NIFU

Nordic Institute for Studies in Innovation, Research and Education

8th March 2011 (updated 22. Sept. 2011)

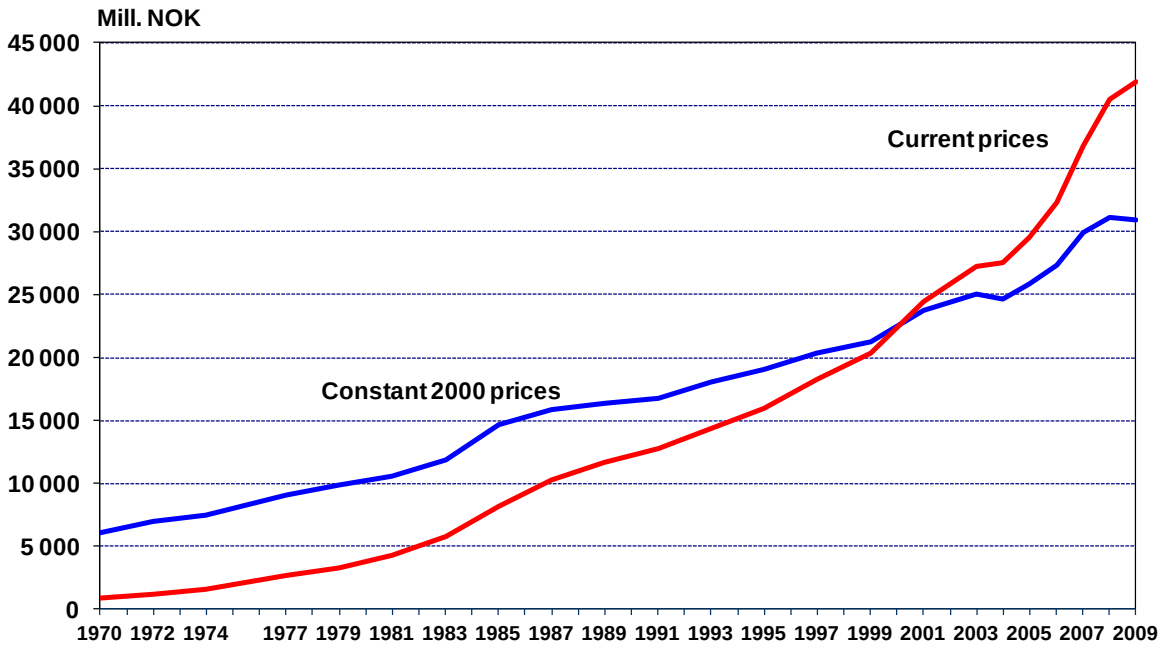
Newsletter on Norwegian R&D statistics

MAIN RESULTS

Weak growth in R&D spending during 2009

The statistics on expenditure on research and experimental development (R&D) shows that in 2009 these activities amounted to 41.9 billion NOK. This marks a modest increase in absolute spending, up by 1.3 billion NOK compared to figures for 2008, and 5.1 billion NOK compared to 2007. This total increase between 2007 and 2009 comprises 1.4 billion NOK of extra spending within the industrial sector, 2.0 billion NOK in the institute sector and 1.7 billion NOK in the higher education sector. This R&D activity and expenditure accounted for more than 36,000 person-years in 2009, 2,500 more than in 2007.

Intramural R&D expenditure in Norway 1970-2009. Current and constant prices.



