

## **Vision 2005**

# **To be the Best Through Innovation**

### ***Preamble***

The Council for Research and Technology Development was established by the amendment to the Research Promotion Act passed on 11 July 2000 to advise the Austrian government in all matters pertaining to research, technology and innovation. The Council was constituted on 6 September 2000.

The Council's remit includes the development of a long-term Austrian strategy for the field of research and technology development, monitoring of its phased implementation, drawing up priority guidelines for the national research and technology programmes and making recommendations about how Austria's position can be strengthened within the framework of international research and technology co-operations. The Austrian government and all other relevant decision-makers have made it their express goal to increase the Austrian R&D quota from its present level of 1.8 percent of GDP to 2.5 percent by 2005.

The Council for Research and Technology Development welcomes this ambitious goal and believes that it can be realised if all forces are strengthened and bundled.

The following paper describes the fundamental values, principles and visions of a future-oriented research, technology and innovation policy as well as the main strategies.

## ***I) Purpose Statement***

The dynamic development of the global economy toward globalisation has led to increased competition between the individual national economies. In this competition between international business locations, research and technological development has become a factor for a strong position. An economically highly developed country with high wage levels such as Austria can only gain a competitive edge through research, development and innovation. The existence of an adequate pool of highly qualified human capital is the prerequisite for this. The central objective of Austrian research, technology and innovation policies must therefore be increase RTD with the aim of improving the competitive strength of the Austrian economy, making an important contribution to solving social problems and ensuring social stability through the creation of long-term highly qualified jobs. Only a concerted effort by all those involved in the national innovation system and courageous institutional reform can ensure a rapid increase in the contribution made by research and technological development to the wealth of the nation.

The Council for Research and Technological Development regards the plan to raise the R&D quota from 1.8% of GDP at present to 2.5% in 2005 as a central task. This entails increasing annual R&D expenditure from ATS 50 bn. at present to some ATS 86 bn. in 2005. Achieving this aim will require a considerable increase in both public funding as well as over proportional use of private sector funding. For this reason, additional public sector RTD funding should largely be targeted at areas with a significant leverage effect. Furthermore, it is vital to optimise existing structures to avoid overlapping and achieve a concentration of efforts. In view of the shortage of available public funds, we demand that RTD is given clear priority in the competition for resources among the various policy areas.

## ***II) The Council for Research and Technology Development's Self-Image***

The Council sees its function in the provision of systematic, independent and sound advice. Our goal is to make a significant contribution to the creation and implementation of a forward-looking research, technology and innovation policy. We regard ourselves as a central network hub of the broad technology and research landscape, as a co-ordinator and augments of diverse activities, as a link between the players, as a filter and, above all, as an instrument for setting accents.

### ***III) Our Shared Values and Guiding Principles***

To fulfil the tasks assigned to us by law, the Council for Research and Technology Development will be guided by a series of basic shared values and principles.

#### **RTD and Society**

At the start of the 21st century we are living in a knowledge-based society. Constructive curiosity and productive creativity advance progress and increase prosperity. Innovation is the motor of economic prosperity and forms a solid foundation for this society's further social and cultural development. As there is insufficient public awareness of this fact, a bundle of appropriate measures should be taken to make this clearer to a wider audience.

#### **Prosperity Through Social Consensus**

Successful research policy must go hand in hand with broad public acceptance. The Council therefore strives to achieve a social consensus and makes a commitment to the goal of sustainable development. Conclusive success can only be achieved if RTD tasks are made an issue of public debate.

#### **Orientation of RTD**

The Council takes account of the differing requirements of pure research, applied research and development.

Free pure research of an international standard must be promoted. However, we see a particular need to strengthen applied research with regard to medium-term economic implementation in new or existing companies.

Intensification of co-operation between business and university and non-university research in joint projects is a core element of the new technology policy.

#### **Committed to Output**

We will only achieve the government's aim if the private sector R&D quota is dramatically increased (the aim is to double it). Appropriate support instruments must be implemented on the basis of strategies co-ordinated between the business and science sectors.

#### **Target: World Class Quality**

The Council is aiming for world-class RTD projects as the prerequisite for increasing Austria's international competitive strength. Just as the market evaluates the RTD results of business, we demand specific evaluation criteria and regular evaluations for the

various forms of research and teaching. These evaluations must also have consequences for the expansion and financing of the relevant institutions.

A modern research and technology policy must also set priorities. Existing strengths must be reinforced; areas with potential should be cultivated until they have reached top international standards. The development and increase of competence and knowledge in Centres of Excellence should be promoted.

### **Systematic Approach**

We are committed to a systematic approach, both across the various disciplines as well as between the institutions. Incentive systems must be developed to create the conditions for self-renewing structures.

### **International Integration**

The Council regards research and development as an optimal instrument for expanding internationalism and participation in its distribution of labour. Austria must enrich international programmes and play an active role in shaping them.

