In the Vanguard of Research

Strategy for the Research Council of Norway 2009 – 2012

About the Research Council of Norway

The Research Council of Norway is a national strategic and funding agency for research activities. The Council serves as a chief source of advice on and input into research policy for the Norwegian Government, the central government administration and the overall research community. Moreover, the Research Council works together with research institutions as well as the private and public sectors to enhance financial and quality targets in Norwegian research and innovation activities. It is the task of the Research Council to identify Norway's research needs and recommend national priorities. The Council utilises specifically-targeted funding schemes to help translate national research policy goals into action. The Research Council provides a central meeting place for those who fund, carry out and utilise research and works actively to promote the international-isation of Norwegian research.

Foreword

Research is a source of new and remarkable opportunities for society as a whole, and thus represents an indispensable collective asset. Research-policy input and priorities must be distilled from scientific input and social relevance concerns in a dialogue between research and the community. The strategy put forth in *In the Vanguard of Research* closely reflects the principles and targets of the Research Council's governing bodies and incorporates the contributions received during a comprehensive review process. The Research Council would like to extend its thanks for the many valuable perspectives that have emerged during these efforts.

Geir Stene-Larsen
Chair of the Executive Board

Arvid Hallén
Director General

Introduction

In the Vanguard of Research sets out the strategy for the Research Council of Norway's activities for the period from 2009 to 2012. This strategy revolves around four key challenges facing the Norwegian research establishment. These are:

- **To ensure adequate capacity and quality:** There must be greater investment in research activity and the overall quality must be enhanced to help researchers, trade and industry and society at large to develop and compete in an increasingly globalised world.
- **To meet the changing needs of society:** Research must seek to respond more directly to specific social and industrial challenges, especially in relation to welfare and industrial development, as well as global climate and energy problems.
- **To create a sounder structure:** The structure of the Norwegian research system, its national partnerships and its international participation must be upgraded to achieve optimum utilisation of Norway's overall R&D resources.
- **To promote new learning:** Research must generate results that can be applied by the private and public sectors alike, as well as provide a framework for learning that will benefit the national knowledge culture.

The strategy identifies principal points of action for the Research Council in each of these four areas. These entail efforts to strengthen and further refine ongoing activities as well as proposals for new activities. The Research Council acts as an advisor on and an implementer of research policy. Thus, the points of action serve both as input to the authorities and various stakeholders in the research establishment, and as guiding principles for the Council's own activity. Areas of particular priority during the strategy period are:

- Boosting activities within national thematic and technological priority areas, and global challenges and climate-related issues in particular.
- Increasing investment in scientific equipment and research infrastructure.
- Improving thematically independent funding instruments for researchers and trade and industry.
- Expanding the framework for internationalisation.
- Ensuring that all players can compete on an equal footing within the research system.

The new strategy will provide the platform for the Research Council's various strategic documents, where these priorities will be discussed and elaborated in more detail. These priorities will be expressed in economic terms in the annual budget proposal, and they will be adjusted to conform to current policy on an ongoing basis. A set of performance targets for the implementation of the strategy has been designed.

Vision:
In the Vanguard of Norwegian Research

Research and development expand the boundaries of what we know, understand and can achieve. It adds cultural resonance to society and creates a viable basis for sustainable development, increased welfare and greater value creation.

A knowledge-based society is dependent on a research establishment that is on the cutting edge internationally. The Research Council seeks to strengthen the international position of Norwegian research by working as an agent of change in collaboration with other members of the research system. The Research Council will work to promote high-calibre research, and to win greater acknowledgment of research as a cultural, value-creating force that fuels social development.

The Research Council's mission

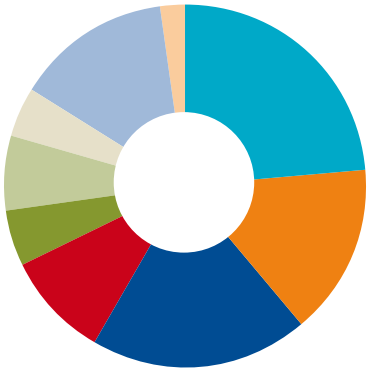
The Research Council is charged with generating value added in the research system through the achievement of research that could not otherwise be realised by the various stakeholders *on their own*. It is the Research Council's mission to devise a cohesive strategic approach to promote the establishment of new fields of research and the attainment of higher calibre research. The Research Council is also charged with implementing new initiatives to meet the needs of society, designing a sound underlying structure for the research system, and developing new forms of interaction between research, trade and industry and society at large.

