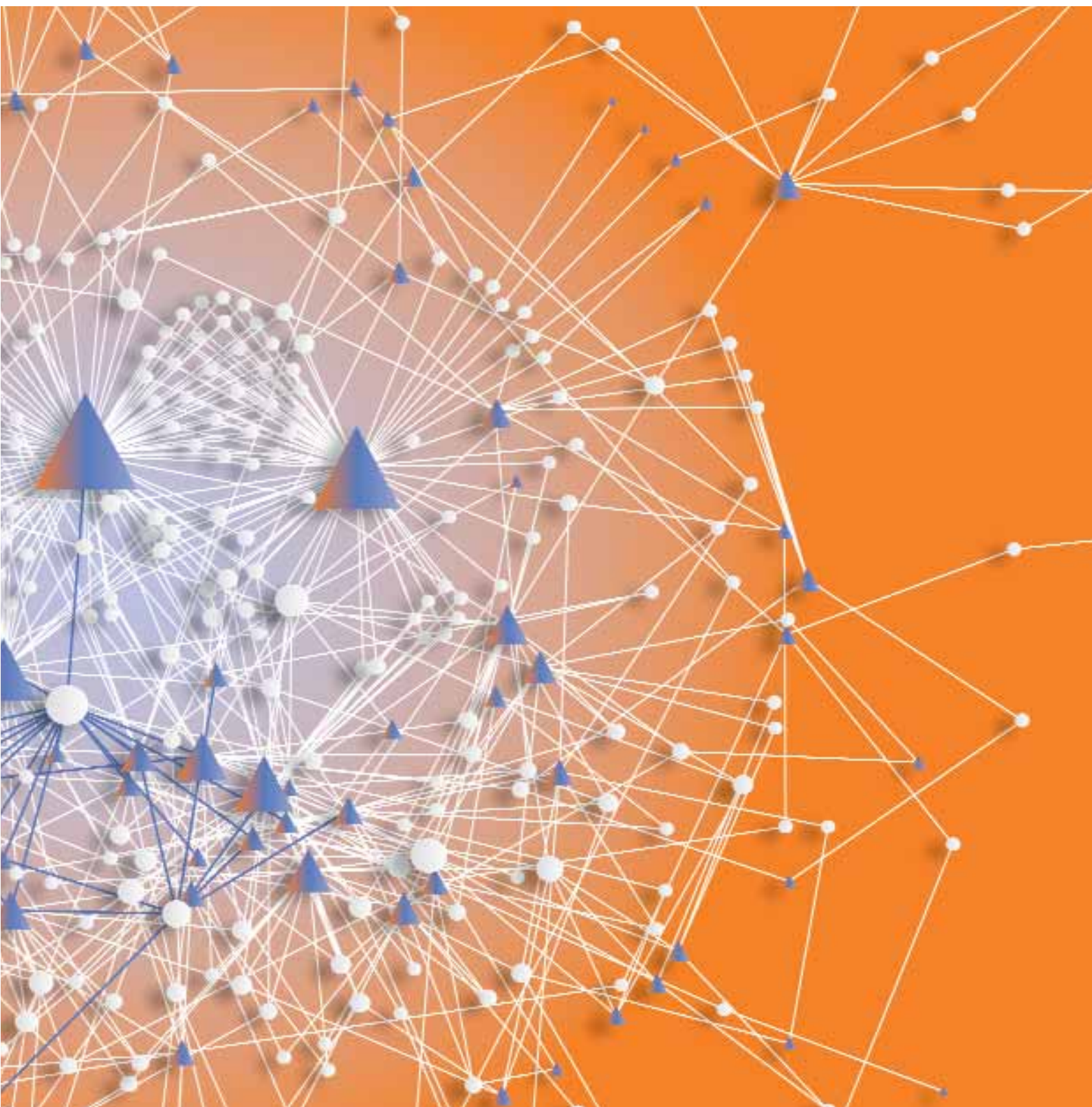




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dedication



Each year the public purse rightly increases the amount of money it invests in research and development (R&D). Total expenditure on R&D has risen from EUR 3.76 billion in 1999 to EUR 5.27 billion in 2004, whilst the Federal government has increased its spending on research from EUR 1.2 to EUR 1.58 billion, putting Austria toward the head of the European league table. These massive investments in R&D are also reflected in the Austrian R&D quota, which was forecast to rise from 1.91 percent in 1999 to 2.27 percent in 2004. This means that Austrian spending on research is on the path to growth, in contrast to the international trend towards stagnation.

Within the scope of its strategic work, the Council for Research and Technology Development is trying to enhance the impact of investments in Austria's future by examining the leverage effect of promotion measures and then selecting the most effective instruments. The Council has identified new strategic fields of research in which Austria has particular strengths or can occupy niches. Important key areas include the development of the information society, research in the life sciences and micro- and nano-sciences to mention just a few.

The challenge for the future is to network and recombine these established fields of strength and competence. Work has started and will continue on building bridges between established fields of research, between basic research and applied research, and between science and industry. These networks are part of a strategy of excellence which will open up new paths for innovation.

The Council deserves special thanks for its contribution to the modernisation of the national funding system. New, internationally competitive structures have been built up in recent years and the integration of Austrian research into the European Research Area is being pushed ahead. The Council's continued support will be required for the implementation of the Lisbon strategy in order to achieve jointly the common goals.

We would like to thank the members of the Council for Research and Technology Development for their commitment and the expertise which they make available to Austria. This proven collaboration will ensure continued success in research, technology and innovation in 2005. ■

elisabeth gehrer
*Minister of Education,
Science and
Culture*

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*Minister of Transport,
Innovation and
Technology*

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*Minister of Economic
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of
Finance*

Ever since it commenced its work the Austrian Council has supported the implementation of the government's R&D goals as drawn up in three "Reformdialogen". Although the Lisbon strategy, together with its main goal of achieving an average R&D quota of three percent of GDP, has only been hesitantly implemented in a number of member states, it is imperative that Austria stays the course.

While the EU 25—particularly because of the new member states—will not be able to achieve the Lisbon goal, past efforts and an intensification of measures mean that this target is now within Austria's reach. The vision contained in the government's first "Reformdialog" is becoming reality.

