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Foresight for EU-Russia R&D and Innovation Cooperation

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Purpose

R&D and innovation cooperation between the EU, its member states (MS), the countries associated (AC) to the FP7 and Russia is developing dynamically at the multilateral as well as bilateral levels. In this context and within the framework of the EU-FP7 funded ERA.Net RUS project, a foresight exercise is being implemented. Structural and thematic scenarios for a sustainable R&D and innovation cooperation between the countries involved will be developed with the time horizon of 2020. The foresight results will lay the groundwork for a joint R&D and innovation funding programme and will be fed into the policy making process on R&D and innovation cooperation between the EU, the EU MS/AC and Russia.

Russia: Priority on Innovation

Support for innovation has come high on the policy agenda both in the European Union (e.g., Europe 2020 Flagship Initiative Innovation Union) and in Russia (e.g., Skolkovo Innovation Project). While the EU strives to further strengthen its innovative capacities, Russia needs to catch up on innovation and acquire related know-how. At the same time, cooperation in R&D and innovation has been developing dynamically over the past years between Russia, the EU, its member states (MS)¹ and the countries associated (AC)² to the EU's Seventh Framework Programme for RTD (FP7). Cooperation is ongoing on a broad scale both multilaterally and bilaterally.

¹ Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom

² Albania, Bosnia and Herzegovina, Croatia, Faroe Islands, FYR of Macedonia, Iceland, Israel, Liechtenstein, Montenegro, Norway, Serbia, Switzerland and Turkey

EU-Russia R&D and Innovation Cooperation

At the multilateral EU level, the EU's Framework Programme for RTD and the EURATOM Framework Programme are the main cooperation forums. Russia has consistently been one of the most active participants in the Framework Programmes (FPs) among all countries not being EU member states or countries associated to the FPs. Through joint calls for RTD projects launched by the EU and Russia within the FPs ("coordinated calls") in various scientific fields (e.g., aeronautics, nanotechnology, energy, fission, etc.), cooperation has been intensified. Russia has funded its teams participating in these projects using its own national resources. This has strengthened ownership and perceptions of cooperation on a par, a fact especially important for Russia.

The EU and its Member States: Main Partners for Russian R&D

A next step in rapprochement with the EU would be an association of Russia to the Framework Programmes. Russia expressed its interest in becoming associated in 2008, which was inspired by the fact that the EU coun-



tries are Russia's main cooperation partners and is underscored by a policy to internationalise and increase competition within the Russian R&D and innovation system. However, association to the FPs is discussed controversially both in Russia and the EU. Consequently, negotiations have advanced only slowly so far. Meanwhile new cooperation tools are in the process of being established through ERA.Net RUS, a European Research Area Network project (ERA-NET) funded by the EU within the FP7. ERA.Net RUS aims at coordinating bilateral funding programmes and has resulted in calls for R&D as well as innovation projects, which were launched in February and March 2011. These calls are jointly funded and managed by funding bodies of the EU MS/AC and Russia.

In the innovation sphere, the joint EU-Russian initiative of a "modernisation partnership" was agreed upon in spring 2010 between the European Commission President Barroso and the Russian President Medvedev. The partnership's priority is on facilitating trade and investment and intensifying economic relations. But it also includes innovation, research and development, and space as priority areas.

Bilateral Cooperations with EU Countries

At the bilateral level, Russia has established several joint R&D and innovation funding programmes with European partners. Russia has concluded bilateral science and technology agreements with a broad range of EU member states and countries associated to the FP. According to the Russian Ministry of Education and Science, the Russian Federation has active agreements in place with thirteen out of the twenty-seven EU member states (Bulgaria, Czech Republic, Finland, France, Germany, Hungary, Italy, Poland, Romania, Slovakia, Slovenia, Spain and the United Kingdom) and with four countries associated to FP7 (Israel, FYR of Macedonia, Serbia and Turkey).³ Similarly, agreements have been established between research funding institutions, for instance, between the Russian Foundation for Basic Research (RFBR) and its European counterparts. At the level of research organisations, especially the Russian Academy of Sciences has a dense network of cooperation agreements with academies in the EU MS/AC. However, not all of these agreements have resulted in substantial cooperation in the form of joint funding of R&D projects or more comprehensive joint funding programmes.