In its role as an *advisor*, the Research Council will help to ensure that investment in research is not only adequate but also properly targeted. Input from the Research Council is directed toward the authorities and the various members of the research system, and reflects both the principles set out by the governing bodies and the results of extensive external consultation. The Council's input is thus provided on a democratic, politically autonomous basis, which is an important research policy principle.

The Research Council also has a role as an *implementer* of the authorities' research policy objectives. The Council ensures that priorities set out at the more detailed levels are rooted in scientific evaluations carried out by a broad-based network of scientific advisors and decision-makers.

The Research Council is also charged with establishing and improving *meeting places* and networks that promote more targeted prioritisation, better dissemination of results and learning as well as a more wide-ranging dialogue on research and research policy.

Budget 2009 – funding by discipline



Education and Research	1 459
Fund for Research and Innovation	930
Trade and Industry	1 208
Petroleum and Energy	570
Fisheries and Coastal Affairs	314
Agriculture and Food	400
Environment	282
Other ministries	856
Miscellaneous	120

Total NOK 6 138 mill. administration incl.

Trends and challenges

The need to increase research capacity
The importance of research in stimulating innovation, solving problems and generating knowledge as well as cultural awareness is growing every day. This applies as much to educational, cultural, environmental, welfare, health and communications spheres as it does to the various branches of industry. Knowledge-related development is accelerating as a result of global competition, and knowledge is rapidly coming to represent the nation's greatest competitive advantage. The emergence of increasingly complex problems and the fast pace of technological advancement open *up new research opportunities*. This has manifested itself in an expansion of inter- and multidisciplinary research, which in turn gives rise to new disciplines. As the distance between research and its application grows smaller, new opportunities materialise in all segments of the research and innovation system, making it necessary to expand research capacity and enhance quality.

Now more than ever, the future competitiveness of *trade and industry* is dependent on increased research activity in selected service, technology and industrial areas. A wide range of industrial opportunities will be needed to replace the loss in value-creation that will occur when oil and gas production declines. Creating these will require greater investment in research within and for industry as well as better utilisation of the innovation potential of research communities. Increased investment is needed to further enhance the dynamic industries that already exist, to increase the innovative power of important, low-research industry and to foster the development of new industrial activity. At present, trade and industry are investing less than one per cent of the gross domestic product (GDP) in research. Public instruments must be used to encourage companies to invest more in conducting their own research.

Adequate recruitment is essential if research activity is to be successfully increased. It must be more lucrative and more attractive to pursue a career in research. The need for access to proper equipment is fundamental to all fields, and efforts to increase capacity, efficiency and quality can only succeed if there is sufficient investment in *research infrastructure*. High-quality research is critical for ensuring participation in the international knowledge pool and for guaranteeing satisfactory returns on research investments.

More knowledge is needed to meet the challenges facing society
Norway and the global community are confronting profound processes of change. This offers new opportunities and poses social challenges that will require increased interdisciplinary research activity.

- **Processes of globalisation** represent great potential but also pose major hurdles in relation to industrial competitiveness, international trade, cultural identity and migration, health and the spread of disease, and the distribution and management of the Earth's resources. Globalisation means that the challenges facing other parts of the world become Norway's challenges as well.

- **Climate change** has highlighted the mounting threat to the environment. This creates a new set of challenges for research on renewable energy sources, environmental technology and climate. In addition there is a need for research on new forms of global-level governance and sustainable development. And at the same time, the transition to a more climate-friendly society will spawn new opportunities for Norwegian industry.

- **The public sector** is facing a whole new spectrum of challenges. In a modern, closely integrated society, public regulation, risk spreading and health and welfare safeguards will have a greater impact on the people and the sphere of activity of civil society than has previously been the case. The welfare state must find ways to cope with an ageing population. Better knowledge about the way the public sector works and the obstacles it must surmount will be crucial to ensuring continued economic growth and welfare.

