

The Austrian Federal Government's RTI Strategy

With the publication of "Becoming an Innovation Leader: Realising Potentials, Increasing Dynamics, Creating the Future" (RTI Strategy) on 8 March 2011, the federal government successfully concluded several years of intensive discussion and analysis concerning a strategy for research, technology, innovation and education in Austria with a time-frame of 2020. The resulting strategy plan wraps up the multi-year process, which was defined by an intensive exchange of ideas and numerous detailed analyses of the many different aspects of the Austrian research and innovation system. Important starting points for this process were

- the Austrian Research Dialogue (2007-2008), which was designed to be a broad, nationwide process of discourse and consultations with Austrian stakeholders;
- the evaluation of government funding in RTDI in Austria ("System Evaluation") in 2008-2009, which provided a profound assessment of the entire research promotion and funding activities, along with relevant recommendations for improvement;
- the proposals and recommendations made by the Austrian Council for Research and Technology Development in the summer of 2009 for further development of the Austrian research and innovation system ("Strategy 2020").

Building on these preliminary projects, on continuous feedback discussions with the relevant stakeholders and social partners, and on an exchange of ideas with international experts, the working groups and ministries involved in the development and formulation of the federal government's strategy (the Federal Chancellery, the Federal Ministry of Finance, the Federal Ministry for Transport, Innovation and Technology, the Federal Ministry of Science and Research, the Federal Ministry of Economy, Family and Youth, and the Federal Ministry of Education, Arts and Culture) were able to build on a broad basis of analytical work and normative (strategic) recommendations. The government's strategy is thus the result of a consistent, evidence-based and interactive policy process.

One starting point is the successful development of the Austrian research and innovation system in recent decades, which has led to Austria being ranked at the forefront of the group of "Innovation Followers" with some above-average system indicators. The best manifestation of Austria's positive development is its R&D ratio of 2.79 % (2011), which is among the highest in Europe. On the other hand, new short-term (consequences of the global financial and economic crisis) and long-term challenges ("Grand Challenges" such as global scarcity of energy and natural resources, climate change, demographic change) set the framework in which the strategy must operate and for which science, research and technology must come up with adaptation strategies and development options.

The Austrian federal government's strategy for research, technology and innovation addresses these challenges by pursuing two prioritised objectives:

- "We want to continue developing the potential of science, research, technology and innovation in Austria, thereby making our country one of the most innovative in the EU by 2020, strengthening the competitiveness of our economy and increasing the prosperity of our society.
- We want to continue expanding and leveraging the potential of science, research, technology and innovation in Austria, to tackle the great societal and economic challenges of the future."

Against the background of these challenges, a vision for Austria in 2020 has been outlined in which Austria is solidly established among the EU's most innovative countries and is counted as one of Europe's Innovation Leaders. It sees Austria as a top location for research, technology and innovation, offering excellent researchers outstanding work and career opportunities and attracting research institutions and highly innovative firms from all over the world. Excellent research and radical innovation are a matter of course in Austria, as is close collaboration between science, business and society. An overall policy perspective related to science, research and innovation helps to strengthen the three sides of the "knowledge triangle" (education, research and innovation) and to improve collaboration between them. The Austrian federal government's commitment to science, research, technology and innovation is clearly expressed in its goal to continue increasing Austria's R&D ratio over the next decade, up to 3.76 % in 2020. In pursuit of this goal, the federal government has committed itself to the EU strategy process, Europe 2020, which sets individual goals for research intensity in the EU member states.

Within this vision, the strategic framework defines five interrelated areas in which - building on specific structures, development trends and challenges - the strategy is to be implemented and operationalised using appropriate measures:

- **Education system:** A quantitatively and qualitatively well-equipped education system is an essential prerequisite for innovative thought and action. Access to and the permeability of the system should be fundamentally improved, providing performance fairness and equal opportunities, and concerning individual disposition and preference. The envisioned measures aim for a broad structural reform of the education system at all levels (from early childhood education to models of life-long learning). At the same time, improved integration procedures can do a better job of unlocking the potential of Austria's population. Systematically increasing the mobility of students and graduates should ensure further internationalisation, which is an important indicator of the world-wide interconnection of the Austrian research and innovation system. At universities, improved framework conditions (such as transparent, performance-related awarding of professional positions, further development of the collective agreement, e.g. implementing a tenure track system, improving support for doctoral candidates and post-docs, etc.) should ensure that academic careers become more attractive and guarantee the continuity of excellent research staff. At the same, gender imbalances must be levelled out.
- **Basic research:** In a modern knowledge society, basic research, along with the on-going expansion of the frontiers of scientific knowledge, is a fertile

ground for the innovation system. In research and innovation policy basic research is consequently considered to be a key area of the government's responsibility. Accordingly, the institutions of basic research in Austria (universities, public research institutions focused on basic research, such as the Austrian Academy of Sciences, IST Austria, LBG, etc.) must be strengthened. In addition to improvements in infrastructure, essential packages of measures include reform of university financing, further development of performance agreements, the continued expansion of third-party financing via competitively evaluated projects while simultaneously covering overhead, and the implementation of an Austrian excellence initiative with up to ten different Clusters of Excellence by 2020. At the same time, the role of the universities as partners in the transfer of knowledge to businesses should be further expanded and strengthened, e.g. by establishing Knowledge Transfer Centres. Institutions for applied non-university (public) research will be aided and supported in their attempts at reform and international positioning.