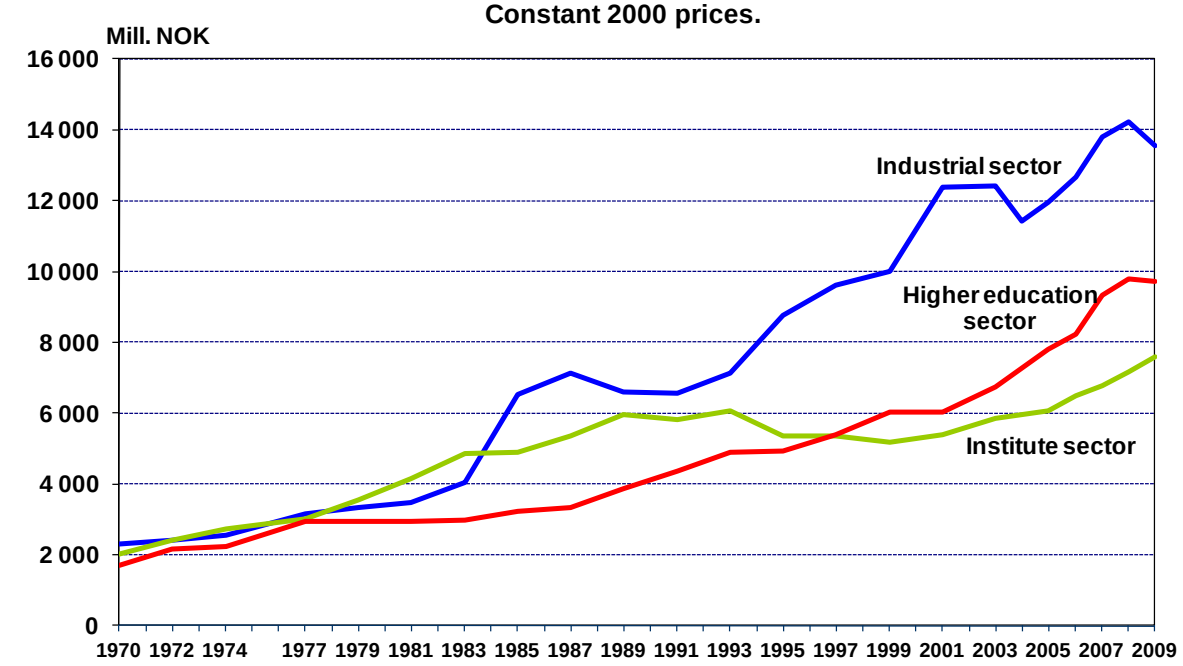
Source: NIFU and Statistics Norway

Previously published 2001-2009 figures for the industrial sector have been adjusted.

No real growth since 2008

When these increase figures for 2009 are measured in real-price terms, total R&D expenditure showed an annual increase of 2.1% on average since 2007. However, the entire increase in expenditure since 2007 is accounted for by expansion during 2008: the period from 2008 to 2009 saw a real terms *decrease* in expenditure of 0.3%. In comparison annual real-terms growth averaged 7.4% between 2005 and 2007.

Intramural R&D expenditure in Norway by sector of performance 1970-2009. Constant 2000 prices.



Source: NIFU and Statistics Norway

Previously published 2001-2009 figures for the industrial sector have been adjusted.

Declining R&D expenditure in the industrial sector

Intramural R&D expenditure in Norway in 2007, 2008 and 2009 by sector of performance. Billion NOK. Current prices.

	2007		2008		2009	
Sector of performance	Bill. NOK	Percentage	Bill. NOK	Percentage	Bill. NOK	Percentage
Industrial sector	16.8	45.5	18.3	45.1	18.2	43.5
Institute sector	8.3	22.6	9.3	22.9	10.3	24.5
Higher education sector	11.7	31.9	13.0	32.0	13.4	32.0
Total	36.8	100.0	40.5	100.0	41.9	100.0
Percentage of GDP	1.62		1.61		1.80	

Source: NIFU and Statistics Norway

Estimated figure for Higher education sector 2008.

R&D spending in the business sector had a small decrease in current prices between 2008 and 2009, representing a real terms decrease of 3.9%, in contrast to the period from 2007 to 2008, when industrial sector R&D spending experienced a real-terms increase of 3.8%. The industrial sector's share of overall R&D expenditure also declined slightly in 2009, making up 43.5% of the total, compared to about 45% in the previous years. More detailed statistics on industrial sector R&D spending are available via SSB's website: http://www.ssb.no/english/subjects/10/03/foun_en/

Other sectors showed modest growth between 2007 and 2009. Once figures are adjusted to take account of the reclassification of some research units, the average annual increase in R&D expenditure was 4.0% in the institute sector and 4.4% in the higher education sector.

Note: Statistics Norway has revised down R&D numbers for 2009 by 4% from the preliminary figures published in October 2010, due to additional information received from key R&D actors. Figures for all statistical years from 2001 to 2008 have also been revised for this reason.