The evaluation report of a high-ranking committee of experts under the chairmanship of former Dutch Prime Minister Wim Kok once again presents European governments with a clear reminder that research and innovation are of central importance for growth and employment in Europe. The Kok Report states that the implementation of the Lisbon strategy is more urgent than ever. The growth gap in comparison to North America and Asia has unfortunately widened in recent years.

In particular, the European committee of experts reminded the member states of the following:

Greater Research and Development Efforts, Stronger Focus on Innovation:

Create a European research and innovation area, increase research and innovation expenditure to 3 percent of GDP (by 2010), ensure that Europe remains attractive to its best minds, promotion of new technologies.

More Regard for Education and Human Capital:

Halve the number of early school leavers, adapt the systems of general and vocational education to the knowledge-based society, promotion of lifelong learning for all, measures to promote and facilitate mobility within Europe, but also at an international level.

Advance the Development of the European Information Society:

Implement a regulatory framework for electronic communications, support the spread of ICT, create favourable conditions for e-commerce, strengthen Europe's leading role in mobile communications technologies.

Austria has already acted upon many of these proposals. Thanks to the strategic requirements of the Council and the provision of the necessary funds by the government, it has already been possible to implement a number of measures, such as the programmes of the Technology Action and of the National Foundation. To safeguard this progress and achieve the 3 percent spending target for research and technology set by the EU for 2010, a research and technology Action Programme III must be endowed with the necessary funding. Merely continuing the Action Programmes and endowing the National Foundation will not be sufficient. Preparations for a beefed up Action Programme III (2007–2009) must be started at an early date.

Structural reforms must be pushed ahead so that the strategy of excellence for Austria can be implemented efficiently. The main focus of increased Austrian R&D expenditure must be upon measures to support the structural shift toward high-tech sectors. Structural change is accelerated by business start-ups, new ►



Knut Consemüller



Günther Bonn

headquarters and a focus on networks. Efforts must therefore be concentrated and strengthened in these areas. No demand gap has been identified in terms of human resources; instead we must strengthen system modernisation and investment activities.

The sometimes inadequate level of ordinary budgets represents one weakness of the current system. As a consequence, funding from the Action Programmes and the Foundation funds in particular are not used to finance new programmes and initiatives but instead have to be used as substitute funding for regular measures such as ensuring basic funding for the Austrian Research Promotion Agency (FFG) and the Austrian Science Fund (FWF).

Current Challenges—The Council's Agenda for 2005

In addition to boosting the R&D budget, strategies need to be enhanced and the use of funding needs to be optimised. Under the title "Perspective 2010" the Council will present an updated version of the National Research and Innovation Plan. This strategy will focus upon the further optimisation of R&D structure in Austria by means of a thematic concentration on "New Types of Centres of Excellence" and their funding.

As well as recommendations concerning the use of funds from the Action Programmes and the Natio-

nal Foundation, the Council will also publish recommendations on a reform of the grants system and on biotechnology. Furthermore, new strategies will be drawn up for monitoring and evaluating the national innovation system and for promoting start-up and growth financing.

The Council will closely follow the implementation of the strategic recommendations. The Council has started a dialogue with the Austrian Academy of Sciences with the goal of drawing up concepts for reform on the basis of key areas and performance agreements and strengthening the Academy to become an even stronger pillar of the Austrian scientific system.

During the course of preparations for the EU presidency in the first six months of 2006, the Council contacted organisations with a similar function in neighbouring Central and East European states to discuss strategic considerations regarding research and innovation. The 7th EU Framework Programme forms a central point of these discussions, as important positions of point will be taken during Austria's presidency.

We would like to thank all those who support our work and invite everybody to join forces with us to shape an innovative Austria that knows how to use its potential for the future. ■

A handwritten signature in blue ink, appearing to read "K. Consemüller".

dr. knut consemüller
Chairman of the Austrian Council

A handwritten signature in blue ink, appearing to read "G. Bonn".

prof. dr. günther bonn
Deputy Chairman of the Austrian Council

Setting the Direction

Additional funding for research and technology development is an important element of successful innovation policy. At the same time, however, it is essential to develop strategies and define key areas that will pave the way for a successful future. This involves identifying emerging sectors of research and promoting highly qualified young scientists. The following pages offer an overview of the recommended strategies.

simplify and optimise



Henrietta Egerth

The first step has been taken: The one-stop-shop for research promotion

In September 2004 the Austrian Research Promotion Agency (FFG) commenced its work (see info box). In a round table discussion with the Chairman of the Council for Research and Technology Development (Austrian Council), Knut Consemüller, the two managing directors of the FFG, Henrietta Egerth and Klaus Pseiner, discuss motives, strategic considerations and challenges.

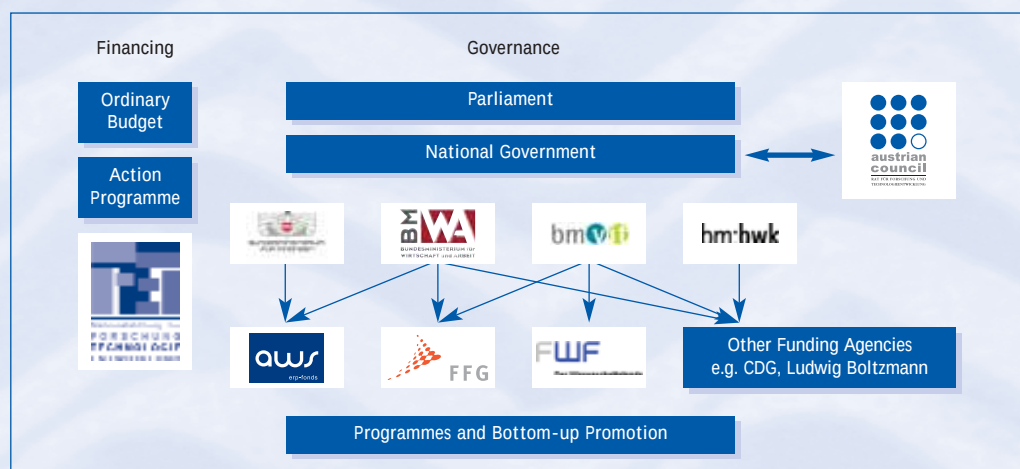
analysis of the structural reforms which needed to be made to Austrian research and technology policy in its National Research and Innovation Plan. With regard to research promotion, we called for a clear institutional and programmatic focus of the existing promotion landscape. In a second step, the Council now wants to achieve a clear separation of the strategic and operational levels.

