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Preface

The *Committee for Mainstreaming – Women in Science* is now submitting its unanimous final report for 2004-2006. This is done in the knowledge that the Committee has contributed to increasing the focus on gender equality in the research arena. The Ministry of Education and Research has played an important role: it appointed the Committee and it has been represented by an observer, thus providing the necessary legitimacy in our dealings with institutions and players in the research environment. The Ministry has expressed clear expectations of the result, and has listened to the Committee's advice. In addition, the meetings with various institutions and other players in the research arena have been interesting and constructive. The report now being submitted is to be regarded as a political document in the sense that the Committee has developed specific proposals – the implementation of which now rests with the political environment. The focus is not on what women can do themselves: the measures suggested are first and foremost geared towards structural aspects. Several reports have been written internationally that analyse and address the relationship between the current research policy agenda and the opportunity for improving the integration of women into science and research. However, the challenge is to convert such analysis into political action. The Committee sincerely hopes that this report represents a step in this direction.

Gender equilibrium in the academic world is about fairness. It also concerns achieving national research policy goals. We cannot afford to lose so many talented individuals, and we are totally dependent on recruiting and retaining women. Combined with good access to qualified women, the approaching generation shift provides us with a golden opportunity to attain gender balance. Political commitment and recognition of the problem are necessary, but do not in themselves guarantee success. The challenge in the future will be to convert recognition into the ability to take action.

This English report is an abridged and reworked version of the original Norwegian document.

Trondheim, March 2007

Kari Melby
Chairperson

Linda M. Rustad
Mari S. Rigstad

1 Committee for Mainstreaming – Women in Science¹

1.1 The background and mandate of the Committee

In 1999 the Research Council of Norway was commissioned by the Ministry of Education and Research to examine the position of women in science and to assess measures to promote gender equality. One of the study's proposals was to set up a special committee to address the work in this area. Accordingly, the Ministry set up the *Committee for Mainstreaming – Women in Science* in January 2004. The Committee's work was to extend over a three-year period. This was regarded as an interesting new initiative – not least because of the EFTA Court's ruling that it was no longer permitted to earmark academic posts for the underrepresented gender².

The Committee was given the following mandate:

“The Committee will support and give recommendations about measures that contribute to mainstreaming of gender equality in the institutions of the university and college sector, and thus promote gender equality. The Committee will also contribute to increasing the general knowledge of issues tied to gender imbalance in the academic world. Both individuals and institutions in the university and college sector can apply for funding for various measures within mainstreaming of gender equality. The Committee may also independently initiate measures and evaluate the effect of these. As the gender equality field requires renewal and new input, the Committee will take on an international focus.”

The Board of the Norwegian Association of Higher Education Institutions was assigned the strategic and organisational responsibility for the Committee, including the administration of the Committee's secretariat. The Committee's funding (amounting to NOK 3 million per year for a period of three years) was provided equally by the Ministry and the Research Council of Norway.

1.2 The appointment and composition of the Committee

The Ministry of Education and Research invited the following organisations to submit proposals for members of both genders:

The Norwegian Association of Higher Education Institutions (three members, one of whom was to chair the Committee), The Research Council of Norway (one member), KILDEN – Norwegian Information and Documentation Centre for Gender Research (one member).

On the basis of proposals received the Ministry appointed the Committee, which has consisted of the following persons:

Professor Kari Melby, Norwegian University of Science and Technology (Chair)
Professor Rune Nilsen, University of Bergen

¹ This includes all the sciences, i.e. natural sciences, social sciences and the humanities.

² In January 2003 the EFTA Court decided that the Norwegian arrangement that allowed academic posts at the University of Oslo to be earmarked for women only was contrary to Article 7 and Article 70 of the EEA agreement's *Equal Treatment Directive (76/207/EEC)*, which has been incorporated into Norwegian law by virtue of the EEA agreement.

Professor Siri Pettersen Strandenes, Norwegian School of Economics and Business Administration
Nina Kristiansen, Director, KILDEN – Norwegian Information and Documentation Centre for Gender Research
Arnfinn J. Andersen, Advisor, Research Council of Norway

In 2005 the Committee was expanded to include a member from the Norwegian students' union, Jon Ivar Thompson Eikeland.

The Ministry of Education and Research has had one observer on the Committee, and Lise Christensen, Senior Advisor, has served as an observer from the Research Council of Norway. Senior Advisor Mari S. Rigstad, Norwegian Association of Higher Education Institutions, has been the Committee's secretary in the entire period. From 16 January 2006 Linda Marie Rustad has been employed as Senior Advisor in the Committee's secretariat.

1.3 The activities of the Committee

On its start-up the Committee compiled a strategy in order to give its work legitimacy. On the basis of this strategy, activities were initiated that could support the work performed by universities and colleges to promote gender equality. It was regarded as important to contribute to increasing both knowledge and awareness of the lack of gender balance in science and research. The Committee implemented a number of activities, but it also had financial resources at its disposal that enabled it to establish research fellowships, participate in conferences, arrange seminars and conferences, and provide backing for universities and colleges that wanted to start research projects etc. The Committee also viewed it as important to find out how the lack of gender equality in the academic world is discussed internationally, and to inform other countries about the Norwegian initiative.

The Committee has designed a website that provides updated information on gender equality measures at universities and colleges etc.: *Resource bank for gender mainstreaming* <http://kvinneriforskning.no/english/>. This represents a tool for gender equality in the academic sector and provides an overview of action plans and the use of policy instruments, as well as statistics, EU information, media items, relevant legislation and agreements, literature etc., both in Norway and internationally.

The Committee has financed and taken the initiative to produce the following studies and research works:

- a study of the quantitative and to some extent the qualitative prerequisites for achieving the goal of gender equality in the university and college sector: *Likestillingsscenarier i høyere utdanning (Gender equality scenarios in the higher education sector)*, NIFU STEP (Studies in Innovation, Research and Education) working paper 44/2006.
- a study on how the government's system for financing universities and colleges can be put to use to promote equality within the various institutions: *Likestilling i finansieringssystemet for universiteter og høyskoler (Gender equality in the financing system for universities and colleges)*, Statskonsult report 2006:17.

The Committee has also:

- advertised Master's degree scholarships for students who want to address themes associated with the goal of improving gender balance in research.

- part-financed a two-year research project at the Centre for Technology, Innovation and Culture at the University of Oslo on recruiting women to natural sciences and technology.
- produced a series of consultative statements.
- provided input to the media and to various government bodies.
- taken the initiative to set up a network for those in the sector who are working on gender equality issues.
- arranged various seminars and conferences introduced by national and international personages and with the participation of the top management in the higher education sector and political leaders in the Ministry of Education and Research.

The Committee has had contact with the following relevant bodies in Norway:

- the university and college sector
- the Ministry of Education and Research, including several meetings with political leaders and other officials
- the Research Council of Norway
- the network for those working on gender equality issues at the universities
- the former equal opportunities commissioner
- the Norwegian students' union and the Association of Students in Norway

The Committee has also given priority to maintaining good contact with the EU's and EFTA's institutions:

In autumn 2005 the Committee undertook a study trip to Brussels and held meetings with the European Commission's DG Research, the Norwegian delegation in the EU, and the EFTA secretariat. The visit – and particularly the discussions with Johannes Klumpers, then Head of the Women and Science Unit in DG Research – helped to clarify the themes that were important for the Committee to concentrate on in their future work. These included:

- a) The EFTA ruling concerning earmarking posts*
- b) The Research Council of Norway and the excellence schemes*
- c) Researcher mobility and follow-up of the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers*
- d) Longitudinal studies of academic careers*
- e) The post-doctoral situation*
- f) Tenure-track posts*
- g) Statistics*
- h) Recruitment*
- i) Target figures*

The Committee has subsequently attended several meetings within the EU system as well as EU-initiated conferences and EU programmes that have a clear relationship to its mandate. The contact with the European Commission has been pursued – for example through discussions on the consequences that the EFTA ruling on earmarking academic posts for women will have for the use of positive specific measures for the underrepresented gender in general. The question can be raised as to whether Norway may have interpreted the ruling in a way that has led to stricter practice in Norway with regard to such measures than that which is the case in the EU member states. The Committee has asked the Ministry of Education and Research to enter into a dialogue with the European Commission to clarify this issue further.

2 The Norwegian university and college sector and European processes

Norway has approximately 200 000 students attending six universities and 50 or so colleges, half of which are private. The state institutions are mainly financed from the central government budget, and the private institutions also receive some government support. The state universities and colleges are not separate legal entities, but they nonetheless have a relatively independent status. The Ministry of Education and Research's management of the institutions largely takes place through budget allocations, which set requirements for goal achievement and reporting for the various points in the so-called *letter of allocation*.

Universities and colleges are allocated a certain amount of research funds directly from the Ministry of Education and Research. However, government allocations to research are to a large extent distributed through the Research Council of Norway³. Resources distributed through this Council are generally tied to large-scale programmes.

The Quality Reform in higher education

The higher education sector in Norway has recently undergone a comprehensive reform called the *Quality Reform*. The reform was initiated in autumn 2003 and to a large extent it constitutes a follow-up of the Bologna process⁴. Important components of the reform are the introduction of a new degree structure with Bachelor/Master and PhD degrees and of the Diploma Supplement⁵, as well as the transition to credits in line with the ECTS model (European Credit Transfer System)⁶.

The Quality Knowledge Reform has also entailed the introduction of a new and partly result-based system for financing the higher education institutions: the annual budget consists of a basic component (approx. 60%), a teaching component (approx. 25%) and a research component (approx. 15%). The two latter components in the financing system are result-based in the sense that extra budget funds are awarded for achieved results in the form of the number of qualified graduates and the number of doctorates, publications and externally-financed projects. The state colleges have a higher basic component, while the universities have a higher research component.

³ Norway only has the one research council.