- **Innovation and corporate research:** Innovations are a key element for companies to gain technological or market-oriented competitive advantages, thereby also assuring economic growth and new jobs. The prerequisite of such developments is intensifying ambitious research and development activities at companies, performed by highly skilled employees on the foundation of the latest scientific findings, guaranteed by constant and intensive knowledge transfer between scientists and businesses. The innovation capacity of Austrian businesses and their employees is an essential factor for reaching the strategic goal of making Austria an Innovation Leader by 2020. The strategy accordingly includes the development of a broad package of measures for increasing innovation performance in Austrian companies and the number of businesses engaged in R&D (objective: by 2013, a 10% increase, and by 2020, a 25% increase in the number of businesses performing R&D). This package of measures includes, for example, the targeted expansion of direct funding, encouraging the foundation of innovative companies, improving access to private equity and venture capital, and demand-side innovation measures (as in the area of public procurement or in setting norms and standards), as well as further intensification of the links between science and business. Start-ups should be encouraged by eliminating administrative barriers, and a proactive competition policy should promote innovation in general.
- **Governance of the research and innovation system:** Now that the catching-up process has been successfully completed, the Austrian innovation system must face new challenges along the developmental path towards an Innovation Leader. Political governance cannot be restricted purely to RTDI policy in its narrower sense. In the face of new challenges, it can only be effective in mutual coordination and cooperation with other policy areas, in particular education policy, competition policy and a general policy of international openness and mobility. This new orientation of the framework conditions and governance structures thus creating adequate mechanisms for defining focal points, a clear and transparent structuring of the funding system, and coherence in the distribution of responsibilities in a multi-level political system, from regional coordination to internationalisation. Not least, we are striving to create a mutually beneficial dialogue between science, business and society. This new orientation and further development of governance

structures requires appropriate measures that can actively involve the relevant stakeholders, guaranteeing a dynamic political learning process. The envisioned measures therefore include establishing a high-level Task Force for Research, Technology and Innovation whose responsibilities will include the support, realisation and coordination of the implementation of the new RTI strategy; the strategic and system-oriented articulation and coordination of measures of individual ministries; and dealing with the recommendations of the Austrian Council for Research and Technology Development. The funding agencies in the area of RTI policy, working through performance agreements on the basis of output and impact goals, are essential pillars of the RTI strategy implementation. The new challenges ("Grand Challenges") are addressed in RTI policy by the establishment of new "inter-ministerial research, technology and innovation focal points". The focal points in question will be subject to accompanying evaluation and monitoring and will have short term impacts. When setting the focal points, however, it is essential that they are based on an improvement of Austria's competitiveness in the generic interdisciplinary fields of science and technology, while at the same time referencing existing areas of strength within Austrian science and business. The international and European networking of Austrian RTI players is actively supported, and cooperation with key countries (such as Central and Eastern Europe, North America, Southeast Asia, and the BRIC countries) is being strategically expanded.

- **Funding system:** The specific formulation and further development of the funding system plays a central role in the Austrian federal government's RTI strategy. In recent years, Austria has developed a differentiated and broad system of funding that helped to initiate, support and drive forward Austria's extraordinarily successful catching-up process. This system covers everything from bottom-up funding, to top-down thematically defined programmes and indirect (tax-related) funding instruments. This funding system must now be adjusted to fit the new strategic target: establishing Austria as an Innovation Leader. Emphasis here is placed on maximum efficiency and effectiveness of funding (high leverage), as well as the principle of competition-based funding allocation, which will take into consideration the specific requirements of basic research. Concrete measures include for example reducing programme diversity by concentrating resource allocation on a select few - broadly defined - focal points with strategic relevance; by continuing to streamline and harmonisation of instruments; working out a modern, standardised body of regulations for research funding to serve as the foundation of all federal funding; and by increasing the research premium in accordance with § 108c of the Austrian Income Tax Act from 8% to 10% (while simultaneously disposing tax allowances under § 4 Para 4 of the Austrian Income Tax Act). This should make it possible by 2020 to achieve a distribution of public and private financing in which one-third is public and the other two-thirds are private. The contribution of the public sector should, after the necessary phase of consolidation resulting from the financial crisis and budget consolidation, hereby be stabilised on a path where it can support the desired research intensity with this ratio of private and public research financing.