### **Focus on Human Resources**

We regard human capital as the most important prerequisite for the competitiveness of the Austrian economy, and science as the basis for the freedom of research and teaching. The availability of qualified and motivated workers is of central importance. Such a pool can only be created if the public's appreciation of science, research and development is awakened and promoted. Innovative methods of knowledge transfer through use of the new media should also be promoted.

## ***IV) Our Vision 2005 – Strategies for the Future***

The Council for Research and Technology Development has drawn up a bundle of target visions for Austria's status in 2005 and laid out the path forward and strategy elements in its research strategy for Austria "2.5%+ plus: Prosperity through Research and Innovation." These goals and the corresponding strategic guidelines are set out below. The concept should be viewed as a policy statement that will be brought to life in the next few years through detailed operational concepts and recommendations. Neither should the paper be seen as a rigid programme of instructions; on the contrary, these guidelines should be subject to continuous additions and adaptation. The Council plans regular evaluations of the implementation of its strategies and recommendations as well as of its own activities.

## **Education as a Prerequisite**

The Council demands the implementation of the following measures to increase the efficiency of the Austrian university and polytechnic system:

- Increased flexibility and diversification of the tertiary education system,
- Differentiation and locational streamlining of university structures,
- Establishment of more Centres of Excellence,
- Expansion of opportunities for further education and greater permeability of the education system,
- Introduction of an international performance evaluation for universities,
- Performance differentiated financing of universities and
- Improved technical infrastructure in the educational sector.

We wish to double the number of graduates in the innovative disciplines. A number of strategies will have to be followed to achieve this goal:

- Intensification of natural sciences tuition, stimulation of creative potential and problem-solving oriented thinking to promote enthusiasm for research,
- Shortening of university study duration (average study duration = regular duration + 2 semesters),
- A differentiated and socially equitable system of university fees and grants and
- Equivalent acceptance procedures at universities and polytechnic colleges.

A repositioning in an international environment is necessary with regard to:

- Ability and willingness to move and participate in joint international projects,
- A significant expansion of research contacts and grants in the high-tech sector, especially in central and southeast Europe as well as
- Greater integration of Austrian universities in the European research structure.

## **Qualified Position in International Competition**

The Council pursues the following goals:

- To double the number of companies: more technology-based and globally oriented businesses;
- Leading position and theme leadership in several specific promising areas of research and technology;

- Improvement in Austria's position as an attractive location for multi-national companies;
- Improved participation in international research and technology programmes.

Full integration in the European research landscape and the promotion of Centres of Excellence are vital for achieving these goals. Improving the research and technology infrastructure is also extremely important. The development of a socially relevant large-scale international research facility suitable for Austria's needs can be expected to provide significant impulses.

### **Quantum Leap in New Businesses**

The number of high-tech companies being founded should be doubled by 2005. The following strategic paths should be taken to achieve this aim:

- Increased incentives for setting up new businesses,
- Change in the authorities' self-perception: Helper/coach instead of scrutiniser,
- Measures to ease equity capital formation,
- Significant tax concessions in the start-up phase for high-tech companies,
- Additional tax concessions in the patenting and licensing sectors.

### **Creativity in Financing**

The required increase in the R&D quota can only be achieved by tapping new sources of finance. It is of equally central importance to ensure planning security for a number of years at a time, on the one hand through medium-term budget planning, on the other by providing funds that are not dependent upon the budget.

The following strategies should be followed to achieve this aim and also to maximise the lever effect of state funds:

- Optimisation of co-financing ("matching funds") with federal states, international institutions and through public-private partnerships
- Establishment and expansion of funding for a non-budget financed institution (National Fund, Research Foundation, etc.)
- Earmarking of state revenue for research and development
- Tailoring of budget financed university research according to economic, social and societal usability
- Significant increase in the share of money to be obtained through competitive procedures, particularly in the university sector

Start-up grants, to the extent they are accurately targeted, are instruments with a high leverage effect. Special attention should be paid to:

- Increased utilisation of the venture capital market,
- Expansion of support programmes in the seed and early stage sector,
- Promotion of business angels and incubators,
- Incentives for starting or increasing R&D activities at companies, especially medium sized companies,
- Focussing on model projects,
- Stimulating networks and clusters as well as
- Support for small and medium sized companies in field of patents.

## **Co-operation Through Networking**

Improving willingness and ability to co-operate as well as increasing actual co-operation intensity between the players in the innovation system at a national and international level is a central task. A significant proportion of new projects for economic development should be created through co-operation between university and non-university research institutes with industry. This applies to:

- Research projects,
- Training and further training,
- Know-how and technology transfer, in particular in favour of small and medium sized companies,
- Product and process innovation

The implementation and expansion of programmes for start-ups and incubators at universities (also with risk capital), as well as a two-fold increase in the number of competence centres in clusters with educational facilities will make a contribution that is just as important as that made by the initiation and promotion of industrial clusters and corporate networks in consultation between national and regional governments.

## **Austrian Society – Ready for Innovation**

Our vision for 2005 comprises

- A public climate that is conducive to research,
- A courage to recognise elites that are open and ready to assume responsibility for innovation and
- Awareness on the part of society that only competitive R&D can guarantee sustainable development and future success.