⁴ The Bologna process has resulted from the Bologna Declaration that was signed by 29 European countries in Bologna in 1999. The process aims to contribute to making higher education in Europe more compatible and comparable so that collaboration across country borders can be simpler. The Bologna process is important when viewed in the light of the Lisbon Strategy – adopted by the EU member states in 2000 with the goal of making Europe the most competitive economy by the year 2010. However, the Bologna process is an independent process in which a total of 45 countries and a number of international organisations are participating.

⁵ The *Diploma Supplement* (DS) is a document that is attached to a certificate or diploma to facilitate the process of recognising qualifications across country borders. The DS has been developed through cooperation between the European Commission, the Council of Europe and UNESCO.

⁶ The ECTS makes it possible to compare and mutually recognise different systems for the content and outcome of courses of education in various countries. It represents an instrument within EU's ERASMUS programme (European Community Action Scheme for the Mobility of University Students). The programme is open to EU member states and to EFTA countries within the EEA.

3 Summary

Main arguments

To give its work legitimacy, at the start-up of its activities the Committee agreed that it would build its arguments for equality and greater gender equilibrium in the academic world on values and considerations such as

- Fairness
- Democracy and credibility
- National research objectives
- Research relevance
- Research quality
- Research leadership

Description of the situation

Studies that the Committee has conducted and statistics gathered from other sources show that the university and college sector in Norway is still largely characterised by the unequal distribution of scientific employees within both subject areas and position levels.

Improvements to the balance between the genders are proceeding very slowly at the highest position levels, and the development came to a halt from 2003 to 2005.

The age structure among the employees in this sector is moving in the direction of a higher average age. An increased need for new recruitment in the wake of this trend presents both the opportunities and challenges of having more women appointed to scientific positions.

The Committee's study of status and plans for equality at the institutions in the university and college sector shows that the promotion of gender equality is organised and prioritised in different ways. There are variations regarding how well the equality goals are rooted within the institution management. However, what is common to all the institutions is that consideration for equality is integrated to only a small degree in their strategic plans.

The institutions have implemented various gender equality measures, of which mentor programmes, start-up packages and qualification grants can be singled out as constructive initiatives. Variations in effect seem to some extent to be attributable to variations in the organisation of the equality efforts rather than purely to the shaping of the measures.

The Committee's research policy assessments

The Committee is of the opinion that the main challenge in the future will constitute achieving better gender equilibrium both within prioritised research areas and as an integral part of the new research systems.

The Committee has been concerned with identifying the connections between quality, democracy and equality in the academic world. It has reached the view that scientific quality and social relevance cannot be achieved without more women being integrated into research, and that discussions about research quality must to a greater extent be related to goals concerning increased equality and diversity.

The Committee’s recommendations to the Ministry of Education and Research and subordinate agencies

The Committee assumes that more powerful policy instruments must be put to use to achieve the gender equality goals within the university and college sector and that national authorities should take more responsibility rather than leaving the institutions to solve the problems alone.

The Committee recommends the Ministry of Education and Research:

- to place more emphasis on gender equality goals in its management of the various institutions.
- to utilise the financing system for universities and colleges to motivate the institutions to greater efforts – preferably through financial “rewards” for appointing women to higher position categories.
- to conduct an evaluation of the Quality Reform to investigate whether it has had consequences for the goals regarding greater equality in the university and college sector.
- to initiate a three-year national project for the development of academic leadership in a gender equality perspective.
- to maintain the existence of a national gender equality committee in the university and college sector.

The Committee also recommends that the Ministry of Education and Research opens a dialogue with the Research Council of Norway concerning:

- introducing gender budgeting within the Council’s funding schemes, programmes and other activities.
- initiating an interdisciplinary incentive programme for mainstreaming in research.

The Committee also recommends:

- that a special research programme on the theme of gender in academia be set up, financed from the budget of the Ministry of Education and Research and organised by the Research Council of Norway.
- that *the regulations relating to accreditation, evaluation and recognition in accordance with the Act relating to Universities and Colleges* be revised so that greater consideration can be given to equality issues.

4 Background for the Committee’s recommendations

Main arguments for equality

At the start of its work the Committee discussed arguments for equality and a better gender balance in the academic world. The following values and arguments form the basis of their activities:

Fairness

Equality is a question of fairness. Women and men must be given equal opportunities to participate in the research community.

Democracy and credibility

Research plays a major role as the foundation of policy development and government administration. Research contributes to more critical and open social debate, and research-based knowledge provides a better foundation for political decisions. To ensure well-functioning democracy, women must take part in research on an equal footing to men – not least within the mathematics and natural science subjects where knowledge and technology are produced that have substantial social consequences.

National research objectives

In order to attain national research objectives the country's total human capital must be put to use. Biased recruitment involves the loss of a significant source of talent.

Research relevance

Research of high quality and relevance is dependent on the research communities' ability to ask the "right" questions and to assess the various answers. This is best assured in an environment that accommodates different types of people with diverse experience and the ability to cooperate professionally. A better gender balance will result in research institutions reflecting the diversity of the population to a greater extent, which in turn will strengthen credibility.

Research quality

A greater recruitment of women to research will lead to an increase in knowledge resources, will contribute to quality in knowledge production, and will make the research sector more robust and competitive. Studies can indicate that research groups that have been composed heterogeneously are more vigorous and innovative than homogenous groups⁷.

Research leadership

Stricter requirements are being set for good research leadership. Academic leadership positions exert great influence on research and are important for quality development. Training for such posts must be provided for women on the same level as that for men.

4.1 Description of the situation

Development trends

During the past few decades considerable changes have taken place in gender composition within the academic world in Norway, but recent analyses show that with the current policy instruments it will still take many years before a gender balance among scientific employees can be expected⁸.

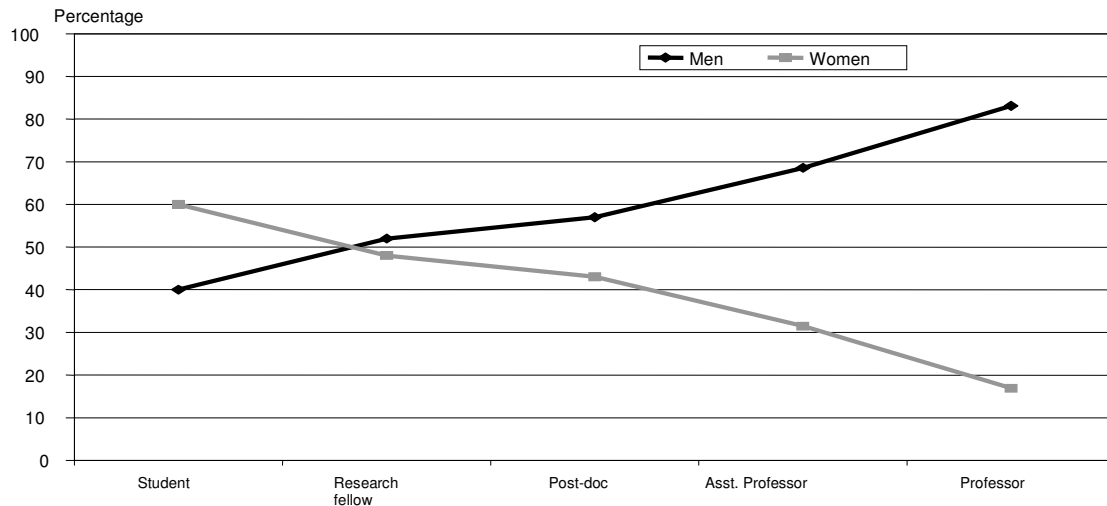
Statistics show that although in 2005 only 37% of permanent scientific employees in the university and college sector were women, the proportion of women had increased by an average of 5% in all position levels from 1997 to 2005. However there is still a considerable vertical and horizontal imbalance between the genders: the higher one goes in the academic hierarchy; the lower is the proportion of women. And there are big differences between the various subject areas.

⁷ See *The Scientist*, November 7, 2005 and *Science*, vol. 309, 2005.

⁸ NIFU STEP: *FoU-statistikk for 2005 (R&D statistics for 2005)*.

In 1999 women constituted 11.9% of professors in the university and college sector. In 2005 the proportion had risen to 17%. Figures from 2005 show that the proportion of women among professors was highest within the humanities (28%) and lowest in technology subjects (6%). The total proportion of women in associate professor posts increased from 28.4% in 1999 to 31% in 2005. In 2005 there were 3 771 women altogether in permanent scientific positions at universities and colleges in Norway, amounting to 37% of the total. The proportion of women was lowest among professors and highest among university and college lecturers where 57% were women in 2005.

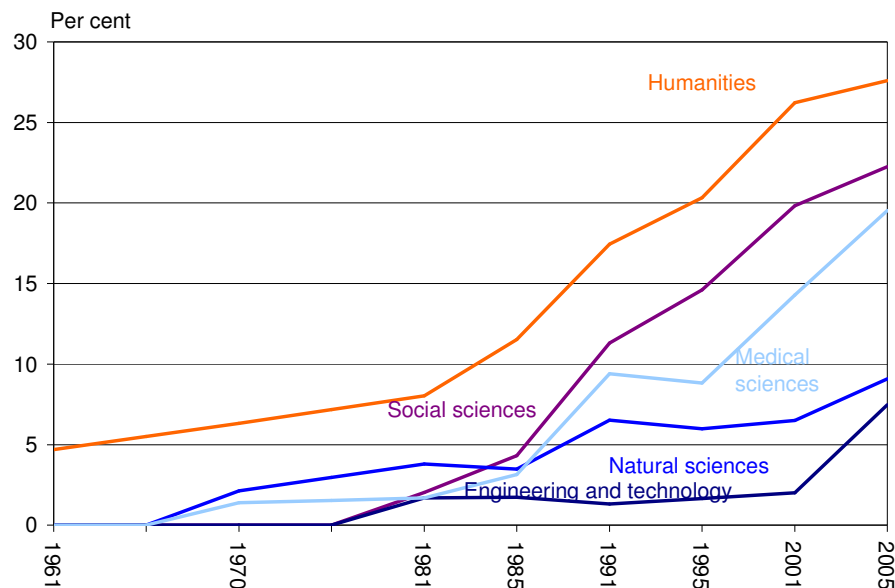
Figure 4.1.1 Proportion of women and men at various levels in the higher education sector in 2005⁹



There are big differences between universities and colleges, among universities, and between various faculties and disciplines with regard to the proportion of women. For example women constituted 57% of the permanent scientific staff within the subject area of medicine in 2005, while in the field of technology only 14% were women. There are also relatively large variations within each individual subject area: in the humanities the proportion of women is relatively high, whereas it is low within subjects such as philosophy and history (see Figure 4.1.2).