What were the strategic considerations behind the decision to bring together four different research promotion agencies under a single roof?

In general terms, the Council recommends simplifying the Austrian research, technology and innovation promotion systems. In our view, this goal can be achieved both by amalgamating thematically related programmes and integrating similar programme types under a single programme umbrella.

Consemüller: The Council for Research and Technology Development had already offered a detailed

This diagram illustrates the formal responsibilities in the public research funding scheme. However in their operational work the funding institutions also provide services for all ministries engaged with RT&I.



Action Programmes and RTD National Foundation

- Action Programme I: EUR 508 million, 2001-2003
- Action Programme II: EUR 600 million, 2004-2006
- RTD National Foundation: EUR 125 p.a. from 2004
- Reform of indirect promotion: Increase of the research tax allowance, creation of the alternative research premium

Action Programme and National Foundation for RTD 2005

- Human Resources: approx. EUR 19.0 million
- Science: approx. EUR 105.0 million
- Industry, Co-operation between Science and Industry : approx. EUR 185.0 million
- Internationalisation: approx. EUR 7.0 million
- Public Awareness: approx. EUR 3.6 million

How does the new promotion agency work?

Pseiner: The aim is to create a promotion package tailored to the needs of the individual customer. Grant recipients should not be confronted with an impenetrable jungle of programmes, we want to offer them a co-ordinated and compact service. We therefore bundle existing resources and instruments according to new criteria. To the enterprise's "obligation to take" we are adding an "obligation to give" on the part of the FFG by actively approaching our customers with service packages.

It is now a matter of common sense to transfer to the FFG all those Federal government schemes designed to promote applied research—unless in individual cases there are compelling reasons for not doing so. Of course, that will all take time because we do not want to, nor can we, hastily change the conditions governing programmes which are currently calling for applications. Following the reform of research funding the Austrian innovation system is based upon three pillars: the Austrian Science Fund (FWF), which is responsible for basic research, the Austria Wirtschaftsservice GmbH (AWS), an instrument to implement innovative ideas in commercial applications, and as the third player, the FFG as the main pillar for the entire applied research sector.

Egerth: We will set benchmark standards in operational respects. We are currently designing this process together with the ministries. Of course, it is a joint learning process for all those involved, but one which should definitely benefit researchers. We owe that to our customers and also to the ministries who have entrusted us with this responsibility and with whom we co-operate very well.

What are the interim results that have been made so far and what are the challenges for the next few years?

Consemüller: Major steps forward have been taken with the Action Programmes and the implementation of the RTD National Foundation. Never before has so much money been spent on R&D in Austria as today. In an international comparison Austria can refer to an outstanding dynamic in this respect. Two things are now needed for us to remain on track: in the short term, the provision of EUR 100 million each for 2005 and 2006 from the proceeds of privatisation and in the medium term, an Action Programme for 2007 to 2009 with clear progression tangents.

Egerth: The budgetary development is extremely pleasing for the FFG. We were able to increase the total volume of managed funds from EUR 325.6 million in 2004 to EUR 352 million in 2005. Funding for bottom-up promotion rose from EUR 242 million to EUR 250 million, with an even sharper increase in funding for thematic and structural programmes. On the one hand, this guaranteed the continuity of grant awards, on the other it also provided us with the resources to generate new impulses.

Pseiner: We also used the additional funds to start four new programme lines: first of all, the bridge-building programme Bridge, designed to close the gap between basic research and applied research, and which is carried out in co-operation with the FWF. This programme was very well received right from the outset. The overwhelming interest shown in it demonstrates how necessary it is. Then there is CIR-CE, a programme to foster co-operation with neighbouring Central and East European countries, ►



Klaus Pseiner

simplify and optimise



Knut Consemüller

the “Headquarter” programme to attract the central research units of corporate groups to Vienna, and finally the interdisciplinary programme Security Research with which Austria is responding to current European developments.

What will be the main focal areas for the activities of the Austrian Council and the FFG?

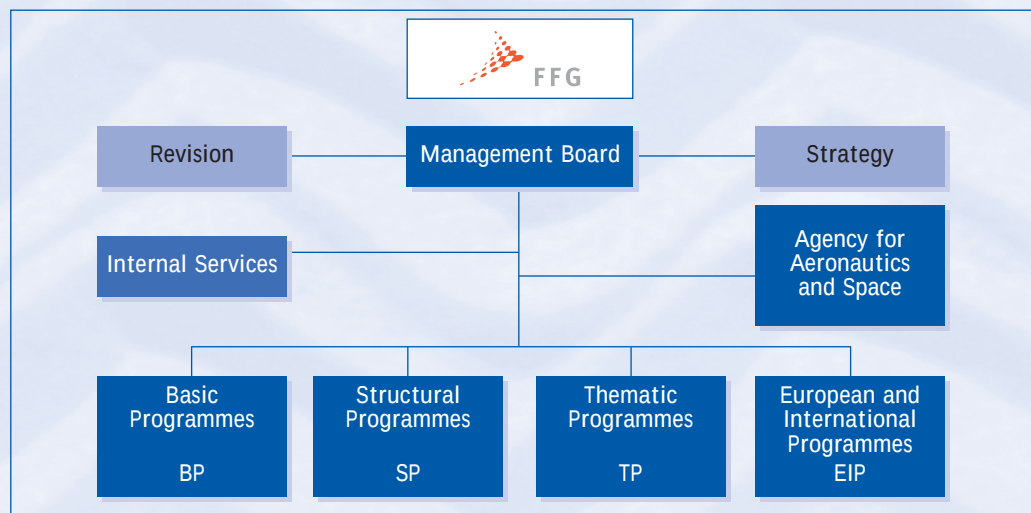
Consemüller: The Council regards the development of a strategy of excellence to increase research capacities and the strengthening of co-operation between science and industry as key areas. Together with the ministries and the FFG, we will develop a comprehensive strategy of excellence for co-operative programmes and continue to build bridges between basic research and industrial development. As a matter of urgency new areas of strength need to be developed and existing ones need to be linked in order to focus on specific themes and to create critical masses. In doing so, particular attention

needs to be paid to the diversity of the institutions involved, to existing excellence in science and industry and to economic demand.