- **Individualisation** is made possible through greater cultural diversity, new educational possibilities, care services and a modern working life. A rising degree of individualisation represents a significant challenge to society in terms of health, education, choice of occupation and ways in which people live together. Greater insight into the conditions underlying, and the ramifications of, people's life choices are needed.

The research system is undergoing change

The universities, university colleges, independent research institutes and trade and industry – and the *interaction* between them – are undergoing major change. The university colleges are broadening their research capacity and, like the universities, are to increase collaboration with industry and other partners. Regional research funds are being established to add a stronger regional dimension to innovation-oriented research. The increased focus on research by the regional health enterprises paves the way for different cooperation-based constellations and a redistribution of tasks between these institutions and the universities and industry, respectively. As new players join the research institute sector, new constellations emerge within the university and university college sector. The capacity to carry out commissioned research projects must be combined with more clearly defined scientific ambitions. There is a risk that too many small research communities may emerge at a time when internationalisation dictates a need for quality, visibility and a minimum critical mass.

International discipline-based evaluations reveal wide variation in the world of Norwegian research. While there are a number of outstanding research environments, there are also too many smaller and less effective groupings that produce too little research. There are indications that the distribution of tasks between institutions is not well enough administered. The allocation of resources is not being managed firmly enough and needs to be *governed more strategically*, although this varies greatly among the many institutions. At the same time, resources in many fields are too limited to allow optimal realisation of research potential. These components combined lead to a research system in which the quality of research and utilisation of R&D resources is not entirely up to par.

International cooperation provides access to global knowledge production and encourages the effective utilisation of results from the international research front. The contours of a more competitive scientific arena, in which a growing number of countries are participating, are emerging. At the same time, research policy is becoming internationalised as more and more decisions are being shifted to international institutions via networks of researchers, companies, research policymakers and, not least by the establishment of a common European Research Area under the EU. International research cooperation is also an excellent means of presenting Norway as a credible partner in climate and energy policy, for positioning Norwegian

companies and for enhancing Norway's profile as a knowledge nation.

Research must result in learning and useful results

Expectations relating to the usefulness of research are rising both because the public sector is investing substantial resources in research activity, and because research results play an important role in the foundation for development. This implies a greater need not only for dialogue concerning the management of and priorities governing research, but also for extensive ethical deliberation in connection with research fields and methods.

The results of research must be better disseminated and the ability to utilise the results must be improved. There is also a need for greater understanding of the fact that even though research does not always lead to concrete results in the form of products and solutions, the research process itself will increase the expertise of all the participants. Good learning and innovation arenas will lay the foundation for broad-based utilisation of research results.

>> The Research Council's vision is to be in the vanguard of Norwegian research. Research and development expand the boundaries of what we know, understand and can achieve. It adds cultural resonance to society and establishes a viable basis for sustainable development, increased welfare and greater value creation.

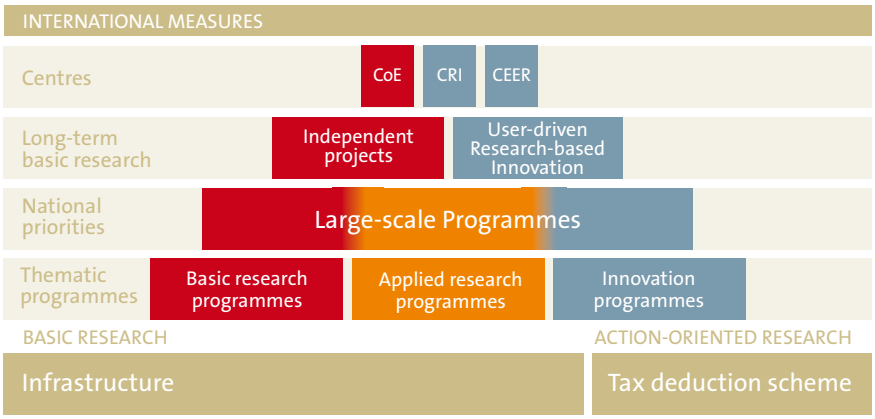
Capacity:
Work to enhance the quality and capacity of Norwegian research

Society is growing increasingly dependent on new knowledge in virtually all areas. The Research Council will work actively to enhance the capacity and quality of, and promote diversity in, Norwegian research. These comprise the principal challenges, along with ensuring a high level of investment in research infrastructure, achieving greater researcher recruitment and helping to foster a more knowledge-intensive trade and industrial sector.