⁹ NIFU STEP: *Forskerpersonalregisteret 2005 (Research staff register 2005)*.

Figure 4.1.2 Proportion of women among professors in different subject areas in the higher education sector, 1961–2005¹⁰



Other statistics (from 1999/2000) show that Norway was ranked somewhere in the middle compared with other countries in Europe with regard to the proportion of women among scientific staff and the proportion of women among professors. While the proportion of women among professors in Norway was barely 12% in 1999, at almost the same time it was nearly 20% in both Portugal and Finland. Spain, France, Italy, Sweden and the United Kingdom were also ranked higher than Norway. More recent figures (2004) show that the proportion of women has increased among professors in all the countries mentioned¹¹. Finland and Portugal remain in the lead with 21.2% and 20.9% respectively, but the proportion of female professors has increased more in Norway than in the majority of EU countries during recent years.

Gender equality has almost been achieved in PhD and post-doctoral posts within several subject areas, but this does not necessarily involve steady development in the scientific career. One out of three research fellows does *not* take a PhD, and there are still significant differences between men and women in this area. While 67% of male research fellows took a doctor's degree in 1990–1994, the same applied to only 59% of the women¹². This can probably be explained by the large differences between the subject areas regarding the frequency of PhDs: within social studies and the humanities only one out of four had presented a doctoral thesis in the course of six years, and in healthcare subjects one out of three. On the other hand, among research fellows with an education in the natural sciences or with a technical education almost two out of three had presented a doctoral thesis within six years of their degree examination.

¹⁰ NIFU STEP: *Forskerpersonalregisteret 2005 (Research staff register 2005)*.

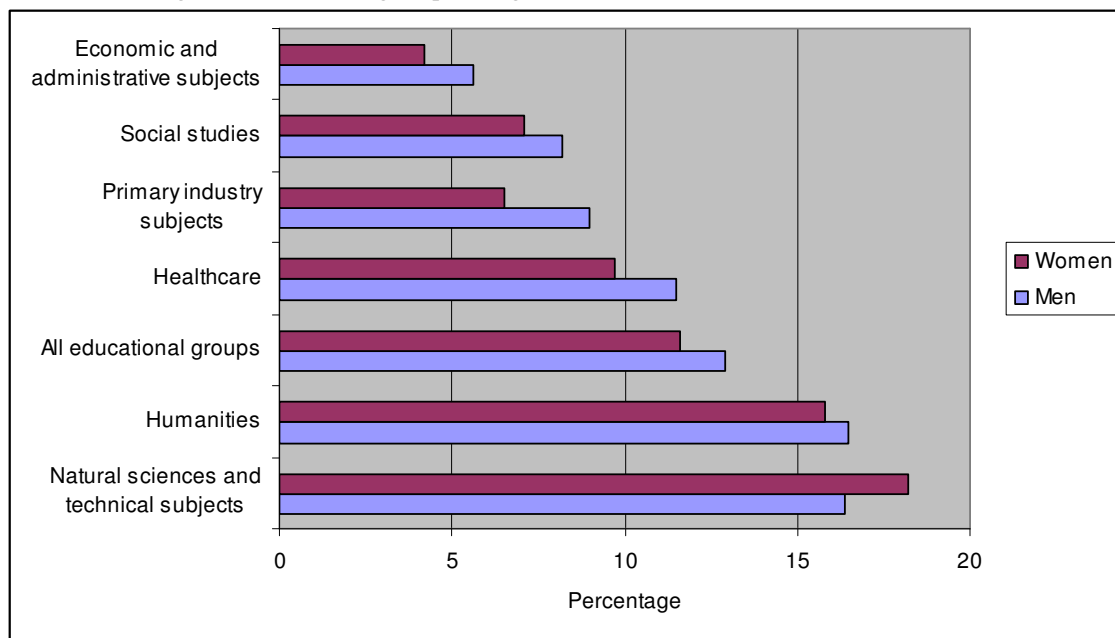
¹¹ EU Commission: *She Figures 2006; Women and Science – Statistics and Indicators*: http://ec.europa.eu/research/science-society/pdf/she_figures_2006_en.pdf

¹² Terje Bruen Olsen: *Noen er innom, få blir, enkelte når til topps. En statistisk undersøkelse av høytutdannedes karrierer ved forskningsinstitusjonene (Some come by, a few stay, others reach the top. A statistical study of the careers of those with higher education at research institutions)*, NIFU STEP working paper 10/2006.

There are minor variations between women and men concerning the length of time that passes between presenting a thesis and assuming permanent employment. The small difference that has been registered is in the favour of women, but it must be mentioned that women are on average older than men when they present their theses¹³.

Within technology and in the natural sciences there is a relative increase in women recruits compared with men, but these are subject areas where the proportion of women is still low. In these areas the difference between women and men is insignificant with regard to starting work on a doctorate, the percentage of those who complete these studies and the time it takes. While a far greater proportion of male graduates within the humanities (16% compared with 8% for women) went on to take a research fellowship post, in technology and the science subjects there is an equally large proportion of women as men who become fellows. Something of the same trend as that in the humanities can be seen in the social sciences. In other words: there is currently a greater chance of a female graduate becoming a research fellow within technology and the natural sciences than in subjects where women make up a larger proportion of the scientific staff¹⁴.

Figure 4.1.3 Proportion of graduates 1990–1994 who held a research fellowship post 1991–2003 according to educational group and gender¹⁵



¹³ Terje Bruen Olsen: *Tid fra doktorgrad til fast ansettelse (Time from doctorate to permanent employment)*, NIFU STEP working paper 9/2004.

¹⁴ Elisabeth Hovdhaugen, Svein Kyvik and Terje Bruen Olsen: *Kvinner og menn – like muligheter? Om kvinner og menns karriereveier i akademien (Women and men – equal opportunities? Career paths of women and men in academia)*, NIFU STEP work series 25/2004.

¹⁵ Terje Bruen Olsen, *Noen er innom, få blir, enkelte når til topps. En statistisk undersøkelse av høytutdannedes karriere ved forskningsinstitusjonene (Some come by, a few stay, others reach the top. A statistical study of the careers of those with higher education at research institutions)*, NIFU STEP working paper 10/2006.

In other words, gender equality challenges in the university and college sector vary from one subject area to another, and from level to level. This indicates that an assessment should be made as to whether it is appropriate to develop policy instruments that are adapted to the various subject areas. Within technology and the science subjects the challenges are greatest concerning both recruiting to the basic level of courses of study and ensuring that a larger proportion of women continue their academic career after completing their PhD. For the humanities and social sciences the recruitment of women to research fellowships is a major challenge.

Generation shift

Norway is faced with a comprehensive generation shift in scientific employees in the university and college sector. This is creating the need for new recruitment and offers the opportunity to improve the balance between the sexes among scientific personnel. However, measures to enable these opportunities to be exploited optimally must be implemented as soon as possible.

Figure 4.1.4 Permanent scientific/academic staff in the higher education sector according to age group and gender, 1997 and 2005¹⁶

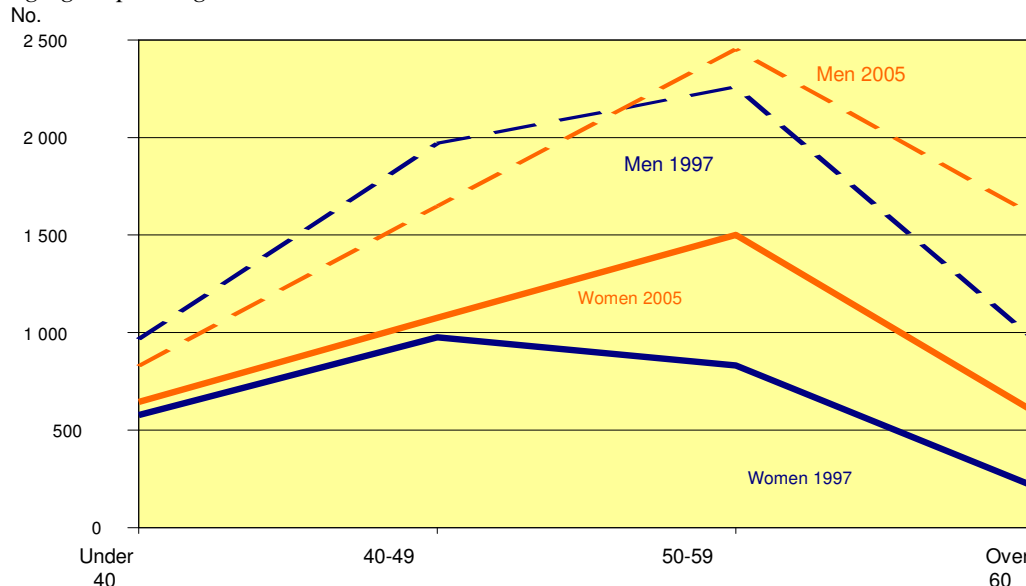


Figure 4.1.4 shows the challenges produced by the generation shift with regard to future recruitment. To utilise this situation in order to attain gender equality, it is important to find out how many women must be appointed in the years ahead to achieve a better balance between the genders in the various position groups. NIFU STEP has made such estimates on commission from the Committee.

