

AUSTRIA – a Place of Scientific Excellence in the middle of Europe

Current Issues in Austrian Research and Technology Policy. The Austrian government has started its technology drive with two special programs: Action Program I for research and technology development, under which an additional EUR 508 million will be made available to supplement the ordinary research budgets of the ministries and the Austrian Industrial Research Promotion Fund for 2001-2003, and Action Program II which will provide an additional EUR 600 million for the years 2004-2006. These funds have been and will be distributed on the basis of recommendations made by the Austrian Council for Research and Technology Development www.rat-fte.at. As a result, it was possible to finance the Austrian genome research programme, GEN-AU, numerous programs designed to promote human resources or priority programs in the fields of nano-technologies, and information and communications technology using funds from the first Action Program.

With regard to the second Action Program, the Council has recommended spreading funds between the following promising **new sciences and strategic fields: the new areas** of life sciences, information and communications technology, nano- and micro-technology, mobility and transport, the environment and energy, the humanities, social and cultural sciences – and the **strategic fields:** promotion of human resources, strengthening research capacities in industry and in science, greater internationalisation, and promotion of the dialogue between science and society www.innovatives-oesterreich.at. Program examples include the science-industry joint venture programs (competence centres K-plus www.kplus.at), K-ind and K-net, Christian Doppler Laboratories www.cdg.at), priority programs with a thematic orientation, programs to position Austria in the European research area, grants and personnel development programs.

Following a recommendation of the Council for Research and Technology Development the Austrian government is in the process of enacting legislation to establish a national foundation to promote research, technology and development. The aim is to make provision for the long-term nature of research projects. The foundation will be funded from the resources of the Austrian National Bank and the ERP Fund; the available volume of funds will amount to some EUR 125 million p.a. Decisions concerning the award of grants by the foundation will be made by a foundation council on the basis of recommendations of the Council for Research and Technology Development. Together with the research budgets of the ministries, the Austrian Industrial Research Promotion Fund (FFF www.fff.co.at) and the government Action Programme it will form the third pillar of research financing in Austria.

The third major innovation in Austrian research and technology policy is a structural reform. Industrial R&T promotion institutions and promotion programs will be integrated in a single company. The advantages are a better use of synergy potentials, existing competences will be optimised; a single contact point for R&T promotion with a significant size will be created, the coordination and calibration of promotion programs will be improved and existing overlaps eliminated.

The fourth part of the Austrian research and technology drive is the reform of indirect research promotion. The research tax allowance will be raised again (from 15% to 25%) and is now one of the most attractive incentives for businesses anywhere in Europe. Parallel to this, the research premium for companies will be raised from 5% to 8%.

Three ministries are the main responsible institutions for Austria's research and innovation – Ministry of Education, Science and Culture - BMBWK, Ministry for Transport, Innovation and Technology, BMVIT and the Ministry of Economy and Labour - BMWA.

BMBWK www.bmbwk.gv.at – is responsible for all universities (public and private). The new University Act (UG 2002) has been a major step in the further development for excellence of the higher education system. It includes a number of significant elements based on the new principle of full legal capacity of Austrian Universities. Furthermore three new medical universities were set up, based on their tradition as medical faculties within the universities of Vienna, Graz and Innsbruck. The new Medical University of Graz eg focuses on telemedicine, reproductive medicine and public health.

The Academy of Sciences (OeAW), the Wittgenstein and START prizes and a series of basic research programs e.g. the Gen-AU program and essential financing of the Boltzmann Institutes are also topics of this ministry.

Gen-AU Program. The Austrian Genome Research Program reached almost exactly Euro 100 million within nine years - www.gen-au.at. Two further calls for applications for projects will be made in 2004 and 2007. The decision regarding the acceptance of projects is in the hands of a scientific advisory board consisting of high ranking international experts.

GEN-AU wants to achieve more than new patents and formulas. Genome research touches on a variety of critical ethical and social issues. Within the accompanying program ELSA, social scientists deal with ethical, legal and social aspects of genome research in general and GEN-AU project topics specifically.