Pseiner: The FFG views itself as an active partner and as a central instrument of Austrian research and technology policy. In the first instance, we would like to see an internal reorientation of the resources which are concentrated in the FFG, but not as an end in itself, but in order to provide a new quality of service.

Egerth: The FFG aims to offer our customers and sponsors alike an added value. The customer by means of funding packages that are tailored to their requirements and our sponsors through professional management of all promotion programmes. We have to arrive at a clear and transparent distribution of tasks. Speaking for the FFG, we are confident that we will be able to meet these challenges.

FFG Organigram,
March 2005



Consemüller: The Austrian Council will continue to work toward an even better interaction between the strategic and operational levels. Good co-ordination between the FWF, the FFG, the Christian Doppler Research Association (CDG) and the AWS

is extremely important for the implementation of the strategic guidelines. Co-ordination between the two levels will be achieved by means of demanding governance mechanisms. ■



Profile	Austrian Research Promotion
Henrietta Egerth studied economics at the University of Linz. After graduation she worked in Brussels, where her employers included the European Commission and the Union of Industrial and Employers' Confederations of Europe (UNICE). In 2004 Henrietta Egerth joined the office of Minister of Economic Affairs Martin Bartenstein where she was responsible for research and development. Klaus Pseiner was appointed head of the Austrian Space Agency (ASA) in 1998. Previously the biology graduate worked for Dornier, before becoming project manager at Österreichische Raumfahrt- und Systemtechnik GesmbH. (ORS) and at the technical centre of the European Space Agency (ESA). Knut Consemüller is a board member of Böhler-Uddeholm AG where he is responsible for research and development. From 1976 to 1984 he was a member of the German technology advisory board. He studied ferrous metallurgy in Aachen and in his capacity as research manager at locations throughout Europe was responsible for operational innovation.	The FFG was founded in June 2004. Through the integration of the Austrian Industrial Research Promotion Fund (FFF), the Technology Impulse Gesellschaft (TIG), the Austrian Space Agency (ASA) and the Bureau for International Research and Technology Co-operation (BIT) all major agencies for (enterprise-related) promotion schemes have been brought together under a single roof. The reform of the Fund for the Promotion of Scientific Research (FWF) can be seen as another major step toward the modernisation of the Austrian promotion landscape. In addition to the FFG and the FWF, Austria Wirtschaftsservice GmbH (AWS) and the Christian Doppler Research Association (CDG) also carry out research and technology promotion tasks at the national level. Links: www.ffg.at www.fwf.ac.at www.awsg.at www.cdg.ac.at



Recommendations for the Technology Offensive 2005 and 2006

The Council has defined clear priorities for the use of funds in 2005 and 2006 in its recommendations. These recommendations are based on previous Council recommendations and a discussion process with experts from science, business, politics and administration. The results of the strategy discussion and the Council recommendation can be viewed on the Council website under <http://www.rat-fte.at>

Human Resources

The percentage of university research which is financed through competition has already been increased in recent years. Efforts should be made to achieve a further increase in accordance with the timeframe and legal possibilities provided in the Universities Act 2002. The Action Programme and the funds of the National Foundation for RTD should contribute in the following areas:

- Safeguarding an internationally competitive research infrastructure of high quality by means of a temporary research infrastructure programme,
- Providing the Fund for the Promotion of Scientific Research (FWF) with the necessary resources to finance excellent bottom-up basic research as well as in the long term to finance overheads and pro rata infrastructure investments within the scope of its project promotion,
- Promotion of "oriented basic research" to complement the bottom-up promotion of the FWF.

One important framework condition is that the resources of the General University Fund (GUF) need

to be used to safeguard a basic infrastructure for the universities and carry out the necessary major investments in building fabric and construction. Furthermore, savings can be made by focussing on individual locations and the shared use of infrastructure by several universities or institutes. Incentive measures should be established for reducing costs and obtaining third party funding.

Strategy of Excellence to Increase Research Capacities and Strengthen Co-Operation Between Science and Industry

The Council sees an urgent need to develop new strength areas and to network existing key areas in order to create thematic foci and critical masses. In particular, attention should be given to the diversity of the participating institutions, existing excellence in science and industry and upon economic demand. The networking of existing instruments and the integration of new measures (Bridge, Translational Research) are the most pressing tasks. The Council has therefore asked the Austrian Research Promotion Agency (FFG) to develop such a strategy together with an implementation plan, which should give particular consideration to the Council's thoughts on the "New Types of Centres of Excellence".

Expansion and Strengthening of Research Capacities in Industry

In addition to implementing the strategy of excellence the Council sees a particular need to:

- support the necessary process of structural change (e.g. through programmes to improve the possibilities for financing high-tech start-ups or incentives

for the development and expansion of research centres of corporate groups in Austria)

- promote thematic foci on specific strength areas or in areas which have an especially high future potential and

- improve the transfer of technology and innovation, in particular for the benefit of small and medium-sized enterprises (SMEs).

Expansion of Internationalisation

In general Austrian research, technology and innovation policy should be harmonised to a greater extent with the goals of the European Research Area. At the programme level and in terms of grants, the Council believes that it is possible to promote internationalisation by continuing and expanding international co-operation programmes and by providing adequate endowments for incentives and additional financing for participation in EU programmes.

Dialogue between Science and Society

The public awareness initiative which the Council played a major role in initiating will be continued. However, the planned measures should be bundled and co-ordination between them improved.

Emerging Thematic Areas

The focus upon emerging sectors of research and Austrian strength areas such as the life sciences, information and communications technologies, nano-technologies and technologies for sustainable development will be continued. In the Council's view, the promotion of security research being a topic embracing several scientific disciplines and

technology fields represents an essential development at the European level.