The following tables show how many women must be appointed from and including 2008 to achieve a proportion of women in permanent scientific positions of 40% and 50% respectively in the years up to 2020. Both these measurements assume the annual appointment of an unrealistically high proportion of women to vacant positions. The tables also assume an annual stable growth in the number of positions of 2.7%. Table 4.1.5 shows the percentage of women who must be appointed to attain the proportions of 40% and 50% respectively among

¹⁶ NIFU STEP *Forskerpersonalregisteret* (Research staff register).

permanent scientific employees at universities, specialised universities and state colleges collectively. Table 4.1.6 shows the same figures for the universities and specialised universities alone.

Table 4.1.5 Growth estimate of the number of scientific/academic personnel at universities, specialised universities and state colleges 2008–2020. Total growth and increase in women¹⁷.

Year	Target figures for total staff	Replacement needs from 2005	Growth	Total no. of posts	Prop./women of target figures: 40%		Prop./women of target figures: 50%	
					No. of women	Percentage of posts	No. of women	Percentage of posts
2005	9 882							
2008	10 690	254	810	1 060	4 280	64	5 350	>100
2012	11 880	1 049	2 000	3 050	4 750	44	5 940	83
2016	13 190	2 534	3 310	5 840	5 280	40	6 600	63
2020	14 650	3 989	4 770	8 760	5 860	39	7 330	56

Growth assumption: 2.7 per cent per year. Estimated needs rounded off to the nearest 10.

Table 4.1.6 Growth estimate of the number of scientific/academic personnel at universities and specialised universities 2008–2020. Total growth and increase in women¹⁸.

Year	Target figures for total staff	Replacement needs from 2005	Growth	Total no. of posts	Prop./women of target figures: 40%		Prop./women of target figures: 50%	
					No. of women	Percentage of posts	No. of women	Percentage of posts
2005	5 331							
2008	5 770	208	440	650	2 310	>100	2 890	>100
2012	6 410	722	1 080	1 800	2 560	63	3 210	99
2016	7 120	1 507	1 790	3 300	2 850	48	3 560	70
2020	7 900	2 240	2 570	4 810	3 160	44	3 950	60

Growth assumption: 2.7 per cent per year. Estimated needs rounded off to the nearest 10.

Future prospects for equality are not identical for the various teaching institutions. When differences between the various subject areas are considered, NIFU STEP points out that within medicine and healthcare subjects and within the humanities and the social sciences – where the gender equality goal is closer to attainment – there is reasonably good access to qualified women. However, female recruits are relatively sparse in subject areas such as the natural sciences and technology where the gender equality goal is further from attainment.

The proportion of women among new candidates for doctorates has increased gradually during the past 25 years. In 2005 this proportion was 40%. The figures for the first six months of 2006 show a certain rise in the number of doctorates in total (more than that of the first six months of 2005, which was at the time a record year). Nonetheless, the proportion of women remained almost unchanged at 39% in the first half of 2006, and in fact the proportion has been more or less stable since 2002 (38–40%). It should be possible to expect a further increase in the percentage of women among candidates for doctorates since the proportion of women among students as a whole has been more than 50% during the past few years.

¹⁷ NIFU STEP: *Likestillingsscenarier i høyere utdanning (Gender equality scenarios in the higher education sector)*, working paper 44/06.

¹⁸ NIFU STEP: *Likestillingsscenarier i høyere utdanning (Gender equality scenarios in the higher education sector)*, working paper 44/06.

4.2 Gender equality at higher education institutions¹⁹

In 2004 the Committee initiated work on investigating the status and plans for gender equality in the university and college sector. The institutions were asked to provide the following information:

- An overview of the situation in the field of equality: status and plans
- An overview of how equality is integrated into the institutions' strategic programmes
- Information on how gender considerations are taken into account when making appointments to research fellowships and post-doctoral positions

The material received formed the basis of a report that was centred on the following criteria:

- Description of equality in strategic plans
- Action plans for equality – understanding the problem and designing measures
- The institutions' reporting to the Committee as of 2004/2005 – status and strategy

The report concluded that in spite of greater attention being paid to gender equality, the extent to which it is considered a leadership responsibility at the institutions varies. The institutions' understanding of the problem of gender also shows substantial differences. One strategic measure that several put to use to achieve equality is the establishment of target figures. However the report notes that these figures must be both ambitious and realistic if they are to function as intended.

Overall the survey of the institutions confirms that the university and college sector is characterised by a considerable gender imbalance. The lack of women in higher positions is striking²⁰: at several places the proportion of women in top positions is under 10%. The gender imbalance also extends to adjunct professor posts, which are largely filled through nominations. The proportion of women is in general even lower here than in ordinary professor posts, the proportion in this group at the universities being 8.9% in 2006²¹. In its meetings with the institutions' leaders, the Committee recommended that the institutions make use of nominations to adjunct professor posts to recruit women.

In brief, the survey shows that to be successful gender equality work at the institutions must be rooted with the leaders. However, during the Committee's three-year term it has been observed that attitudes are shifting and that the willingness to change is increasing – including among the institutions' leaders. This can be seen from both the target figures and the budgets, as well as in several initiatives and specific measures.

Measures for gender equality

Other studies show that women advance more slowly in the academic system than men. This may be connected to various underlying conditions such as the fact that women teach more than men, sit on more panels and committees, and participate in fewer national and

¹⁹ In Norway, both state and private institutions are under an obligation with regard to gender equality, an obligation that is laid down in the Gender Equality Act. In addition the higher education sector is under the obligation to report on the situation regarding gender equality to the Ministry of Education and Research (see 6.1.1).

²⁰ Top positions are considered as professors, assistant professors and senior lecturers. The term "senior lecturer" is primarily used at state colleges. Statistics show that 35.2% of senior lecturers at colleges are women (Database for higher education, 2006).

²¹ Database for higher education (DBH): http://dbh.nsd.uib.no/dbhvev/ansatte/tilsatte_rapport.cfm.

international research networks. Women also receive somewhat less research funding, particularly from external sources²². In addition other aspects can have an impact, such as the fact that mothers of small children can have greater problems attaining continuity in their research work than the fathers of small children. Various gender equality measures at the institutions are directed towards strengthening women's progression in research careers. A study has been conducted²³ on Norwegian academic environments where the proportion of women among the permanent scientific staff is high and on the recruitment policies of these environments. The following measures were regarded as having a particularly good effect on the integration of women:

- Short-term working grants to write applications for admission to a doctorate programme or for a post-doctoral fellowship
- Post-doctoral fellowships being earmarked for women
- Encouraging young women researchers to gain qualifications through scientific publications and introductions to academic networks and to apply for research secondment to relevant institutions abroad
- Requesting women to apply for posts
- Requiring all evaluation committees to have women members
- Prioritising research themes where there are female recruits

The following can be mentioned among other measures that have also had a good effect on qualifying and recruiting women:

Mentor programmes

Different institutions have established various forms of mentor programmes. For example the University of Tromsø runs a programme for women in assistant professor positions with the intention of qualifying them for professor posts. The scheme includes funds to enable the participants to buy themselves out of teaching duties for six months, distributed throughout the two-year mentor programme period. Feedback from the institutions that have introduced mentor programmes shows that the programmes can have a network-building effect, that they increase self-confidence and career awareness, and that they promote progression in personal work.

“Start-up packages”

In recent years the Norwegian University of Science and Technology (NTNU) has allocated funds to “start-up packages” for women in permanent scientific positions in subject areas where the proportion of women was under 10% – areas such as mathematics, the natural sciences and technology. In the period 2004–2006 NTNU has spent NOK 3.8 million on such programmes. Start-up packages represent a goal-oriented measure that is intended to make it easier for newly-appointed women to establish themselves as researchers. Experience shows that, unlike men, on appointment women in general do not negotiate good research conditions. The start-up packages are attempting to remedy this by making it possible for the use of the funds to include running the project, equipment and salary for research assistance.

²² Elisabeth Hovdhaugen, Svein Kyvik, Terje Bruen Olsen: *Kvinner og menn – like muligheter? (Women and men – equal opportunities?)*, NIFU STEP work series 25/2004.

²³ Vera Schwach, Ellen Brandt, Agnete Vabø: *I spennet mellom kvalitet og likestilling (Between quality and requirements for gender equality)*, NIFU STEP working paper 8/2004.

Qualification grants

Many institutions award *qualification grants*. Some award these grants only to the underrepresented gender, while others practise a moderate gender quota system for allocation. Qualification grants are often understood as buying time to complete research – for example to become qualified for a professor position. The use of such grants is regarded as a successful measure. Feedback from women who have received the grants indicates that the grant allows them to concentrate on research and gives them the opportunity to complete research work and to enter into closer collaboration with other researchers. At NTNU 46% of the women who have been awarded a qualification grant have become professors during the past few years.

5 The Committee's assessments of research policy

The Committee has noticed a gradual change in focus areas in gender equality work at institutions – from measures linked to organisational, administrative and/or personnel policy areas to more research-related aspects. The development of mentor programmes, qualification grants and start-up packages are all examples of this, even though these measures can also be classified as personnel policy in the sense that they are intended to affect women's career paths. The Committee is of the view that this type of development is both positive and necessary, since the main challenges in the future will primarily concern achieving better gender equilibrium within prioritised research areas and through new ways of organising research. However, a prerequisite for the success of such measures is that the institutions' leaders and others in research leadership have the competence that is required to reach such a target.

5.1 Equality – quality and democracy in research

There is general agreement on the fact that research must be of high quality and of benefit to society in the short or long term, and must be understood as a motive force for social development. The underlying intention of the increased focus on quality is to secure the most talented individuals for research and to develop outstanding researchers. National objectives concerning increased growth in the sector corresponding to 3% of the GNP will result in a greater demand for researchers and will thus increase recruitment needs. At the same time the sector is faced with considerable demographic challenges. This indicates that it is absolutely essential to improve the integration of women into research activities.