A public initiative to stimulate *research-based innovation* is essential to achieving greater investment in research activity in trade and industry. Research activity must promote the development of a more knowledge-intensive trade and industrial sector that invests in its own research and development, boosts expertise within the companies and enhances the ability of companies to make use of research conducted by others. Key instruments here include the further streamlining of the SkatteFUNN tax deduction scheme, more funding to user-driven research, and increased focus on basic research in disciplines with major innovation potential. The objective of raising private R&D funding to two per cent of the GDP remains meaningful as a long-term goal. This goal will not be achieved through public incentives alone; trade and industry must also invest considerably more of their own resources in research than is the case today.

Long-term basic research must be strengthened if we are to deal with future challenges successfully. Basic research seeks to expand our understanding of humankind and the world we inhabit.

The Research Council has developed a set of cohesive instruments



Basic research is powered by curiosity and tends to be problem-oriented, providing new and original perspectives that enlarge the framework for activities. The pathway from basic to applied research is often a short one, as in the fields of health, energy and the environment, for example. The Research Council will work to achieve adequate overall funding for basic research across the entire spectrum of disciplines. These funds will be distributed in open national competitive arenas that supplement the thematic-oriented initiatives and that ensure good quality and a stable framework for the highest quality research groups. Basic research initiatives in selected disciplines and research fields must be designed for areas where there is a need for more concentrated, targeted activity.

The Research Council cultivates *high quality in research* by means of national competitive arenas where funding may be sought for basic, applied as well as user-driven research. The Council works actively to enhance quality in research through greater concentration of resources and more long-term funding to the most outstanding groups and researchers. The Centres of Excellence (CoE) and Centres for

Research-based Innovation (CRI) schemes are important instruments in this context. Concentrating resources helps to strengthen international visibility and facilitates the ability to compete in international funding arenas.

The concept of research quality utilised by the Research Council is designed to ensure that scientific merit is not assessed purely within a disciplinary perspective, but also encompasses aspects such as inter- and multidisciplinarity, thematic-oriented development of the relevant research field and the potential for application. Efforts to enhance quality must take place in the interface between research and the ways in which it may be applied.

Updated, modern *research infrastructure* is needed to be able to tackle future knowledge challenges as well as increase recruitment and achieve more effective utilisation of research resources. It is also necessary if Norwegian research groups are to be perceived as attractive partners for foreign researchers and trade and industry. Thus, research infrastructure must be given greater weight in the allocation of research funding. Infrastructure funding that is channelled through the Research Council will be targeted toward large-scale initiatives and cover necessary investments in specified areas of activity in accordance with an overall national strategy. Better coordination of activities within the Nordic countries and within Europe is called for.

The Research Council will ensure increased *recruitment* in selected priority areas by focusing its efforts on funding the best projects. Adequate recruitment will only be attained if a good framework for gender equality is in place, and if more women decide to become researchers. Researcher training and mobility must be improved, and students must be motivated to seek a research career early in their educations. Salary and working conditions as well as career trajectories must be upgraded to compete with similar positions in other occupations, and Norway must achieve a higher profile as an attractive host country for researchers from abroad. Greater activity must be generated under the scheme promoting doctoral degree education in cooperation with companies (Industrial Ph.D. scheme).

Norway's research capability must be strengthened by establishing *new research capacity*, and by attracting more international research collaboration. Research activity must be brought up to at least the same level as those countries with which a comparison is relevant. The amount of public investment is crucial in this context, and should be rapidly increased to one per cent of GDP. Given the long-term nature of research, it is essential that a predictable funding framework is established. The role of the Fund for Research and Innovation must be strengthened to safeguard long-term perspectives and promote the introduction of initiatives that extend across different sectors. The Research Council must be allocated a large enough share of the public growth to be able to give Norwegian research the muscle it needs to change.

The Research Council will work to:

- Promote wide-ranging research-based innovation through the use of open arenas for user-driven research and at the same time seek to focus resources on the best research and innovation communities.
- Strengthen long-term basic research activity through the use of thematically delimited and independent competitive arenas, and at the same time seek to focus resources on the best research.
- Increase the proportion of the Research Council's budget that is set aside for research infrastructure.
- Enhance the quality and capacity of Norwegian research by creating a better framework for internationalisation.
- Promote increased recruitment, especially within MST subjects and the national thematic priority areas, and establish predictable career trajectories for younger researchers through measures such as increased funding for post-doctoral research fellowships.
- Increase the participation of women in research, especially in high-level positions, by following up the measures set out in the Research Council's *Policy for Gender Equality and Gender Perspectives in Research*.