The implementation of theme-specific key area programmes must on no account take place at the expense of bottom-up promotion. Top-down programmes must fulfil both a scientific and economic demand (reality check) and in particular permit the development and expansion of clusters or similar structures. The topicality of the key areas must be reviewed at regular intervals.

Recommendations Regarding the Promotion Structure

The Council believes that the bundling of economically-oriented research promotion at the Austrian Research Promotion Agency (FFG) has now created a good general framework for continued structural reform. As a next step, and in keeping with past recommendations, the Council now demands the separation of the strategic level at the ministries from the operational level at the handling institutions.

The ministries should—where it is not yet the case—source out the management and handling of the programmes to the Austrian Research Promotion Agency or another suitable institution. These transfers must be carried out in a joint process between the ministries and the promotion agencies, whereby it must be ensured that the expertise needed to run the programmes is established at the promotion agencies at an early enough date and in sufficiently high quality.

Moreover, the Council recommends an overall simplification of the Austrian research, technology and innovation promotion system. For this purpose, thematically related programmes could be amalga- ►



simplify and optimise



mated and similar types of programmes integrated under a joint programme umbrella.

The RTD National Foundation makes a valuable contribution to increasing medium-term planning certainty. In the Council's view, Foundation funds should therefore be used primarily for programmes and initiatives with a long-term orientation. In particular, the development of long-term centres of excellence should be supported.

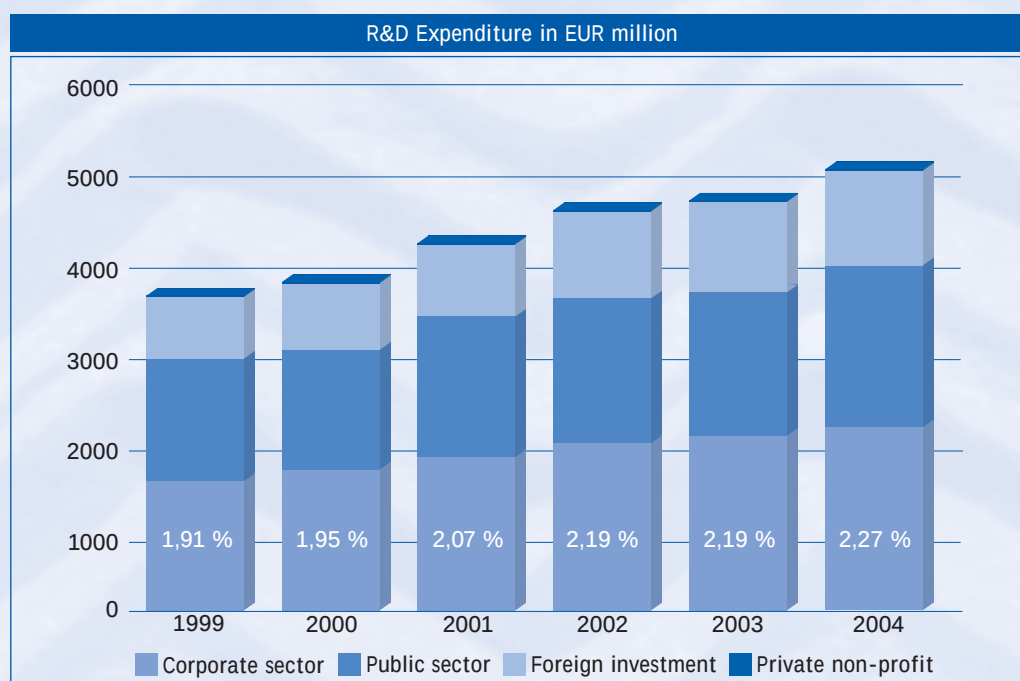
However, it must not be forgotten that in the past the Fund for the Promotion of Scientific Research (FWF) and the former Austrian Industrial Research Promotion Fund (FFF, now Division 1 of the FFG) received considerable funding from the Austrian National Bank.

As the National Foundation replaces the financing previously received from the National Bank, FWF and FFG will also have to receive funds from the National Foundation if the ordinary budget is not increased.

The funds from the Action Programme should be concentrated upon impulse programmes of a temporary nature.

The Council is aware that it is not yet possible to separate the tasks of the Action Programme, National Foundation and ordinary budget in an ideal form. Basic activities by the ministries, coverage of which ought to be safeguarded by ordinary budgets, must currently be financed by Action Programme or Foundation funds due to a lack of resources. ■

This diagram illustrates the dynamics of R&D expenditure over the last 6 years. From 1999 to 2004 the R&D quota rose substantially: from 1.91 to 2.27 percent of GDP. This is higher than the EU average of 1.93 percent (2002).



Grant Reform: Improve Transparency by Bundling

The Austrian grant landscape is complex and fragmented, in order to improve transparency the Council has established a working group to address the issue. The working group met five times between January and November 2004 under the guidance of the Deputy Chairman of the Council Prof. Günther Bonn. In the following interview he outlines the key results and recommendations.

How much money does the Federal government provide for grants?

Bonn: There are a large number of grant programmes in Austria which are funded by the Federal government to the tune of some EUR 30 million per annum. Approximately 80 percent of these funds are allo-