Quality is a concept that has not so far been clearly defined. This means that taking quality into account can be understood in different ways. If the quality concept is not carefully and sufficiently considered, the question is whether it will be limited in ways that may produce the reverse of the desired effect. The danger lies in operating with a quality concept that is too restricted. For instance we may ask whether quality includes the principle of democracy and fairness.

Some studies can indicate that quality can be taken into account in ways that exclude the selection of women. In their analysis of post-doctoral applications to the Swedish research council in the field of medicine, Wennerås and Wold (1997) show that neither "quality" nor "research expertise" are gender-neutral dimensions. Male applicants were given greater backing for their projects than female applicants. In addition the authors document that applicants whom a committee member knew or had heard of had a higher probability of being

supported in the selection process. The study concludes that even though quality was one of the criteria for evaluating the applications, both gender and personal acquaintance played a major role. This provides a basis for discussing the use of peer reviews as a guarantee for the equal assessment of applicants²⁴.

Included in the work involved in introducing the Quality Reform and implementing the white paper *Commitment to Research* are the efforts to set measurable criteria for quality. The preliminary result of this work is that the number of publications and quotations are to be used as indicators for research quality, ranked according to the channels through which they are disseminated. Whether such quantitative criteria constitute a good indicator of quality in research is discussed in the article *Measurement of Scientific Performance and Gender Bias* (2004)²⁵ by Irwin Feller. Feller is of the opinion that greater focus should be given to the delimitations involved in placing unilateral emphasis on publications, and he advocates extending the repertoire of criteria for assessing research. He also points out the necessity of investigating whether the indicators have different impacts for men and women. Even though the indicators can in themselves be gender neutral, the system in which they are applied can be such that they acquire an unintentional gender-discriminating effect. The criteria must therefore be viewed together with the context in which they are used.

Feller's discussion highlights the question of whether there are aspects of research that are decisive for quality other than those that are currently given priority. Is it really the case that the research biography that academia demands today – which includes great emphasis on the number of publications in a defined range of publishing channels – is best suited to identifying those with the best qualifications? Several parties have pointed out that if we continue to measure research quality in this way it may lead to the continuation of homosocial recruitment – in other words recruiting those who are like oneself. This in turn will lead to a standardisation of research that will not safeguard the creativity and the diversity on which research depends for its further development²⁶. Homosocial recruitment makes it difficult to establish a “critical mass” of researchers who think creatively and differently and who can engender the necessary innovation²⁷.

Discussions on national research strategies and on quality have to only a small extent considered the importance of the composition of the research communities and the culture of research, and what promotes quality in the long and short terms. The Committee's view is that there is a need for more systematic reflection on the content of the concept of quality to enable the goal of higher quality in research to be achieved. It will be vital to investigate what the prevailing quality criteria entail for actual research quality and how they affect the possibility of achieving gender equality in the field of research. The Committee has noticed

²⁴ Wennerås, C., Wold A. “Neopotism and sexism in peer-review” in *Nature* 387:341-343 1997. See also *Gender and Excellence in the Making* (2004) prepared by the EU Commission Directorate-General for Research. One way of avoiding such problems is to apply the so-called “blind peer review”: “The journal *Proceedings of the Modern Language Association* began using blind peer reviews as early as 1974 after it had been revealed that male peers rejected a far greater proportion of articles written by women than women peers did.” Hagen, Erik Bjerck and Anders Johansen (ed.) 2006 *Hva skal vi med vitenskap? (What shall we do with scientific knowledge?)*, Universitetsforlaget, p. 17.

²⁵ EU Commission: *Gender and Excellence in the Making*, 2004.

²⁶ This can also be viewed in connection with issues concerning whether or not internal recruitment leads to a deterioration of research quality, see Agnete Vabø: *Mytedannelser i endringsprosesser i akademiske institusjoner (The formation of myths in academic institutions)*, Rokkan Centre for Social Studies, report 1/2002.

²⁷ Svein Kyvik: *Kritisk masse – om forskningsmiljøers størrelse, produktivitet og kvalitet (Critical mass – on the research communities' size, productivity and quality)*, NIFU work series 1998/ no. 8.

that while these issues are now more frequently seen in international discussions on gender and equality, they are almost non-existent in the Norwegian debate²⁸.

5.2 Strategic players in research and their responsibilities

The Research Council of Norway plays a key role in the shaping of national research strategies. The Council makes its priorities – often on the basis of international trends and strategies – such as its investment in large-scale programmes and the choice of certain subject areas. The Council’s prioritisations are of particular importance for recruitment to research. The increasing use of earmarked research funds by both the Ministry of Education and Research and other ministries along with the Council’s investment in large-scale research programmes set guidelines for the institutions’ research. Surveys that show that women in general are given less external research funds than men and are more poorly represented in the areas of priority present grounds to question the consequences these research strategies have for the recruitment of women to research and science. There appears to be a need to assess alternative ways of allocating funds if women are to achieve the same access to funding as men.

The Committee is of the view that discussions on relevant research policy themes such as research quality, the organisation of research and academic freedom must be related to the goals of increasing equality and diversity. This is seldom the case today. Research of high quality and relevance is dependent on the research communities’ ability to ask the “right” questions and to assess the various answers. This is best secured in environments that are characterised by good academic leadership, that make room for people with different background experience, and that aim to secure diversity and good professional collaboration. Improving the integration of women into research will be instrumental in achieving this. And this is no less important when we consider that much of the innovative research actually occurs at the interface between the various disciplines – a tendency that is expected only to grow.

The possibility of attaining a speedy improvement of the integration of women faces a big problem in that mobility within research communities is relatively limited at the same time as there is little expansion in the public research sector. The small number of permanent scientific positions creates a bottleneck in appointment processes. Environments that show growth in the recruitment of women to permanent scientific positions are either those that have been recently formed or that represent an area of priority in which new posts have been established²⁹.

The Committee urges the Ministry and research institutions to initiate systematic efforts aimed at strengthening equality in all areas of priority. A specific example of an area of priority is the Ministry’s channelling of funds through the Research Council in order to increase researcher mobility within the EU/EEA area. In this connection an Internet portal has been set up that is linked to similar websites for all the EU/EEA countries through the EU Commission’s ERA-MORE portal³⁰. Another example that can have a positive effect on the recruitment of women to permanent scientific positions is the Ministry’s efforts to strengthen

²⁸ The seventh framework programme takes the initiative to set up an expert group to work on the theme of Gender and Excellence. This forms part of the work programme Science in Society. See http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CapacitiesDetailsCallPage&call_id=33

²⁹ Schwach, Vera, Ellen Brandt, Agnete Vabø: *I spennet mellom kvalitet og krav til likestilling (Between quality and requirements for gender equality)*, NIFU STEP working paper 8/2004.

³⁰ See <http://www.eracareers.no>.

researcher education with regard to both rules and culture. There is also some expectation that women's opportunities will be enhanced through the ratification of the European Commission's *Code of Conduct for the Recruitment of Researchers* by the Research Council of Norway and the Board of the Norwegian Association of Higher Education Institutions. The *Code of Conduct for the Recruitment of Researchers* advocates that recruitment to research posts should be characterised by the greatest possible openness. It also argues for greater tolerance regarding career paths in academia by recommending that when researchers are evaluated for a position more emphasis should be given to teaching, supervision, knowledge dissemination and leadership as part of the assessment basis. The *Code of Conduct for the Recruitment of Researchers* is thus a document that widens the opportunities for appointments to scientific positions. The Committee has been concerned with precisely this: establishing policy instruments that can encourage institutions to seek researchers with a wider set of qualifications than is the case today.

6 The Committee's recommendations

As the Committee sees it, both the approaching generation shift within the university and college sector and the challenges presented by research policy objectives mean that any gender equality work must be of a nature and scope that enables these significant challenges to be met in a vigorous manner. This requires considerably greater endeavours if the equality goals are to be reached. Institutions must strengthen their own efforts, but it is the Committee's opinion that there is also an obvious need for increased activity from the Ministry. With the current management structure it is furthermore necessary to assess how the financing system can be put to use to promote gender equality measures at universities and colleges.

6.1 Gender equality in financing and managing universities and colleges³¹

The report *Likestilling i finansieringssystemet for universiteter og høyskoler (Gender equality in the financing system for universities and colleges)* (Statskonsult 2006:17) shows how the financing system for universities and colleges can be used to impact on the increase in the number of women in permanent scientific positions.

6.1.1 Management dialogue

In Norway the ministries' management of subordinate agencies is carried out through a management dialogue that includes both written and oral communication on the budget allocation. The Ministry of Education and Research conducts this dialogue with its subordinate agencies, which include all state universities and colleges, with the help of an annual meeting and a "letter of allocation" in connection with the actual transfer of resources to the institution. The letter of allocation contains the general goals set by the Ministry, but it is left to the enterprises themselves to formulate their performance targets. Incorporating equality considerations is already a routine in this process, and according to the Ministry of Education and Research gender equality goals and the institutions' follow-up of them has been given greater attention in recent years. In its letter of allocation for 2006, the Ministry set

³¹ Points 6.1.1 and 6.1.2 are a somewhat reworked version of certain elements in the report *Likestilling i finansieringssystemet for universiteter og høyskoler (Gender equality in the financing system for universities and colleges)*, Statskonsult 2006.

the goal that the institutions were to contribute through their personnel policy to a less gender-segregated working life. As a follow-up to this the institutions were asked to consider including the following data in their reporting to the Ministry:

- The proportion of women in leading administrative posts
- The proportion of women in teaching and research posts
- The proportion of women in research fellowship and post-doctoral posts
- The proportion of women among those newly appointed to scientific positions
- The proportion of women among those promoted internally in scientific positions
- Average pay for women and men according to position group
- Gender distribution between full- and part-time employees
- Measures implemented in the enterprise, cf. Section 1a of the Norwegian Gender Equality Act

In the opinion of the Committee the management dialogue between the Ministry of Education and Research and the subordinate agencies can be used far more proactively to ensure that the general gender equality goals will be attained. For example the recommended reporting points can be made compulsory and can be extended to apply to reporting the appointment of women to scientific positions, divided according to subject. Such data could provide the necessary basis for assessing whether institutions actually contribute to increasing the proportion of women through their appointments. Furthermore, better statistics can reveal whether women are systematically filtered out in the appointment process, and can thus provide a basis for assessing whether gender discrimination is occurring.