The Research Council proposes that:

- A greater proportion of the public allocations to research is allotted to research infrastructure.
- Public allocations to research are increased to one per cent of GDP by 2012.
- A system for multi-year research allocations is put in place, that a greater proportion of the allocations to research are financed through the Fund for Research and Innovation and that the Research Council's share of the public growth is maintained.

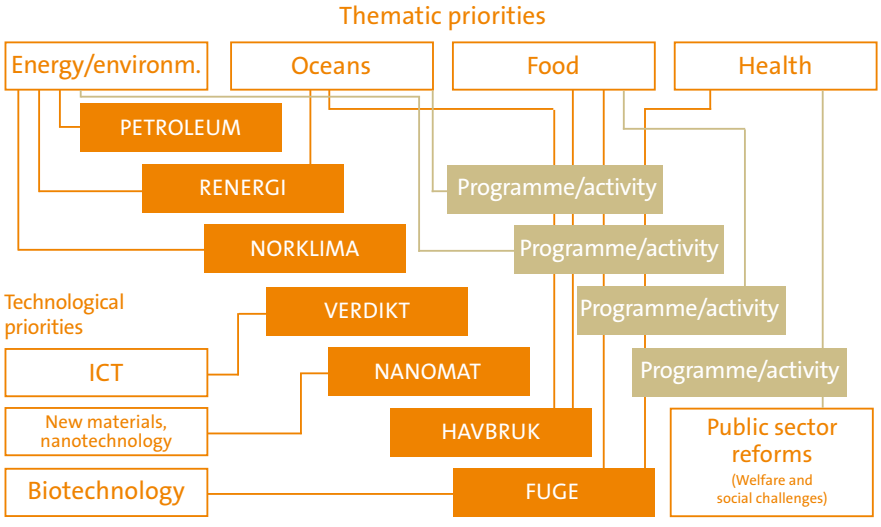
Thematic priorities:
Strengthening research in areas of particular importance for research, trade and industry

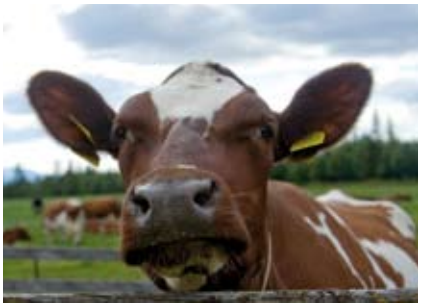
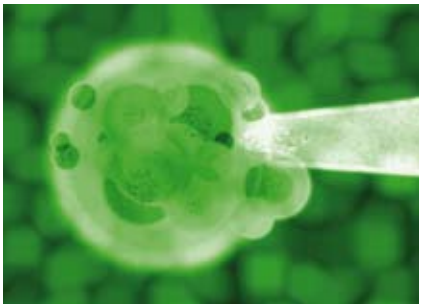
Research is becoming a strategic instrument for solving the challenges of tomorrow. The Research Council plays a central role in ensuring better, more coordinated efforts in the designated national priority areas. The priorities set out in government white paper on research establish the key social and industrial challenges that are to be dealt with through research.

The Government has designated the following as thematic priority areas for Norwegian research: *Energy and the environment, Food, Oceans, Health and Welfare,* as well as the technology areas *ICT, Biotechnology* and *New Materials*. These are areas in which Norway has natural advantages or has acquired special knowledge and they are also in keeping with recognised international priorities. They also encompass industrial areas that would benefit greatly from increased research activity. Efforts in all these thematic areas must be fortified, especially with regard to those segments that contribute to greater understanding and resolution of global challenges and climate-related issues. Larger-scale, more closely integrated projects *organised as centres*, that emphasise social relevance as well as quality, must be developed in order to address emerging challenges to society. Such instruments must be selected in cooperation with the various participants in the research system. The thematic priority areas must be expanded through adequate investment in basic research and research for innovation as well as through internationalisation. Gender perspectives must be integrated closely into all of the different areas.