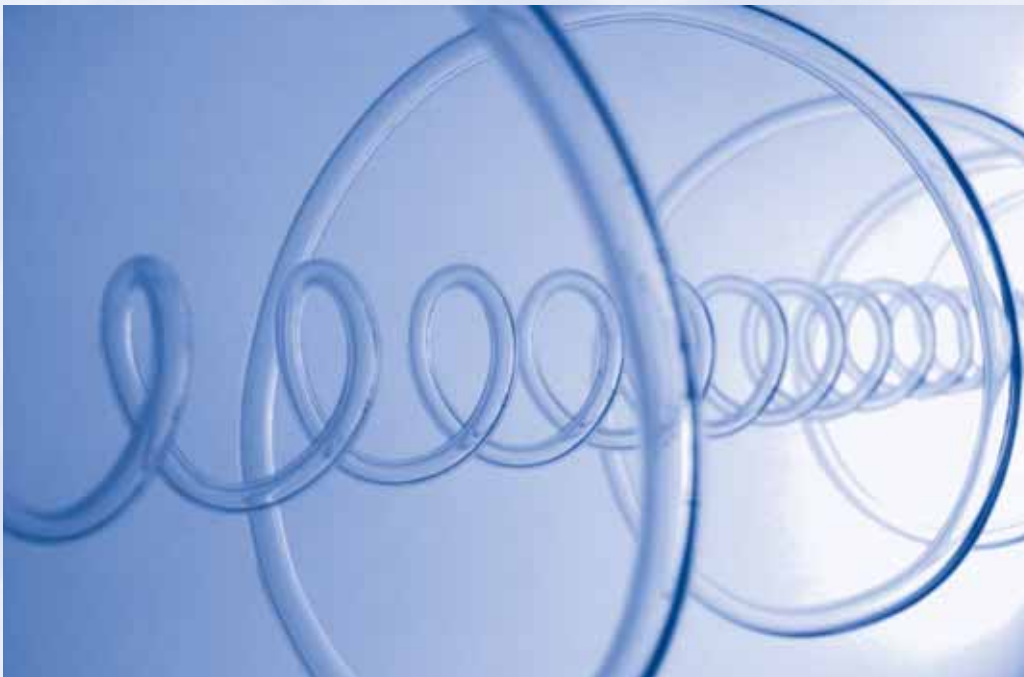
cated by the Ministry of Education, Science and Culture. The remainder is managed within the framework of development co-operations run by the Ministry of Foreign Affairs and the Ministry of Transport, Innovation and Technology. Additional funds are provided for the Start and Wittgenstein prizes, and by the EU and USA for their corresponding grant programmes.

What do you consider being the weaknesses of the Austrian grants system?

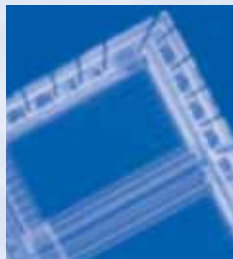
Bonn: The working group would like to see a more concise system for awarding grants and a more efficient handling process. We also criticise the lack of critical mass. It is immediately apparent that the programmes evolved over time and were not de- ▶



Günther Bonn



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veloped systematically. To some extent there is also a lack of clear aims.

What goals should the reform definitely fulfil?

Bonn: The working group has formulated three important goals. Firstly, overlapping should be eliminated, secondly the number of programmes should be reduced and the smallest programmes amalgamated. This would create critical mass and make better use of overlaps. Thirdly, we recommend setting up a one-stop-shop for applicants.

We expect this would lead to a reduction of administrative costs and increased transparency and objectivity. Moreover, applicants should be provided with uncomplicated access to programmes that are accurately tailored to their needs. For this reason, we are explicitly striving to bring about a standardisation of the criteria according to which grants are awarded.

How will these goals be achieved?

Bonn: The recommendations are now being followed by developing detailed working plans. The Council and the Ministry of Education, Science and Culture will provide a web-based one-stop-shop for applicants on

the basis of existing web portals. It should soon be possible to submit and process applications for all grants electronically. With regard to the other aims—amalgamation, reduction of the number of processing agencies and standardisation of criteria—we are already involved in talks with the responsible bodies.

The promotion of women remains a particularly important issue. More has to be done in this area by introducing gender mainstreaming for all programmes. Furthermore, separate grants designed especially to assist women will be continued.

What role will the Council play in this process?

Bonn: We will present the further steps and monitor implementation of the recommendations. In the months before summer we will draw up proposals on how the management of the programmes can be bundled. The climate in the working group was extremely constructive and I hope the measures will be implemented in the same positive spirit. After all, we should not forget that the purpose of all of this is to improve the qualifications of young students and researchers. Relationships which are formed while studying abroad are the capital of the future. ■

Profile

Univ.-Prof. Dr. Günther Bonn studied chemistry at the Leopold Franzens University in Innsbruck. After lengthy scientifically motivated periods in the USA he was appointed to the chair of analytical chemistry at the University of Linz in 1991. In 1994 he returned to his alma mater in Innsbruck where he has been professor in ordinary of analytical chemistry and radiochemis-

try since 1995. Bonn, who holds a number of patents in the field of DNA analysis, is a member of the Salzburg Research Council and other advisory boards. He was appointed to the Austrian Council by the Minister for Education, Science and Culture. Günther Bonn was elected Deputy Chairman at the constitutive meeting of the Council on 6 September 2000.

Creating Knowledge

A stable basis of expertise on national developments and international benchmarks are required in order to be able to define strategies. The Council establishes working groups on central issues and each year commissions a number of studies to underpin its long-term strategies with external expertise. This chapter provides an overview of this basic work.





Update: What has been accomplished

The Council has established working groups for priority themes. Some of these initiatives took major steps forward in the second half of 2004. The most recent advances are presented below.

Gender Mainstreaming

Women are, as the relevant studies show, very poorly represented in research and technology overall. This is especially true at higher levels, in the field of industrial research and in many of the natural sciences and engineering disciplines. In the Council's view there are two complementary instruments with which this situation can be changed: measures to promote women in research and technology and gender mainstreaming. In December 2003 the Council commissioned an inter-ministerial working group to develop common standards for gender mainstreaming in RTI promotion. Building upon the experiences of the individual ministries, the working group has compiled a folder which can be enlarged upon. This contains guidelines and instructions which provide a basis upon which individuals who are responsible for programmes at the ministries and other funding agencies can design their promotion measures to ensure that they meet the requirements of gender mainstreaming. The working group will continue to supervise the folder.

The Council acknowledged this result at its meeting on 22 February 2005 and recommended the implementation of the proposed approach.

Biotechnology

Together with representatives of the responsible ministries and other experts the Council has drawn up a concept for the future development of the life sciences in Austria. The concept represents a first important

step toward the development of an Austrian strategy for the life sciences and will form the basis for the continuous development of specific measures.

