated companies or research institutes (e.g. Rosatom, Federal Space Agency).
- Moreover, paperwork is excessive.

Discussions on the appropriateness of the law for R&D and innovation funding are ongoing for years, but have not yet led to a satisfying solution. The law is undergoing in 2011 another revision on the request of the President. The revision shall lead to a law on a Federal Contract System, which will include most of the rules of the current procurement law. But it shall incorporate more flexibility for R&D and innovation funding with less focus on the price of a project. The revised regulation is elaborated under the guidance of the Ministry of Economic Development, with support of the Ministry of Finance and the Federal Antimonopoly Service. A public consultation on the law was initiated in 2011 by the Ministry of Economic Development and the revised law shall enter into force in early 2012.

Other regulatory measures concern improvements of regulation and its application on employment of foreign experts and of import/export rules. These efforts seem to have often an ad-hoc character for solving a specific problem case, but without significant improvements of the overall framework conditions for innovation activities.

[22] See http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/cpar2007eng.pdf

Some important external effects on regulation are caused by the ongoing accession processes of Russia to the WTO and OECD, where some advancement can be observed. Furthermore, the EU discusses with Russia within the Four Common Spaces and the Modernisation Partnership in several joint Working Groups regulatory issues and standards. Certain harmonisation effects are emerging of this process.[23]

There is no dedicated lead market initiative implemented in Russia, although the nanotechnology field in a broad sense has been identified as promising future market. A strong research base in nanotechnologies has led policy makers to introduce specific stimulation instruments for developing it as a future field of the economy: with Rusnano an investment vehicle in nanotechnology projects was established in 2007, which also takes care of awareness raising, standardisation and certification in the nanotechnology field. A specific Federal Targeted Programme on Development of Infrastructure for Nano-Industry in the Russian Federation in 2008-2011 is being implemented to underpin the efforts in nanotechnologies with research and innovation infrastructure investments.

Tax incentives for R&D and innovation have been introduced in recent years, but they are mostly not specifically targeted at the purchase of innovative goods and services. Tax breaks apply generally to R&D expenditure of companies. The second important area of tax breaks concerns special economic zones for technology development and the Skolkovo flagship innovation centre. In the case of the Skolkovo innovation centre, the most relevant incentives for the demand side have been introduced: start-up companies established with the Skolkovo centre may request a refund of import customs duties and of VAT on imports. But these measures are not targeted at stimulating demand of innovative goods from national producers or service providers. For the moment analysts indicate that tax incentives are not well used.

What concerns cross-border cooperation on demand side measures, they relate again to regulation and standardisation. Some repercussions on regulation and standardisation are caused by the accession processes of Russia to the WTO and OECD, by efforts to facilitate cooperation within the EU-Russia Modernisation Partnership and by the Customs Union between Russia, Belarus and Kazakhstan, which entered into force in 2010.[24]

[23] See for example the EU-Russia Common Spaces Progress Report 2010.

[24] For the Customs Union see http://www.tsouz.ru/Pages/Default.aspx

Figure 4 Key demand-side policy measures

Measure name (duration)	Short description of objectives, main activities or types of funding support, etc.	Key implementation details
Procurement	• Procurement is used for the implementation of R&D and innovation funding programmes (mostly Federal Targeted Programmes) and for purchase of innovative goods and services of ministries and agencies • Federal Targeted Programmes require in most cases co-funding of business or other non-budgetary sources	• Total budget not available • Organisations responsible: various ministries (e.g. Ministry of Industry and Trade) and agencies (e.g. Roscosmos) • Eligible beneficiaries: HEI, research institutes, companies • http://zakupki.gov.ru/wps/portal/base/topmain/home
Rusnanotech – International Nanotechnology Forum (annually since 2008)	• The Forum is an awareness raising measure for nanotechnology applications; at the same time it is a fair and research conference • Rusnanotech is focused on nanotechnologies and its applications in various sectors (energy, construction, consumer goods, etc.)	• No budgetary data available • Since 2010, the forum is organised by the Fund for Assistance to the Development of Nanotechnologies "Forum Rusnanotech" • Target groups are researchers and business representatives dealing with nanotechnologies, R&D and innovation policy makers as well as investors • http://www.rusnanoforum.ru/eng/
Customs and tax incentives related to Skolkovo Innovation Centre (introduced in 2010)	• Facilitate purchase of goods and services (including innovative) from abroad for operation of innovative start-up companies in the Skolkovo Innovation Centre • Refund of customs duties and VAT on imported goods and services	• Organisation responsible: Skolkovo Innovation Centre • Eligible beneficiaries : start-up companies situated in the Skolkovo Innovation Centre • www.i-gorod.com/en/

3.3.1 Sectoral specificities

There are several thematic fields, where demand side policies, especially public procurement, are quite relevant. First of all this concerns the defence sector. Defence spending is traditionally high in Russia, and is estimated well above 50% of GBAORD. In contrast to most EU countries, R&D is financed in Russia mainly by government (GBAORD made up 65% of GERD in 2009). This makes defence spending and procurement in relation even higher.[25] The defence sector disposes of its own procurement agency, the Federal Service for Defence Procurement,[26] which is subordinated to the Ministry of Defence.