The cultural prerequisites underlying social governance, individualisation, consumption patterns, innovation, technological advancement and international cooperation are significant. A better understanding is needed of how these lay the foundation for developments in different societal spheres. Better and more coordinated humanities and social science research on the *cultural prerequisites underlying social development* will thus be needed to supplement the more instrument-oriented thematic priority areas in Norwegian research.

National priorities in the Government report "Commitment to Research"



The Government has designated thematic priority areas for Norwegian research in which Norway has natural advantages or special knowledge. These areas also reflect international priorities.

The Government has designated thematic priority areas for Norwegian research in which Norway has natural advantages or special knowledge. These areas also reflect international priorities. Research as an industrial policy instrument is essential for enhancing the competitiveness of Norwegian trade and industry. This applies in particular within the petroleum, renewable energy and environmental technology spheres, as well as to the service industries. Activities that can address the research needs of individual ministries or organisations are also important in order to develop knowledge-based constructs within which policies may be framed and the public sector administered. The development of the public sector through research and innovation is necessary to create an efficient, adaptable government administration and service production sector. Recommendations regarding specific areas of activity must be drawn up in a dialogue between the stakeholders and will be put forth in the annual budget proposals.

The Research Council will work to:

- Strengthen focus on the national thematic priority areas and ensure that more of the overall budget is allotted to these.
- Enhance research that generates greater understanding of and solutions for global challenges and climate-related problems.
- Fund the establishment of centres to promote more closely integrated activities within the thematic and technological priority areas.
- Expand research on *the cultural prerequisites underlying social development*.
- Develop and enhance activities in selected service, technology and industry-related fields that will be significant to future industrial competitiveness and value creation.

The Research Council proposes that:

- *The cultural prerequisites underlying social development* be designated as a new national thematic priority area.

Structure:
Promote constructive cooperation, distribution of responsibility and structures in the research system

The research system is undergoing major change. The changing distribution of tasks and administration of the research sector is opening up the former boundaries between universities, university colleges, independent research institutes, trade and industry and the international arena. Research is becoming increasingly internationalised. The challenge is to create a research system that functions smoothly, where everyone competes on an equal footing, with sufficient concentration of resources, and a constructive distribution of tasks and specialisation. As the agency that administers 1/3 of the public funding to research, the Research Council has a pivotal strategic role to play in the refinement of the research system.

The Research Council must give consideration to the impact of the funding it distributes on the structure and efficiency of the research system. The Council is charged with developing effective funding instruments. The research institutions must be responsible within their individual frameworks for ensuring that they are capable of managing their own resources and carrying out research in the areas in which they excel. Strategic cooperation between the Research Council and the institutions must be expanded, particularly with a view to achieving satisfactory distribution of national responsibilities.

The Research Council channels nearly 30 % of public funding of Norwegian R&D

The primary method used to achieve a dynamic structure and distribution of tasks is open competition for funding based on merit and relevance. A major portion of the Research Council's funding will still be distributed via open, *institution-neutral competitive arenas*. This makes it possible to strengthen basic research, applied research and innovation where they are best. For these arenas to function effectively, the Research Council must ensure that members of the research system compete for funding on an equal footing, that there is sufficient basic funding from the state, and that an incentive structure compatible with the various types of institutions is in place.

In some cases it is desirable to target funding toward creating an *area of concentration and specialisation* that is warranted in a national and international

perspective. The open funding instruments must therefore be supplemented with more focused initiatives that can channel resources to selected research communities. The centre and programme schemes, in conjunction with an increase in the size of individual project allocations, are designed to achieve the necessary concentration and international profile. The framework conditions for research institutes and universities/university colleges must encourage constructive cooperation between the institutions. Increased investment in research in trade and industry must take place in consultation with the funding agencies in the innovation system and the regional research funds.

One area where this kind of targeted initiative is appropriate is the use of research to promote industrial development adapted to the potential of the individual regions. Targeted initiatives are also relevant for certain segments of the independent research institute sector, as well as to achieve better utilisation of R&D resources in the university college sector. Funding instruments must be designed to support the institutions' own strategies in a regional, national and international context, and to encourage the development of dynamic groupings of communities/institutes/regions/industrial clusters around designated subject areas, thematic areas and priority areas.