Opening-up of Russian R&D and Innovation

On the Russian side, we observe a trend towards international cooperation, which is stimulated through various recently introduced programmes. In the field of innovation, President Medvedev's key project "Skolkovo" will be established with international partners. In the Skolkovo innovation zone, specific privileges for research and business cooperation will be granted to facilitate the development of high-tech businesses. In recent years, Russia has not only started to attract emigrated Russian scientists to work with research groups back in their former home country but is now also actively reaching out to foreign scientists. In June 2010, the Russian Ministry of Education and Science launched the programme "Attracting leading scientists to Russian universities", which aims at stimulating and internationalising research activities. This scheme comes with solid funding of approximately € 3.5 million per project. The Russian technology platforms represent another recent initiative open for international participation aimed at bridging the gap between academia, industries and government, inspired to a large extent by the European experience.

Inhibitors and Uncertainties of Cooperation

There are, however, serious barriers that hamper cooperation. Bureaucratic procedures, uncertainty about protection of property and intellectual property rights (IPR) together with the unreliability of the judicial system limit the expansion of R&D and especially innovation cooperation. Exchange of scientific material and equipment with Russia is complicated and may be costly because of taxation and customs duties. Lack of funding for joint projects, housing problems and harsh living conditions in Russia are additional factors. Another relevant issue concerns the fact that changes in R&D and innovation are mainly driven by the state. Private business takes only limited initiative in this field on its own. The share of the state budget distributed on a competitive basis (e.g., by R&D financing agencies such as the Russian Foundation for Basic Research) is also stagnating.

The further development of the cooperation process is fraught with uncertainty. While there are positive signals indicating a dynamic development of cooperation, such as new funding schemes within the ERA.Net RUS project, the strengthening of bilateral cooperation and the trend of Russia opening up to cooperation, we also observe some signs of stagnation. This concerns, for example, a lengthy negotiation process about the possible association of Russia to the FP. Moreover, uncertainties surrounding politics in the EU and Russia as well as in the international arena always have the potential for disrupting a further rapprochement.

³ See www.mon.gov.ru, last accessed 1 April 2011. Previously existing active agreements with Austria, Netherlands, Norway and Switzerland are currently in the process of renewal.

Foresight to Provide Analytical Basis for Further Cooperation

In this context of developing EU-Russia R&D and innovation relationships, a foresight exercise running from 2010-2012 is being implemented as part of the ERA.Net RUS project. The foresight activities will provide an analytical basis for a future sustainable cooperation policy in R&D and innovation between the EU MS/AC and Russia. At the core of the foresight process is the preparation of structural and thematic scenarios for R&D and innovation cooperation with a time horizon of 2020. The development of this cooperation will be supported through foresight and directed towards addressing social and economic challenges that the EU and Russia both must face in the future.

The ERA.Net RUS project **consortium** is composed of funding agencies interested in joint support schemes for R&D and innovation between the EU MS/AC and Russia. Moreover, the consortium includes research organisations experienced in foresight research as well as in research on EU S&T policy and on the Russian and international S&T systems. The ERA.Net RUS foresight task is coordinated by the *Centre for Social Innovation (ZSI)* in Austria. Institutions collaborating on this foresight exercise are the European Commission's *Joint Research Centre – Institute for Prospective Technological Studies (IPTS)*, located in Spain, the *Higher School of Economics (HSE)* in Moscow and the *International Centre for Innovations in Science, Technology and Education (ICISTE)* in Russia.

In the first phase of the ERA.Net RUS project from 2009-2010, the project consortium performed substantial analytical work. A broad range of **reports** was prepared, dealing with the Russian S&T system and its funding, with Russian participation in ERA.Nets and with bilateral cooperation. The analyses were supported by a focus group meeting with scientists, which assessed the strengths and weaknesses of the Russian S&T funding system. In addition, a comprehensive survey was conducted among all relevant European and Russian funding organisations to take stock of the bilateral R&D and innovation funding instruments that are already in place. (Links to the documents are provided in the section Sources and References below.)

Search for Promising Fields and Institutional Solutions

This preparatory work provided solid foundations and valuable input for the foresight exercise. A planning workshop was held in September 2010 with the partner institutions involved. The planning had to take into account the two-pronged approach to be applied in the ERA.Net RUS foresight: On the one hand, a structural scenario was to be elaborated, focusing on institutional

solutions and instruments for strengthening the cooperation. The scenario was to suggest options for a sustainable joint funding programme between the EU MS/AC and Russia to support R&D and innovation. On the other hand, a thematic foresight was to be conducted to single out promising thematic fields for cooperative efforts to advance science and innovation.