The Committee recommends the Ministry of Education and Research to place greater emphasis on gender equality goals in its management of universities and colleges. For example stricter requirements can be set for reporting goal achievement regarding the proportion of women among those newly appointed to scientific positions, divided according to subject.

6.1.2 The financing system

In connection with the Quality Reform a new and partly result-based financing system was introduced for universities and colleges in Norway. The annual budget consists of a basic component (approx. 60%), a teaching component (approx. 25%) and a research component (approx. 15%). The two latter components in the financing system are result-based in the sense that extra budget funds are awarded for achieved results in the form of the number of qualified graduates and the number of doctorates, publications and externally-financed projects. No systematic study has been conducted on how this system, in its current form, affects equality at the institutions³². On the basis of the fact that the principle concerning the use of economic incentives in the financing of the institutions has been introduced and recognised through this scheme, the Committee would like to raise the question as to whether it will not also be appropriate to use economic incentives to create gender equilibrium in the higher education sector.

³² A NIFU STEP report states that individual research productivity is mainly determined by position level and degree of international contact, while resource distribution models are of importance for the distribution of research between various academic activities (NIFU STEP sub-report 4 2006:32). The position of women is worse than that of men in all these areas.

A financing scheme that gives rewards for the achievement of equality goals could contribute to making gender equality work visible to scientific employees. It will also express a political commitment to assigning priority to this kind of work. In addition a scheme of this type could give women who are considering a scientific career an important indication that they are welcome.

Models

Statskonsult's study *Likestilling i finansieringssystemet for universiteter og høyskoler* (*Gender equality in the financing system for universities and colleges*), which was conducted on commission from the Committee, presents six different models for how the Ministry of Education and Research can use its management dialogue with universities and colleges more proactively to promote the goal of appointing more women to scientific positions. Three of the models include the use of economic incentives to motivate the institutions to improve their goal achievement.

Statskonsult regards the models that have economic incentives as being more effective as policy instruments than those without such incentives, but emphasises that their effect will depend on factors such as the amount of the rewards and the scope of the efforts required to win them.

Some of the models, for example 5D, are designed to meet the special challenges presented by mathematics, the natural sciences and technology. The Committee particularly advocates the strengthening of the management dialogue as mentioned in 6.1.1, and is also of the view that there are specific grounds to assess model 5B, or alternatively 5D (price per unit), and model 6 concerning earmarked government grants (see next page).

Table 6.1.2.1 Models

Model	Description
Model 1 No economic incentives Equality as a separate item at government agency management meetings	Equality and gender distribution among academic staff is discussed as a separate point at the annual management meetings between the Ministry and the institutions.
Model 2 No economic incentives Benchmarking study	Gives an overview of the status in the gender equality area at the different institutions, for example in the central government budget. The institutions are compared and ranked. A more comprehensive benchmarking study, which includes a description of development trends and the institutions' experience with various forms of measures, is made at regular intervals, one of the aims being to promote learning.
Model 3 No economic incentives The Ministry sets compulsory performance targets for the institutions	The Government sets performance targets for equality in academic posts in the budget deliberations. The targets are included in the letters of allocation to the institutions.
Model 4 With economic incentives The Ministry gives financial rewards when equality goals are attained	Specific performance targets are set for the proportion of women in scientific positions at the various institutions. Financial rewards are given to institutions that reach the performance targets.
Model 5 A, B, C og D With economic incentives Rewards for each woman appointed	The institutions are rewarded for each woman appointed to a scientific position. The model can be general or can be targeted towards various subject areas, position categories etc.
Model 6 With economic incentives The Ministry sets aside financial resources for gender equality measures at the institutions	The Ministry sets aside a "pot" of money earmarked for gender equality measures at universities and colleges aimed at increasing the proportion of women in scientific positions. The various institutions apply for money by submitting their plans. The money from the Ministry is only released if the plans are considered satisfactory and the applicant institutions contribute a corresponding amount.

Source: Statskonsult 2006

Model 5: Price per unit financing

The objective of model 5 is to motivate the institutions to appoint women to scientific positions through the use of economic incentives. The idea is that each appointment of a woman will be rewarded by a certain amount of funding from the Ministry.

The model is based on the same principle as the teaching component in the budget for universities and colleges, i.e. funding or rewards are given per “produced unit”. The financing can be linked to a recruitment goal, and one “produced unit” in this context will be a woman who is appointed to a permanent scientific position. It is important to clarify that this is not a matter of earmarking positions or setting quotas for women. Both women and men will still be able to apply for posts and will be assessed on the basis of their qualifications. The model can be designed in various ways.

Table 6.1.2.2 Overview of alternative designs of model 5

Model	Type	Description
Model 5A	General scheme	Number of women recruited to all types of permanent scientific positions in the entire university and college sector
Model 5B	Scheme aimed at the university and specialised universities	Number of women recruited to all types of permanent scientific positions at the university and specialised universities
Model 5C	Scheme aimed at the recruitment of professors	Number of women recruited to professorships in the entire university and college sector
Model 5D	Scheme aimed at subject areas	Number of women recruited to permanent scientific positions within mathematics, the natural sciences and technology in the entire sector

Source: Statskonsult 2006

The funding will be allocated to the institutions on the basis of the data they have submitted on gender distribution. This will involve a certain time lag in the allocation, i.e. it will not have budget consequences until at least one year after the appointment has been made. There are various alternatives for how the institutions can use this extra allocation:

- it can be given to the institutions with no guidelines for its use
- it can be set aside as a fund for research projects with women project managers
- it can be set aside as a research fund or the equivalent at the institutions

The Committee recommends that financing from such a scheme be given to the institutions without any specific guidelines for its use. Not only will this reduce additional administrative work related to the follow-up of special guidelines, it is also important with regard to the institutions’ academic independence not to impose more guidelines than necessary on them. The size of the amount must be the object of discussion and must be based on counterbalancing consideration for the budget’s expenditure items against an assessment of the level the amount must reach to function as an actual incentive. For this country, an amount of approximately NOK 0.5 million for each woman appointed could form the starting point for such discussions, and this amount has been used as a basis for estimating the economic consequences of the alternative models.

The Committee’s scepticism to model 5C can be attributed to the fact that a unilateral focus on women attaining professorships can affect the proportion of women in assistant professor posts. Appointing women to permanent scientific positions should in general be given priority. Promoting the appointment of women to assistant professorships will pave the way for new recruitment and will strengthen recruitment to professorships. Unilateral focus on professorships will principally encourage those who have already entered the system³³. With regard to model A, this will be expensive and insufficiently goal-oriented. The estimates of

³³ Vera Schwach, Ellen Brandt, Agnete Vabø: *I spennet mellom kvalitet og krav til likestilling (Between quality and requirements for gender equality)*, NIFU STEP working paper 8/2004.

economic consequences are based on a historical annual growth of 2.7% and the replacement need within the various subject areas and position categories.

Table 6.1.2.3 Costs for model 5 – price per unit financing – an accounting example

	Total number of newly-appointed women for the period 2005-2020 assuming a recruiting proportion equal to 40%	Average number per year (2005-2020)	Average cost per year with result-based financing of MNOK 0.5 million per employee
Model 5A	4 460	300	MNOK 150
Model 5B	1 900	125	MNOK 62.5
Model 5C	1 040	70	MNOK 35
Model 5D	900	60	MNOK 30

Source: Statskonsult 2006

The accounting example shown in Table 6.1.2.3 is based on a proportion of newly-appointed women of 40% in all four alternative models. This means that the expenses can be higher or lower depending on how many women are actually appointed. Basically a proportion of 40% is an optimistic estimate, particularly for models 5C and 5D where average figures from NIFU STEP for the period 2005 to 2020 have been used. If figures for the period 2005 to 2008 are applied instead, these will give a lower annual expenditure since the annual recruitment need is estimated to be lower at the beginning of the period 2005 to 2020 than towards the end. With the growth rate that has been used in the accounting example in Table 6.1.2.3, the proportion of women for model 5B will be 44% of all scientific employees at universities and specialised universities in 2020. Similarly this growth rate will give a proportion of women of 40% for model 5A for the entire sector. Attaining such high recruitment figures for women as those indicated here will presumably represent a considerable challenge.

Model 6: Earmarked government grants

The objective of this model is to strengthen the various institutions' possibilities of implementing measures that contribute to increasing the proportion of women in permanent scientific positions. The grants are intended to instigate the initiation or continuation of systematic efforts to attain this goal.

The use of this model requires the Ministry of Education and Research to set aside a "pot" of money earmarked for gender equality measures to increase the proportion of women in scientific positions at universities and colleges. The various institutions apply for money by submitting their plans. The money from the Ministry is only released if the plans are considered satisfactory and if the applicant institutions contribute a corresponding amount. The government "gender equality pot" is intended to serve as an incentive to initiate or continue measures that have a positive impact on the number of women in scientific positions.