Education is another main goal of GEN-AU and summer schools, mobility, post docs and conferences for young scientists are also funded.

Ludwig Boltzmann A new policy starting in 2004 will follow the tradition of the Ludwig Boltzmann Society in being active in the fields of human medicine, humanities, and cultural studies. www.ludwigboltzmann.at

BMVIT www.bmvit.gv.at is a key player funding three areas of activity: research funds for bottom-up proposals, thematic programs for strategic fields of research and horizontal programmes addressing structural change. More than 250 million Euro is spent annually. While the two funds for the promotion of scientific and industrial research (FWF and FFF) operate well-established bottom-up programs, the ministry's flagship program is the "K plus" competence centre program with 18 centres.

In the field of non-university applied research, the ministry's funds e.g. the Austrian Research Centres – Seibersdorf www.arcs.ac.at. Also the industry in European programs is promoted, most prominently the programs of the European Space Agency.

Austrian Science Foundation – FWF www.fwf.ac.at is a major Austrian organisation that exclusively funds basic research. The hallmarks and strengths of the FWF funding system are: autonomy, scientific quality as the only criteria for funding, so far exclusively bottom-up applications, equal chances for all scientific fields from biology and medicine, over natural sciences and engineering, to humanities and social sciences, transparent decisions made on the basis of peer-reviews exclusively solicited from scientists abroad, thus eliminating national bias.

For example, cutting edge research results are produced in Physics: According to the Institute of Physics, London, two out of the ten scientific "Highlights in physics in 2003", originated from Austria, and excellence is also achieved in other fields, e.g. Papyrus Research and others. Also the Wittgenstein and START prizes for young scientists and special research programs (SFB) are funded by FWF. A new collaborative SFB on "Cell proliferation and cell death in tumours" was established at the Innsbruck Medical University - www.sfb021.at.

Quantum optics and quantum information in Austria. Spectacular results have been achieved during the last years: Zeilinger in Vienna, Zoller, Blatt and Grimm in Innsbruck are the leaders of the main groups in Austria. The OeAW supported by the Austrian Council for Research and Technology Development and the BM:BWK have newly founded an Academy Institute for Quantum Optics and Quantum Information in Innsbruck.

Photonics Institute of Vienna University of Technology. Ferenc Krausz and coworkers have made important contributions to ultrafast laser science. In cooperation with other groups they were the first to generate and measure electromagnetic pulses shorter than 1 femtoseconds www.mpQ.mpg.de.

BMWA www.bmwa.gv.at - Science-Industry linkages represent a major bottleneck for the Austrian innovation system. One of the major initiatives undertaken by this ministry is the so called "Kind/Knet" – for the establishment of Competence Centres and Networks www.kompetenzzentren.biz

The Vienna Science and Technology Fund (WWTF www.wwtf.at) is a new funding agency for science and research in Vienna with an annual budget of approximately €7 million. Its aims are to strengthen Vienna as a research location and to enhance its position as a city of science and innovation.

Vienna Biocenter www.viennabiocenter.com. At the Department of Microbiology and Genetics of the Vienna Biocenter, a strong focus on RNA research has developed within the group of Renée Schroeder. With the observation, that several antibiotics target RNA molecules and are able to inhibit RNA catalysis, the idea that RNA is a potential target for therapy was established.

IMP- IMBA www.imp.univie.ac.at, www.imba.oew.ac.at. A flagship of Austrian bioscience became the Research Institute of Molecular Pathology – IMP in Vienna. Together with the newly founded Institute of Molecular Biotechnology (IMBA), headed by Josef Penninger, the IMP forms the 'IMP-IMBA Genome Research Center', a research initiative by Boehringer Ingelheim and the Austrian Academy of Sciences.

BIT - Bureau for International Research and Technology Cooperation - provides Austrian researchers from academia and industry with information and assistance for participating in European and international programs, initiatives and actions. BIT's clients base in Austria amounts to more than 28.000 researchers and about 14.000 organizations. www.bit.ac.at

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