Increased person-years in R&D

R&D person-years in Norway in 2007, 2008 and 2009 by sector of performance

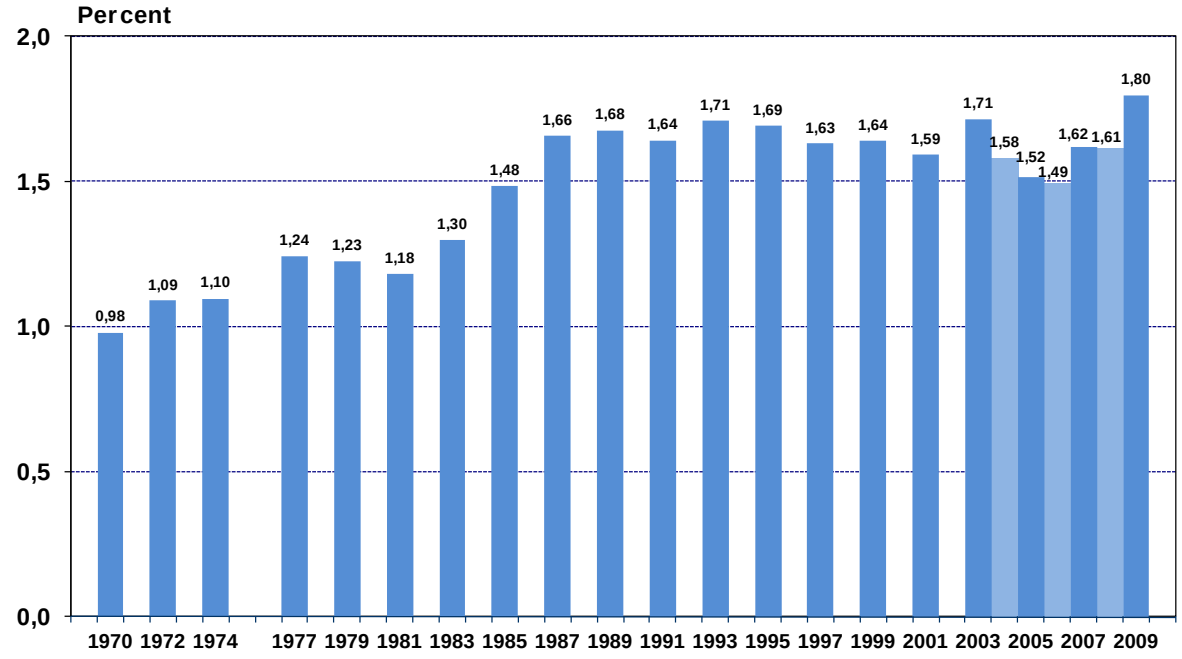
	2007		2008		2009	
Sector of performance	Number	Percentage	Number	Percentage	Number	Percentage
Industrial sector	14 848	44.1	15 996	45.1	15 673	43.4
Institute sector	7 796	23.2	8 165	23.0	8 763	24.3
Higher education sector	11 011	32.7	11 341	31.9	11 655	32.3
Total	33 655	100.0	35 502	100.0	36 091	100.0

Source: NIFU and Statistics Norway
Estimated figure for the Higher education sector 2008.
The table includes both researchers and administrative and supportive staff.

In total 2009 saw nearly 36,100 person-years of activity in Norwegian R&D, an increase of more than 2,400 person-years since 2007. The industrial sector accounted for about 43% of 2009's total, with the higher education sector making up 32% and the institute sector 24%. Of the R&D employment activity, 73% is work by researchers and academic personnel.

R&D expenditure increased as a proportion of GDP

Intramural R&D expenditure in Norway as a percentage of GDP 1970-2009.



Source: NIFU and Statistics Norway

R&D expenditure as a percentage of gross domestic product (GDP) stood at 1.80% in 2009. This is an increase compared to 2007 and 2008, when this value was steady at 1.61/1.62%. The increase is due to a significant decline in the estimated GDP from 2008 and 2009. Publicly funded R&D accounted for 0.83% of GDP in 2009, while industry-funded R&D, and R&D funded from other sources or overseas sources totaled 0.96% of GDP.

Increased public funding for R&D

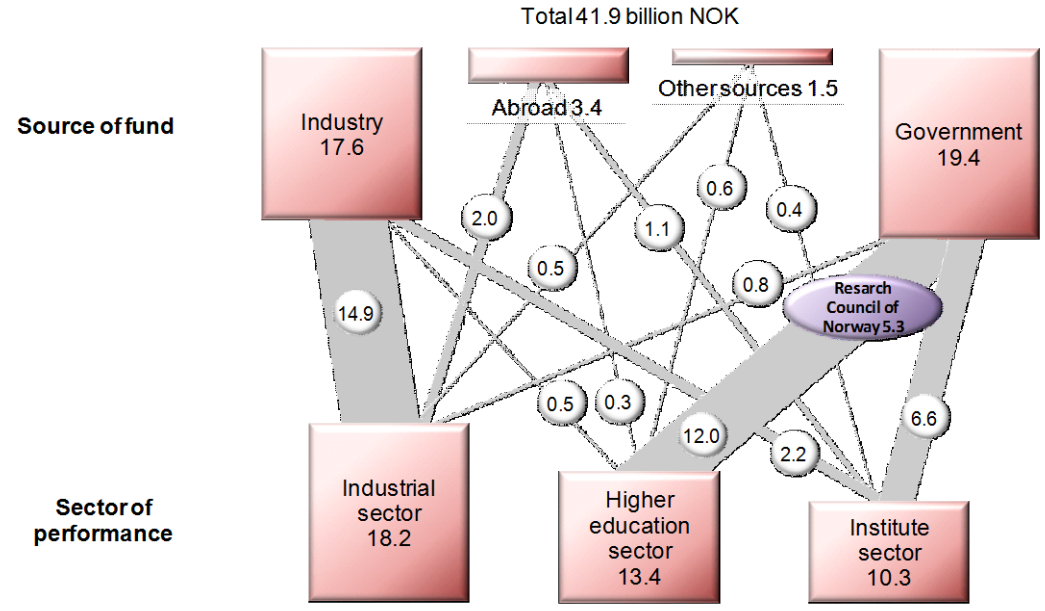
R&D expenditure in 2009 by sector of performance and source of funds. Billion NOK and percentage.