The Research Council is responsible for the *basic funding* to the research institutes and for the designation of an overall institute policy. The institute sector is an important knowledge partner for trade and industry, for the public sector and for special interests organisations. Framework conditions for some parts of this sector must be improved. A new, cohesive scheme for basic funding must provide for more equitable conditions, improved international competitiveness, better long-term development of expertise, and a better defined focus on commissioned projects and the quality of applied research. Time-limited initiatives directed toward the institute sector may help the research institutes become more proficient participants in selected areas of Norwegian research.

A better framework for increased *international research collaboration* at the programme, project and institutional levels must be introduced. The EU Framework Programmes must be used to reinforce national activities, and the Research Council must participate actively in pan-European programme and technology initiatives. The potential of the Nordic research community must be more fully exploited, and bilateral cooperation vis-à-vis specified countries and regions must be bolstered, for example through joint funding announcements and programmes. Activities in Norway's own priority areas must be implemented with a greater awareness of the potential for collaboration and task-sharing internationally. Norway's role as a global research partner must be further developed and Norway's reputation as a host country for foreign researchers and a profitable region for foreign investment in research in certain areas must be enhanced.

The Research Council will work to:

- Employ institution-neutral instruments to promote quality and relevance through open competition, and work to ensure that members of the research system compete on an equal footing.
- Encourage social and industrial development adapted to the needs of the individual regions, in cooperation with the regional research funds.
- Encourage better utilisation of R&D resources in the university college sector.
- Improve framework conditions for the independent research institute sector and strengthen the role of these institutions in designated areas.
- Further develop the framework for increased international research collaboration and strengthen international research-policy cooperation.
- Promote Norway as a global research partner by enhancing national research that is relevant in the context of global challenges and by cooperating to expand research capacity in developing countries.

The Research Council proposes that:

- The basic funding from the state and the incentive structure of the research system must be maintained at the level needed to strengthen the various types of institutions, to generate a critical mass, to counteract fragmentation, and to lay the foundation for constructive cooperation and competition nationally and internationally.

Learning:
Help to translate research results into action

Research results that provide learning to all segments of society are crucial in a knowledge-based society. The Research Council is responsible for ensuring that research reflects ethical norms, and provides greater insight, more opportunities and new solutions for research, trade and industry and society at large.

Publicly-financed research must generate results that anchor Norway as a cultural nation, expand the global knowledge pool and can be widely applied in industrial and societal contexts. To achieve this, research must yield results that can benefit many, there must be open access to the research results, and research activities and methods must be assessed in relation to ethical concerns. Research policy priorities must be designated in a dialogue with relevant users and interest groups so that the legitimacy of and confidence in research is strengthened even as its ethical dilemmas are exposed.

Research results must provide improved learning for, and better meet the needs of, users in government administration and industry than is the case today. This may be achieved by including key stakeholders in research planning activity, and by designing good learning arenas where users and research communities can work together closely to solve problems and translate results into action.

Research is characterised by uncertainty, risk and actors with divergent interests. As the stream of new research results increases, it becomes necessary to synthesise knowledge in certain areas, especially when it comes to areas of importance to society. The Research Council will assume a clearer responsibility both for disseminating the best knowledge in areas where research has major implications for the designation of policy, and for ensuring that critical research is heard.

Public-oriented dissemination activities must be enhanced to ensure that research results lead to learning and insight. Dissemination must also facilitate the public's ability to take part in the ongoing debate on research, and provide greater understanding of the importance of research to society.

Companies and public research institutions must assume greater responsibility for ensuring that research results are utilised with a view to commercialisation and industrial

development. This will require a suitable framework for commercialisation and clearly defined principles for the administration of intellectual property rights. Attention must also be directed toward the impact of the research process on competence, learning ability and the potential for research and innovation collaboration. Greater efforts must be made to establish joint learning arenas to enable companies, research institutes and the higher education sector to exploit the potential for innovation and commercialisation more fully, and to shorten the path from innovation back to research.

The knowledge base for research and innovation policy must be further developed to generate better targeted instruments and thematic priority areas, and to strengthen the Research Council in its advisory capacity. Research results must be assessed in discipline-based, programme and institutional evaluations. An ongoing, comparative and systematic analysis of Norwegian research and research policy instruments must be devised to facilitate optimal utilisation of research results.