Innovatives Österreich

Innovatives Österreich is a communication platform designed to stimulate dialogue on innovation, research and technology development among the general public. The Innovatives Österreich campaign was launched in September 2002 and encompasses a wide range of measures. Within the scope of the campaign events, exhibitions, programmes to improve qualifications, prizes, a course on communicating science, a citizens' conference on "Genetic data: wherefrom, where to, wherefor?" and many other projects were carried out. A total of 24 individual measures were implemented. The second part of the campaign was started during 2004. The campaign mainly embraced projects organised by those ministries responsible for research, for example, the conference and exhibition Language of Networks took place at the Ars Electronica Centre in Linz in September 2004 and attracted a high level of international attention.

Humanities, Social and Cultural Sciences

Following completion of the strategy developed for the humanities, social and cultural sciences, the working group appointed by the Austrian Council will now meet less frequently and will be convened as necessary. It will be a task of the working group to accompany the implementation of the Council's recommendations (monitoring) as well as to develop further-reaching proposals for the future of the humanities, social and cultural sciences. At a meeting of the working group in November 2004, represen-

tatives of the Ministry of Education, Science and Culture reported on the implementation status of the programmes and initiatives which the Council had recommended for Action Plan funding:

- Continuation of the programme New Orientation for Democracy in Europe (NODE). The second call ended in October 2004, the third and final call should take place in 2005.

- Development of new, overlapping national key area programmes: TRAFO is a methodological programme for transdisciplinary and interdisciplinary research. The first call has already taken place. The programme committee that will develop a new theme-focused key area programme was constituted at the end of November.

- Promotion of young scientists: The new doctoral programme Doc-team will be carried out by the Austrian Academy of Sciences whilst the Ministry of Education, Science and Culture is responsible for post-doctoral programmes.

- Dynamic quality assurance for non-university research: A second call is planned for 2005/2006.

Furthermore, the Ministry of Education and the Austrian Council will finance a study on Austria's cultural and scientific heritage.

In other working groups, the goals and approaches already formulated have been approved. These include:

- Nano-sciences and technologies

<http://www.asaspace.at/nano>

- Research for sustainable development

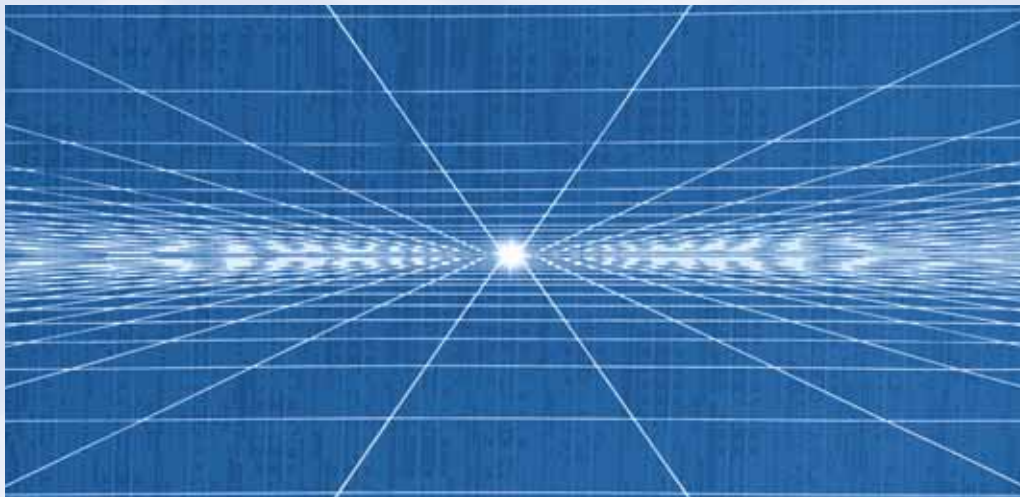
<http://www.forne.at>

- FFORTE – Women in research and technology

<http://www.fforte.at>

- Co-operation between Federal government and the provinces

If you want to know more about this, please contact the Austrian Council's secretariat or consult the aforementioned websites. Written information from the Council's perspective is also available in Part 1 of the Annual Report 2004. ■



Basic Expertise: Reports and Studies 2004

The following paragraphs summarise the results of the studies which have been published on the Austrian Council's website in the last six months. They can be downloaded free of charge from <http://www.rat-fte.at>



The Impact of Policy Advice

The annual meeting of the European councils took place on 3 November: The study "The Impact of Policy Advice" carried out by the Erasmus University in Rotterdam was the subject of intense discussion. At the suggestion of the Austrian Council the study is to be translated into English. Other subjects of discussion were: Research Careers (Danish report) and Matching of Research Funds (Dutch report).



Austrian Membership in International Organisations and Institutions Relevant to Research

The study commissioned by the Austrian Council, "Austrian Membership in International Organisations and Institutions Relevant to Research", was completed in September 2004 and presented to the Council by the authors.

The study includes a review of the selected organisations in the natural sciences and technical disciplines as well as a cost-benefit analysis of Austrian membership in the organisations.

The most important conclusions:

- Overall Austrian membership in the organisations under review has developed positively; CERN and ESA should be highlighted in particular.

- Nevertheless Austrian performance can still be improved; the opportunities offered by membership

should be exploited more intensively, e.g. at EMBL (European Molecular Biology Laboratory) and EMBC (European Molecular Biology Conference), which are of central importance for Austrian and European research.

- The study also examined the advantages and disadvantages of Austria joining ESO (European Southern Observatory). Austria has a small scientific research base in terms of numbers which spread among three universities (Vienna, Innsbruck and Graz). However, the country is equipped for membership. Joining ESO would ensure that astronomy and astrophysics could be pursued in Austria at the highest scientific levels in the future.



Study on Research, Technology and Innovation Policy Concepts in an International Comparison

This study, which was completed in July 2004, is a comparative analysis of the research, technology and innovation policy concepts of 23 countries. The general conditions, institutional aspects, content and focus of direct and indirect promotion measures in five selected countries (Germany, Finland, the Netherlands, Switzerland and Great Britain) were examined in detail.