The next step of the exercise was a “**creativity workshop**” held at IPTS in December 2010 to give room to discuss the critical variables and define the dimensions of the structural scenarios of cooperation. A joint scenario grid was established and scenarios located in the grid. On this basis, five small expert groups developed different scenarios and sketched out first scenario descriptions.

The **structural scenario development** will be continued by elaborating four selected scenarios in more detail. The foresight partners will outline one optimistic, one pessimistic and two intermediate scenarios through storytelling. Expert workshops with policy makers, representatives of funding organisations and researchers will then be conducted to validate the scenarios and flesh them out in more detail. The workshops will be linked to expert group meetings on international S&T cooperation at the EU level and to a meeting of funding agencies involved in the ERA.Net RUS calls (“The Group of ERA.Net RUS Funding Parties”).

In addition, **expert interviews** with policy makers will support the scenario development process. The interviews will be relevant, in particular, for the structural set-up of cooperation.

The **scenario workshops** will provide discursive spaces for policy makers, experts and researchers in R&D and innovation cooperation and thus promote building partnerships among the stakeholders involved by facilitating the exchange of information and the identification of converging and diverging views on the structural set-up and thematic orientation of R&D and innovation cooperation. The ERA.Net RUS project setting greatly facilitates access to these experts: policy makers as well as relevant experts of the funding organisations are participating in the project and are therefore committed to supporting the foresight exercise. In the analytical phase of the project, all relevant funding organisations involved in R&D and innovation cooperation between the regions were questioned on their bilateral cooperation. These experts have been made aware of the project and will also be involved in the foresight-related surveys.

In parallel to the structural scenario development, thematic priorities relevant for both the EU MS/AC and Russia will be singled out through a meta-analysis of thematic foresight studies conducted for the EU, in selected EU member states and in Russia. An **online survey** will be implemented subsequently, which will address European and Russian scientists to validate



and refine the thematic priorities for future EU-Russia R&D and innovation cooperation. First results indicate that there is wide agreement on the relevance of such broad topics as energy, transport, health and nanotechnologies.

The elaborated structural and thematic scenarios will then be tested employing a *Delphi survey*. Delphi

expert questioning will be applied to assess the probability and desirability of the resulting scenarios as well as their relevance for value creation, policy development and R&D advancement. Finally, both the structural scenarios and thematic priorities identified will be tested again by involving relevant stakeholder groups.

Expected Advice for Future Policy Making

The foresight results will be fed into the policy making process on R&D and innovation cooperation between EU member states, the countries associated to FP7 and Russia. The results will provide the basis for developing a joint R&D and innovation funding programme and for coordinating R&D and innovation efforts to more successfully face the common social and economic challenges of tomorrow. This can be expected to provide highly relevant input for ERA.Net RUS follow-up activities once the calls and projects funded within this framework will have been implemented and the project will be nearing its end at the

beginning of 2013. In this context, the new EU funding programme Horizon 2020 and the new Russian major public funding programme scheduled for 2013/14 must be considered critical factors affecting the scenarios. The opportunities they offer for EU-Russia R&D and innovation cooperation and for Russia to become associated to parts of the EU funding programme will influence the scenarios of cooperation and funding.

The scenarios will be presented in a report, and a conference will serve to disseminate them to policy-makers and other stakeholders. An action plan to establish a joint programme will offer concrete options for implementation.

Sources and References

ERA.Net RUS analytical reports (accessible at the project website www.eranet-rus.eu):

- The Russian S&T system (2010)
- The Russian S&T funding system from the perspective of international cooperation (2010)
- State of the art and perspectives of bilateral S&T programmes between EU MS/AC and Russia (2010)
- Experiences from Russian participation in ERA-NETs and from ongoing international ERA-NETs (2010)

About the EFP: Policy professionals dealing with RTD, innovation and economic development increasingly recognize a need to base decisions on broadly based participative processes of deliberation and consultation with stakeholders. Among the most important tools they apply are foresight and forward looking studies. The EFP supports policy professionals by monitoring and analyzing foresight activities and forward looking studies in the European Union, its neighbours and the world. The EFP helps those involved in policy development to stay up to date on current practice in foresight and forward looking studies. It helps them to tap into a network of know-how and experience on issues related to the day-to-day design, management and execution of foresight and foresight related processes.