The goals for the proportion of women in permanent scientific positions can be set either by the institutions themselves – which is currently the case in Norway – or can be related to politically defined goals as outlined in model 3. Goal achievement can be made the object of reporting, as it is today, and benchmarking can be utilised to make comparisons between institutions. Even though this model entails the financial resources from the Ministry being released on the submission of the plans, "rewards" can also be included here when the goals have been attained. Instead of rewarding for goal achievement, sanctions can be imposed for lack of goal achievement – for example making it impossible for the institution in question to be given new funds from the pot until the original goals have been reached unless the management dialogue proves that there are acceptable grounds for the lack of goal

achievement. Measures that are included in plans submitted to the Ministry for approval can be of the type that already exists in the institutions' action plans for gender equality such as mentor programmes, buying time instead of teaching etc.³⁴. The model can be based on joint financing of measures between the Ministry and the institutions on a 50/50 basis. This could increase the total funds for equality as well as ensuring that the responsibility for implementing the measures remains with the institutions.

Earmarking funds is in general regarded as being a relatively strong policy instrument for realising political goals. The instrument is weakened if an extensive application procedure is necessary in order to be granted the resources in question. If the resources are small and the efforts to gain access to them are regarded as considerable, this could result in few institutions taking the trouble to apply. An extra grant from the Ministry for implementing the plans that the different institutions have drawn up could increase the scope of the most effective measures.

The economic consequences of the model will depend on the amount of funds the Ministry allocates to the grant pot³⁵. In Norway the measures can be monitored within the ordinary government agency management process. With regard to the size of the grant pot, it will be necessary to make the amount big enough for it to be experienced as a real difference by the institutions that are given funds from it. Since universities currently spend NOK 3–6 million on their own equality measures, it will be logical to base the amount any such pot is to contain on the total resources that are used for this purpose within the entire university and college sector. The objective is to be able to offer an amount that makes it possible for the institutions to increase their work in this area considerably without weakening their own efforts. The administrative consequences will be insignificant for institutions that are already working proactively on gender equality and will constitute sending already existing action plans for equality to the Ministry for assessment. One possible disadvantage may arise if the processing time in the Ministry is unreasonably long.

To meet the considerable challenges facing the sector regarding women in research and science, the Committee recommends the Ministry of Education and Research to assess model 5B in particular (or alternatively 5D) and model 6 with the goal of implementing the required measures during 2007 and for the 2008 budget. The Committee also proposes that model 5B (or alternatively 5D) possibly be initiated for a trial period of three years with subsequent evaluation.

6.2 The Quality Reform

An overall evaluation of the Quality Reform was presented in January 2007. The Committee has been concerned with investigating whether the Quality Reform can have had unintentional effects on gender equality. It is very important to ensure that the Reform's new financial, structural, organisational, research and pedagogical policy instruments are formulated so that they can contribute to achieving a better gender balance and do not come into conflict with the gender equality work. The Committee has contacted the Ministry of Education and Research on this point, and has requested that a gender equality analysis be made of both the

³⁴ The model has been inspired by a scheme in operation in the United Kingdom, see <http://www.hefce.ac.uk/>.

³⁵ To facilitate comparison, it can be mentioned that at the end of the 1990s the amount of NOK 38,370,000 was earmarked for professorships for women. However the EFTA Court ruled against the scheme, which was controversial but regarded as successful.

qualitative and quantitative material that has been gathered in connection with the evaluation. There is a particular need for a gender equality analysis of:

- **The quality and accreditation system:** an evaluation of the quality and accreditation system from a gender equality perspective.
- **The financing system:** an evaluation of the incentive-based component of the financing system from a gender equality perspective, with particular emphasis on the research component.
- **Management and leadership:** an evaluation to identify whether changes in the management and leadership structure in academia have affected gender balance.

The Committee recommends the Ministry of Education and Research to make an evaluation of the consequences of the Quality Reform for various gender equality issues in the higher education sector.

6.3 National project for leadership training in academia

Strengthening academic leadership in general and discipline leadership in particular is one of several strategic institutional research goals that can be seen in connection with increasing the quality of research. The sector faces a challenge with regard to improving the gender balance at leadership level. Viewing equality competence together with leadership and the recruitment of women to leadership positions is one way of strengthening the gender balance and providing the institutions with leadership skills at a higher level. There are also more comprehensive grounds for initiating a national project that aims to strengthen academic leadership in general and to improve gender balance in particular:

- Gender equality is a complex field that requires knowledge and an understanding of the problems within the organisation. Such knowledge should not only result in benefits for women. Competence-building programmes should be offered in which all those who are involved in leadership participate, or *those who wish to be involved*.
- It is often claimed that it is difficult to recruit women to leadership since few women have adequate competence, a factor that is related to the requirements for professorial skills. In order to recruit women it is important that management training projects include those who view leadership in a long-term perspective – not only those who already hold leadership positions.
- Part of the Quality Reform consists of a new management and leadership structure. There is greater focus on leadership and the institutions' managerial prerogative, structure and organisation, which in turn calls for increased attention to what *academic* leadership actually entails. It is also important to reflect on how various forms of organisation and structuring of leadership can have significance for the goal of achieving gender balance at leadership level.

The Committee recommends that a three-year national project be initiated for the development of academic leadership in a gender equality perspective to attain the dual goal of:

1. Increasing competence within academic leadership, including gender equality competence
2. Recruiting women to academic leadership positions

The project is to be developed according to the Swedish IDAS project model (<http://www.idas.nu/>).

6.4 Continuation of a national committee for gender equality

Partly due to its efforts as a national coordinator for work aimed at gender equality and mainstreaming in the higher education sector, the Committee for Mainstreaming – Women in Science has been important for work performed on gender equality in this sector. It has conducted a direct dialogue with the relevant environments, made proposals regarding policy instruments, assessed the effect of these instruments, and given recommendations – including in the field of organisational development. The Committee has created meeting places and debate between the different institutions. Furthermore it has contributed to a dialogue between the institutions and the Ministry, as well as serving as the Ministry's advisory body and the national motive force for mainstreaming. Last but not least the Committee has taken the initiative to collect and disseminate knowledge – for example through the Resource bank for gender mainstreaming in the academic sector as well as through conferences and seminars.

The Committee has submitted viewpoints to the Ministry of Education and Research concerning the establishment of a possible new committee, one element of which was the extension of the mandate to include parts of the institute sector.

The Committee recommends the Ministry of Education and Research to make provisions for the continuation of a national committee for gender equality in the higher education sector with a mandate and financing from the Ministry.

6.5 The Research Council of Norway

Of the total financing from the Research Council of Norway, 70% is assigned to male researchers. This can largely be explained by the fact that the national areas of academic priority lie in the field of male-dominated disciplines. In total men receive more external financing than women – partly because it is more common to assign external financing to subject areas that are male-dominated (the natural sciences and technology). These are also subject areas that are cost-consuming by nature. Professors are given more national external research funds than assistant professors, and male professors more funds than women. It is mostly male researchers who are awarded external financing from international sources within all subject areas with the exception of the humanities. The proportion of those who receive external research funds from abroad is increasing for both women and men, but in spite of this

men still get more external funds than women in all position levels³⁶. The Committee is of the opinion that there is a need for the Council to conduct a far stronger and more consistent integration of the equality dimension in its activities.

In recent years the Research Council has initiated measures to promote equality through a major and highly profiled policy instrument: Centres of Excellence (CoEs). The announcement texts for posts in 2005 included the following:

- The institutions are requested to propose women as centre leaders and leading researchers.
- A moderate gender quota system should be practised when allocating funds.
- The institution will be asked to give target figures for the proportion of women among employees and in PhD and post-doctoral posts.
- Some of the allocations to the Centres of Excellence should be reserved for gender equality measures.

The expectation of a better equality profile led to a higher proportion of the applications appointing female centre leaders with this advertisement than had been the case with the first advertisement³⁷, and the applicants had also placed far more emphasis on gender balance in the research group and particularly in the PhD and post-doctoral group. The gender equality plans were further improved among applicants who were invited to go further after pre-qualification.

One obvious challenge for all CoEs is to ensure that they retain female graduates after the PhD has been completed, i.e. to safeguard further qualification and recruitment to post-doctoral posts and permanent posts. The Research Council has allocated NOK 3 million per year to support the centres in this work. Whether the CoEs have been successful with their gender equality plans will be covered in the midway evaluation. The gender equality dimension has formed part of the mandate for the midway evaluation of the existing CoEs. Those who conduct the evaluation were asked to assess whether: “[t]he perspective of gender equality has been adequately taken into account in the centre's recruitment policy”³⁸. The evaluations show that even though there are notable differences among the centres, the gender balance has improved as a whole – particularly at PhD level.

6.5.1 Gender budgeting of measures to promote quality in research

The Nordic Council of Ministers has conducted a joint project concerning integrating gender budgeting into the respective countries' central government budgets. The methods that have been developed can also be applied to the ministries' subordinate agencies and institutions. The Nordic Council of Ministers defines gender budgeting as follows:

36 Elisabeth Hovdhaugen, Svein Kyvik, Terje Bruen Olsen: *Kvinner og menn – like muligheter? Om kvinners og menns karriereveier i akademien (Women and men – equal opportunities? Career paths of women and men in academia)*, NIFU STEP work series 25/2004.

37 The Research Council of Norway first advertised funds for the Centres of Excellence five years ago. In 2006 a midway evaluation was made of these centres.

38 *Midway Evaluation of the Norwegian Centres of Excellence. A report submitted by an International Evaluation Committee*, The Research Council of Norway 2006, p. 51.

The term gender budgeting is used generically to describe various ways of illustrating how the policies of a country, region or municipality affect the distribution of resources between women and men, girls and boys respectively. International gender budgeting projects usually seek to apply a gender equality perspective to the policies being pursued or proposed, for instance how various programmes, grants and taxes or budget priorities are distributed between women and men³⁹.

Gender budgeting is a type of impact analysis that shows the importance that various policy instruments, measures and reforms have for men and women. The distribution and allocation of resources between the genders is a key issue. The analysis provides a knowledge base for assessing whether policy instruments and measures produce a desired or undesired effect on gender equality. This knowledge serves as a basis for decisions to allocate funds in ways that reduce any undesired consequences. An important point in gender budgeting is that the analysis must be made in the planning phase of new programmes, activities and measures. The Committee is of the view that this tool is of particular relevance for the Research Council of Norway.