But also in the space field, R&D and innovative space equipment is procured through the Federal Space Agency and the Federal Space Programme. In the nuclear sector, Rosatom procures innovative goods and services. An important role in innovation procurement is played also by the Ministry of Industry and Trade, which procures through funding programmes for aviation, defence, electronics and other industry sectors.

[25] OECD (2011)

[26] See http://www.fsoz.gov.ru/index.html

3.3.2 Good practice case

A good practice case in demand side policies can be found in awareness raising for nanotechnology innovations in Russia, in particular the annual International Nanotechnology Forum, Rusnanotech.

Case 2 Rusnanotech – International Nanotechnology Forum

The Rusnanotech Forum is an important meeting place for researchers and businesses in the nanotechnology field as well as for investors and R&D and innovation policy makers. The Forum comes with a broad media coverage and publicity. It is an important awareness raising measure, but serves also the purpose to provide a market place for researchers and businesses in the field. It combines a research conference, business match-making and nanotechnology fair with more policy oriented presentations and discussions.

The Forum expanded in a very short time period (since 2008) to an important international meeting. In 2010 according to statistics of Rusnano more than 10,000 participants from more than 50 countries attended the third Forum in Moscow.

The wide coverage of the event in the press helps to popularise nanotechnologies, makes people aware of nanotechnology inventions and of the importance of the field for innovative business in Russia in general.

The Forum is an interesting case, how in a rather short period of time a major annual R&D and innovation related event could be set up. But it is also an indicator for the strong role of public initiatives and top-down policy making in Russia.

For further information: http://www.rusnanoforum.ru/eng/ (website in English and Russian available)

Appendix A Research and innovation policy measures for Russian Federation

Name of the Support measure	1st Priority	Start date	End date	Status (CC to complete)	Estimated public budget in 2010 in euro	• Comment
Federal Space Programme of Russia 2006-2015	2.3.1 Direct support of business R&D (grants and loans)	2006	2015	To be updated	€802.8m	• planned budget • Planned co-financing from non-federal-budget resources (partly private sector): €490.8m
Federal Targeted Programme "Development of Civil Aviation Technology of Russia in 2002-2010 and up to the year 2015"	2.3.1 Direct support of business R&D (grants and loans)	2002	2015	To be updated	€641.5	• Planned budget • Planned co-financing from non-federal-budget resources (partly private sector): €222.9m
Federal Targeted Programme "Development of Infrastructure for Nano-Industry in the Russian Federation in 2008-2011"	2.1.4 Research Infrastructures	2008	2011	To be updated	€143.4m	• Planned budget • Planned co-financing from non-federal-budget resources (partly private sector): €14.3m
Federal Targeted Programme "Scientific and Scientific-Pedagogical Personnel of the Innovative Russia in 2009-2013"	3.2.2 Career development (e.g. long-term contracts for university researchers)	2009	2013	To be updated	€351.5m	• Planned budget • Planned co-financing from non-federal-budget resources (partly private sector): €63m
Federal Targeted Programme R&D in Priority Fields of the S&T Complex of Russia (2007-2013)	2.3.1 Direct support of business R&D (grants and loans)	2007	2013	To be updated	€210.4m	• Planned budget • Planned co-financing from non-federal-budget resources (partly private sector): €107.9m • Programme budget cut due to financial crisis
National Research Universities	2.1.1 Policy measures concering excellence, relevance and management of research in Universities	2008	open	To be updated		• No exact budget available for 2010 • Co-financing of at least 20% from non-federal-budget resources required

Name of the Support measure	1st Priority	Start date	End date	Status (CC to complete)	Estimated public budget in 2010 in euro	• Comment
President Grants for Government Support of Young Russian Scientists and the Leading Scientific Schools of the Russian Federation	3.1.3 Stimulation of PhDs	1996	open	To be updated	€17.1m	• Planned budget
The Federal Targeted Programme "National Technological Base for 2007-2011"	2.3.1 Direct support of business R&D (grants and loans)	2007	2011	To be updated	€87.4m	• Actual expenditure from federal budget • Co-financing required, but data not available
Attracting leading scientists to Russian universities	Policy measures concerning excellence, relevance and management of research in 2.1.1 Universities	2010	2012	New to be created	€85.7m	• Planned budget
Development of innovative infrastructure in Russian universities	2.2.1 Support infrastructure (transfer offices, training of support staff)	2010	2012	New to be created	€85.7m	• Planned budget
Development of cooperation between Russian Universities and industrial enterprises	2.2.3 R&D cooperation (joint projects, PPP with research institutes)	2010	2017	New to be created	€171.4m	• Planned budget • Co-financing from private sector in the size of 100% of grant sum
Skolkovo Center of Research and Commercializing of New Technologies	2.2.2 Knowledge Transfer (contract research, licences, research and IPR issues in public/academic/non-profit institutes)	2009	open	New to be created		• No specific budget for 2010 available, as in preparatory phase • Tax incentives
RFFI - Initiative Research Projects	Policy measures concerning excellence, relevance and management of research in 2.1.2 Public Research Organisations	1992	open	New to be created	€97.6m	• Committed expenditure
FASIE – START Programme	4.3.1 Support to innovative start-ups incl. Gazelles	2006	open	New to be created		• Budget not available
Special Economic Zones for Technology Development	5.2.1 Fiscal incentives in support of the diffusion of innovative technologies, products and services	2005	open	New to be created		• Tax incentives