The Research Council will work to:

- Establish arenas that disseminate the best research in areas of society of particular importance to industry and the government administration.
- Lay down clearly-defined principles for the administration of intellectual property rights to increase the potential for commercialisation.
- Increase dissemination activities and design joint learning arenas for companies, research institutes, the higher education sector and the government administration.
- Devise an ongoing, comparative and systematic analysis of Norwegian research and research policy instruments.
- Expand the knowledge base for research and innovation policy.

Organisation:
The Research Council – a competent and strategic organisation

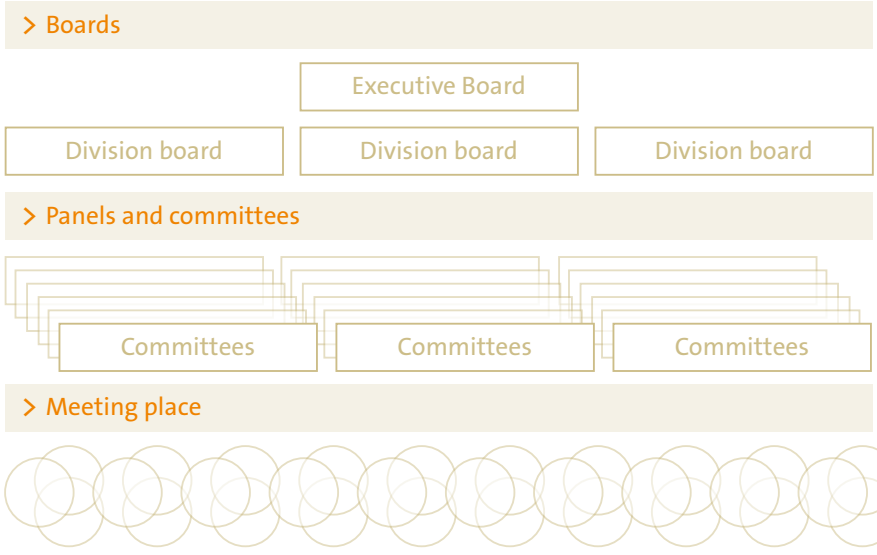
The Research Council comprises an administrative body with broad-based scientific competence. In addition, the organisation has a comprehensive, three-tiered system of boards with representation from research, trade and industry and society at large. The organisation is charged with formulating research-policy input for political decision-makers, implementing effective and targeted distribution of research funds, and creating meeting places that actively promote dialogue between research and society. The Research Council serves as an agent of change in Norwegian research, and seeks to be a leading player in strategic research planning.

The Research Council is to exercise its duties vis-à-vis the ministries, special interests organisations, researchers and users autonomously and in a manner that inspires confidence. The Council's working methods shall be characterised by cooperation, clarity, innovation and professionalism. A high level of expertise, a sound knowledge base and effective procedures form the basis for a cohesive strategic approach and a user-oriented administration. All important decisions shall be taken through transparent, legitimate processes.

The Research Council will work to:

- Ensure greater openness and dialogue on research-policy input and priorities.
- Further develop the cooperation between the Research Council boards and the administration.
- Ensure that representatives from research, industry and society at large are adequately represented in the governing bodies.
- Enhance expertise and strengthen the knowledge base for strategic research planning activities.
- Continue to develop user-oriented administrative and funding management procedures.

Extensive external participation in Council activities



Key figures for Norwegian research (2007)

In 2007, R&D expenditures totalled NOK 37.4 billion:
- NOK 17.5 billion in the industrial sector
- NOK 8.3 billion in the independent research institute sector
- NOK 11.7 billion in the higher education sector

R&D operating expenditures in the higher education and institute sectors combined totalled NOK 18.5 billion:
- Basic research NOK 5.9 billion
- Applied research NOK 9.4 billion
- Experimental development NOK 3.2 billion

Total R&D full-time equivalents was 34 000, distributed as follows:
- Industrial sector 15 000 R&D FTEs
- Institute sector 7 800 R&D FTEs
- Higher education sector 11 000 R&D FTEs

R&D activity comprised 1.65 per cent of GDP:
- Publicly financed R&D 0.73 per cent
- R&D funded by industry 0.92 per cent

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