Gender budgeting should be put to use throughout the Council's funding schemes – national and international recruitment systems (for example ERA-MORE), research schemes, programmes, free project support, business-oriented measures etc. The Committee also wishes to mention policy instruments related to the development of the excellence schemes: Centres of Excellence, Centres for Research-based Innovation, and the Outstanding Young Investigators scheme, although concern has been expressed as to whether these are instruments that lend themselves to promoting outstanding research within the entire range of subjects and for both genders.

The Committee recommends the Ministry of Education and Research to enter into a dialogue with the Research Council of Norway with the goal of introducing gender budgeting within the Council's funding schemes, programmes and other activities.

6.5.2 Incentive programme for mainstreaming in the Research Council of Norway

A general challenge is to motivate the institutions in the sector to involve female research leaders and female researchers and recruits in project applications to the Research Council of Norway. The challenge is particularly substantial in the natural sciences and technological subjects – subjects in which women are clearly underrepresented and which constitute areas of priority in current research.

Under the sixth framework programme the EU set up a special incentive programme to encourage the integration of gender equality in applications within Networks of Excellence (NoEs) and Integrated Projects (IPs). The prerequisite for applications releasing incentive funds was that they contained an action plan for gender equality⁴⁰. The evaluation of this programme showed that the effect was relatively good, and several of those involved wanted

³⁹ *Now It's About the Money. Mainstreaming a gender equality perspective into Nordic national budgets*, Final project report 2004-2006 Nordic Council of Ministers, 2006 p. 11. See also *Gender Budgeting – Integration of a gender perspective in the budgetary process*, Part report: country reports Nordic Council of Ministers, 2006.

⁴⁰ See Vademeccum. Gender Mainstreaming in the 6th Framework Program, March 2003.

the practice from the sixth framework programme to be maintained⁴¹. However, it was changed somewhat in the seventh framework programme: it is now not until the projects have reached the phase of negotiating the allocation of funds that a gender action plan must be integrated. Various models can be visualised for how the Research Council can promote mainstreaming in the applications for all its research projects.

- The requirement that all applications must contain a special action plan for how gender equality is to be integrated into the research project, or must document that such a plan has already been integrated, without funds being released. The lack of such a plan will be viewed as negative in the evaluation.
- Project applications that either integrate an action plan for gender equality or that can document that gender equality is already integrated will be awarded funds from a special incentive pot.
- The Research Council sets up a special incentive pot for mainstreaming, and the various research projects that have had their applications granted can apply for funds from this pot.

The goal of these models is to encourage the institutions to involve female researchers and research recruits in applications for research financing. Improving women's access to external research funds will contribute to better gender equilibrium in the research communities.

The Committee recommends the Ministry of Education and Research to enter into a dialogue with the Research Council of Norway with the goal of initiating an interdisciplinary incentive programme for mainstreaming.

6.5.3 Research programme: gender in academia

The knowledge base on the relationship between gender and the academic world is both inadequate and much sought after. The increase in demand for such a base is connected to the special recruitment challenge facing the sector. As previously pointed out, national objectives have been set concerning growth in research, while at the same time the sector is faced with considerable demographic challenges. There is therefore a growing recognition of the need to conduct research into gender and academia⁴². When considering the research-based knowledge that is required, certain themes take a prominent position:

- Recruitment and appointment processes
- The internationalisation of research and its possible impact on gender equality
- The importance of the excellence schemes for gender and equality in research
- Informal aspects of the research culture
- Comparative studies of women in research
- Longitudinal career studies

⁴¹ Se http://www.epws.org/index.php?option=com_docman&task=doc_download&gid=45. See also the Danish research programme *Kønsbarrierer i de højere uddannelser og forskningen (Gender barriers in higher education and research)* 1996-2002 http://www.lige.dk/kil_uni_undersoeg.asp and the recently concluded study conducted in the USA <http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=11741>.

⁴² See the report *Gender and Excellence in the Making*, DG for Research EU Commission 2003.

- Research policy rhetoric and its significance for gender and equality

Measures that are often discussed to increase gender balance in this sector are welfare schemes for the period of pregnancy and of bringing up small children, legislation that regulates the gender equality field, gender equilibrium among students, and general political awareness of gender equality. Norway scores high on all these points but is nonetheless rated as average with regard to the proportion of women in scientific positions in academia⁴³. Traditionally – including in Norway – focus has been placed on external factors, i.e. discussions have mainly involved family policy initiatives or measures concerning personnel and administration. Internationally however the tendency is moving towards recognising certain issues as problems: the connections between gender and scientific cultures, the ways in which science is spoken of, the processes that define strategic research priorities – and not least the extent to which measures to promote quality have a counterproductive effect in the sense that they exclude the selection of some graduates (women)⁴⁴. These represent themes for research in areas such as working life, gender and more theoretical scientific contexts, as well as within the multidisciplinary field of science studies. Assessing scientific knowledge, the relationship between science and democracy, public utility versus academic freedom and creativity are all examples of general issues that are of interest both to research and to those involved in research policy. However, it still remains for exactly this type of question to be related to the equality dimension in research.

The Committee recommends that a special research programme be established on the theme of gender in academia to be financed through the Ministry's budget and to be organised and administrated by the Research Council of Norway.

6.6 The Norwegian Agency for Quality Assurance in Education – NOKUT

NOKUT has been assigned a key role in the education system, both as a supplier of terms and in a supervisory capacity – with major consequences for the institutions involved. NOKUT has considerable influence on higher education institutions through the development of quality systems and internal competence building. NOKUT should therefore also have the potential to be instrumental in efforts to increase gender equality.

The Committee has contacted NOKUT on several occasions without achieving any specific results. The Committee maintains that the gender equality perspective is not integrated into any of the laws, regulations and rules that govern NOKUT's activities apart from the Norwegian Act relating to universities and university colleges. The Act states that efforts must be made to ensure "*that the learning environment is well adapted for students of both sexes*"⁴⁵. It also states that "[u]niversities and university colleges shall make active, targeted and systematic efforts to ensure gender equality in all categories of employment at the institution"⁴⁶. The regulations that govern NOKUT's activities have their legal basis in this

⁴³ See *SheFigures 2006*: http://ec.europa.eu/research/science-society/pdf/she_figures_2006_en.pdf.

⁴⁴ This attracted great attention at OECD's workshop: *Women in Science, Engineering and Technology (SET): Strategies for a Global Workforce*, Ottawa, 28 and 29 September. See also *Gender and Excellence in the Making* from DG for Research, EU Commission 2003.

⁴⁵ Act of 1 April 2005 relating to universities and university colleges, Section 4-3 h.

⁴⁶ Act of 1 April 2005 relating to universities and university colleges, Section 6-2 *Gender equality*.

Act. It is therefore not unreasonable to expect NOKUT to assess the two mentioned aspects in their evaluations and accreditations. Alternatively NOKUT should be able to justify its opinion that the gender equality perspective is not of importance for the quality of study programmes. Reference is made here to the regulations relating to accreditation, evaluation and recognition in accordance with the Act relating to universities and university colleges which state: *“The quality assurance system shall cover all processes that are of significance for the quality of the study programmes – from the information provided to potential applicants up to the conclusion of the educational provision. Procedures must be in place for student evaluations of the teaching, for self-assessment and the institution’s follow-up of evaluations, for documenting the institution’s work on the learning environment, and for the quality assurance of new educational provisions”*⁴⁷.

The committee is aware that NOKUT has an independent role vis-à-vis political authorities and cannot therefore be given instructions. However, it is the Ministry of Education and Research that sets the regulations for NOKUT’s activities, and in the opinion of the Committee the Ministry should assess integrating gender equality considerations into the regulations when they are next revised. In addition, as the body that commissions evaluations – for example evaluations of general teacher training and engineering education – the Ministry should have an interest in the gender equality dimension being included in NOKUT’s activities.

The Committee recommends the Ministry of Education and Research to set new revised regulations concerning accreditation, evaluation and recognition in accordance with the Act relating to universities and university colleges with the effect that NOKUT’s tasks shall include assessing the Act’s provisions on the adaptation of the learning environment to both sexes and making efforts to achieve gender equality in all position categories.

⁴⁷ Unofficial translation of Section 2–1 (2) of the Regulations relating to accreditation, evaluation and recognition in accordance with the Act relating to universities and university colleges.

7 Appointment of a new committee

The Ministry of Education and Research regards its experience with the Committee for Mainstreaming – Women in Science as positive, and has therefore decided in 2007 to continue this scheme. A new committee will be appointed in the course of April 2007, and its period of office will extend until 1 April 2010.

The purpose of the Committee

The Committee shall make and give its support to recommendations concerning measures that can promote mainstreaming at institutions in the university and university college sector and in the research institute sector, thus contributing to greater gender equality. The Committee shall also foster a general awareness of issues connected to the uneven gender balance in both academia and the research arena.

Players and institutions in the university and university college sector and in the research institute sector as well as the ministries and the Research Council of Norway will be able to seek assistance and advice from the Committee. The Committee will also be empowered to initiate measures and to assess their effect. The Committee should also have an international perspective.

Composition of the Committee

- Gerd Bjørhovde, Professor/Pro-Rector, University of Tromsø – *Committee chair*
- Professor Knut Holtan Sørensen, Department of Interdisciplinary Studies of Culture, Faculty of Arts, Norwegian University of Science and Technology
- Assistant Professor Eva Skærbæk, Faculty of Health and Social Studies, Østfold University College
- Ernst Kristiansen, President of the SINTEF group and manager of SINTEF Oslo
- Gunnar Bolstad, Special Adviser, Research Council of Norway
- Katrine Elida Aaland, President of the Norwegian Association of Students