Priorities in Science and Technology Policy – An International Comparison

The main focus of the study "The Future Potential of Austrian Research" was upon thematic key areas. The follow-up study "Priorities in Science and Technology – An International Comparison", which has been published recently, examines how research, technology and innovation policy priorities

are set in practice in various countries and investigates two issues in particular:

- How is the selection of key themes justified?
- How are key themes identified?

On the basis of specific examples the study provided valuable advice about how Austria could set priorities in RTI policy more efficiently and coherently.



Study on National and Supra-National Strategy Plans for Research and Development in Europe

The authors of this study analysed the latest developments in European research, technology and innovation policy and the resultant options to re-orientate national policy. A series of good practice promotion programmes in other EU countries were examined and evaluated in terms of their suitability for the Austrian innovation system.



Study: The Future Demand for Human Resources

Another study commissioned by the Council, "Comparison of Demand and Future Supply of Human Resources in the Austrian National Innovation System", was completed in November 2004. The most important conclusion: A numerical comparison of the demand for and future supply of human resources on the basis of both computed projections and surveys in the three sectors and taking into account the complexity of the theme, the quality and currentness of the statistical data and the selected framework conditions, did not reveal any significant or explicable quantitative demand shortfall. It is therefore clear that in order to achieve the Lisbon goals for R&D expenditure, special attention has to be given to efficient research and inno-

vation structures and improving the quality of education and training.



Study: The Role of Special Funds in Catching-up R&D Strategies

The study identifies countries with particularly dynamic research and development expenditure and analyses their strategies. In addition it examines the main factors which are responsible for higher than average growth in industry-sponsored innovation-related expenditure. Finally, the catching-up strategies of six selected OECD countries are analysed in detail.



Development of a Feasibility Concept to Promote the Development of Centres of Excellence in Austria

This feasibility concept starts from the basic assumption that competence centres can be developed extremely successfully if there is close co-operation between science and industry. Austria, in particular, as a small EU state with only a small number of global corporations or headquarters, possesses better than average indicators with regard to education, further training and to location. It should therefore be predestined to develop existing strengths to standards of global excellence in selected niches and areas in order to achieve theme leadership on the required critical scale in these areas. ■



recommendations



Overview of Council Recommendations in Recent Years

The Council for Research and Technology Development is the strategic advisory body to the Austrian government on all matters of research, technology and innovation (RTI). It draws up recommendations for the medium and long-term strategic orientation of Austrian RTI policy and also makes specific statements concerning the use of public promotion budgets.

The Council prepares these recommendations in a close dialogue with the relevant players in the Austrian innovation system. Experts from the political and administrative sectors, promoting institutions and from science and industry are involved in working groups and similar dialogue forums. Recommendations made by the Council are published on its website <http://www.rat-fte.at> ■

Thematic and Structural Recommendations	
01 02 03 04 05 06 07 08 09 10 11 12 2001	Council proposals concerning the reorganisation of universities as well as the structure of academic careers, March 2001 Recommendation concerning the planned large-scale research facility AUSTRON, March 2001 Council proposals to improve the legal framework for cross-border mobility of researchers, May 2001
01 02 03 04 05 06 07 08 09 10 11 12 2002	Biotechnology location Austria, February 2002. Promotion of Women in Research and Technology, February 2002 Measures to promote business start-ups, February 2002 Initiative for nano-sciences and nano-technology, February 2002. The Council's statement on university reform, February 2002 Office of Science and Technology in Washington, July 2002 Measures to strengthen the humanities, social and cultural sciences, July 2002 Monitoring of RTE promotion programmes, July 2002 European Research Area and EU Framework Programme for RTD, July 2002
01 02 03 04 05 06 07 08 09 10 11 12 2003	Intellectual Property Rights, Patents, February 2003 European Southern Observatory, April 2003 Humanities, Social and Cultural Sciences, September 2003 On the promotion of public awareness of the importance of research, technology and innovation, November 2003
01 02 03 04 05 06 07 08 09 10 11 12 2004	
01 02 03 04 05 2005	Recommendation concerning the reform of grants awarded by the Federal government, January 2005

Recommendations Concerning the Use of Funds from Action Programmes and the RTD National Foundation	
2001	01 02 03 04 05 06 07 08 09 10 11 12 Funds for immediate measures by the ministries to promote RTD, January 2001 Funds for the competence centres and CD laboratories, the establishment of the Centre for Molecular Medicine and the promotion of young scientists, March 2001 Special funds for several programmes and measures by the ministries as well as complementary structural recommendations, June 2001 More detailed account of the recommendations of 27 June 2001, September 2001 Special funds for FWF and FFF, for impulse programmes in the areas of sustainability, transport and space, as well as a programme to create awareness of the social and scientific importance of research, technology development and innovation, November 2001
2002	01 02 03 04 05 06 07 08 09 10 11 12 Impulse programme Democratic Development and special funds for the FWF and Academy of Sciences, February 2002 Impulse for the non-university sector, grants etc. April 2002 Release of funds for international RTD co-operation, July 2002
2003	01 02 03 04 05 06 07 08 09 10 11 12 Principles for the use of funds from Action Programme II, August 2003 Use of funds from Action Programme II in 2004, December 2003
2004	01 02 03 04 05 06 07 08 09 10 11 12 Recommendation concerning structural reform and the National Foundation, March 2004 Recommendation concerning the use of funds from the National Foundation, April 2004 Further recommendation concerning the use of funds from the National Foundation, moreover, recommendations for the FH-plus programme, the RICAM Institute of the Academy of Sciences and Research on Sustainable Development (FORNE), June 2004 Recommendation concerning the use of funds from Action Programme II and the National Foundation in 2005, November 2004 Explanations concerning the Recommendation for the use of Action Programme II and the National Foundation in 2005, December 2004
2005	01 02 Recommendation concerning the use of funds from Action Programme II and the National Foundation in 2006, January 2005
General Strategic Papers	
2001	01 02 03 04 05 06 07 08 09 10 11 12 Vision 2005 – Among the Best through Innovation, May 2001 Research Strategy Austria 2.5% + plus / Prosperity through Research and Innovation, May 2001
2002	01 02 03 04 05 06 07 08 09 10 11 12 The National Research and Innovation Plan, December 2002