Sector of performance	Industry	Government Total	*Hereof: The Research Council of Norway*	Other national sources	Abroad	Total
Industrial sector	14.9	0.8	*0.4*	0.5	2.0	18.2
%	82	4	*2*	3	11	100
Institute sector	2.1	6.6	*2.5*	0.4	1.1	10.3
%	21	65	*25*	4	11	100
Higher education sector	0.5	12.0	*2.4*	0.5	0.3	13.4
%	4	90	*18*	4	2	100
Total	17.5	19.4	*5.3*	1.5	3.4	41.9
%	42	46	*13*	4	8	100

Source: NIFU and SSB

Of the total R&D expenditure in 2009, 17.5 billion NOK, or 42%, was funded by industry. This is 1.5 percentage points lower than figures for 2007. Industry-funded R&D is largely conducted by industry actors, who account for 85% of this activity. The overall proportion of public funding increased from 44.5% in 2007 to 46.4% in 2009. It is important to note the effect of the SkatteFUNN scheme, which saw 542 million NOK in 2009 recorded as "other sources ".

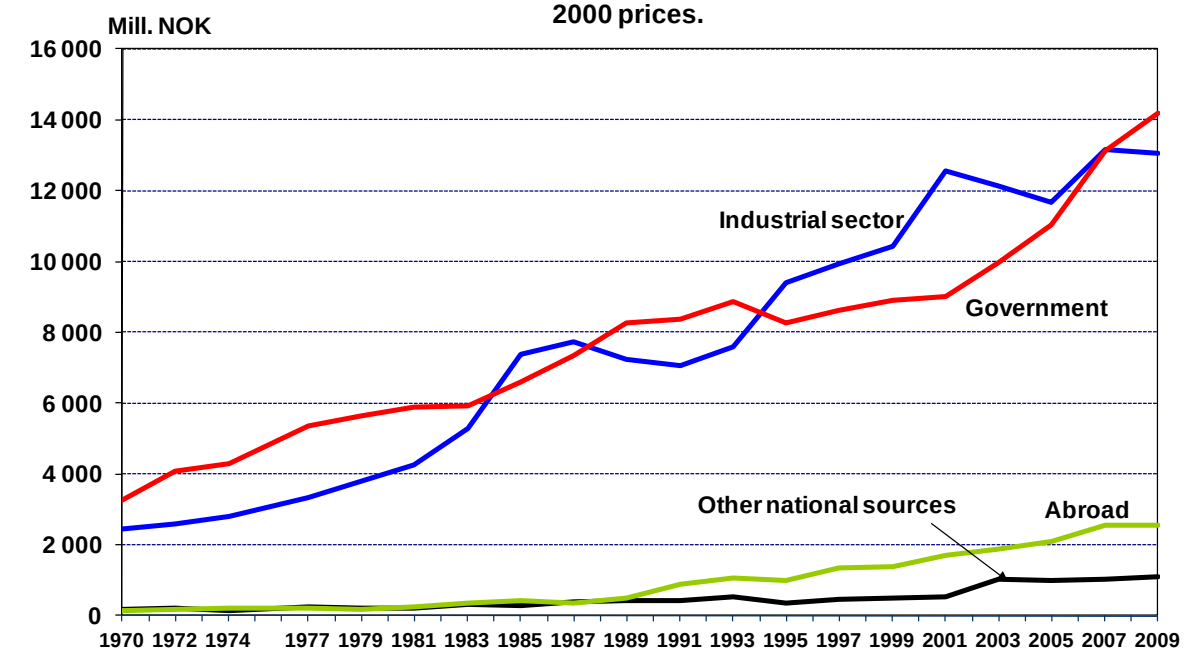
R&D expenditure 2009



Box sizes and line widths reflect amounts of expenditure or transfers (in NOK).

Source: R&D statistics/NIFU, Statistics Norway

Intramural R&D expenditure in Norway by source of funds 1970-2009. Constant 2000 prices.

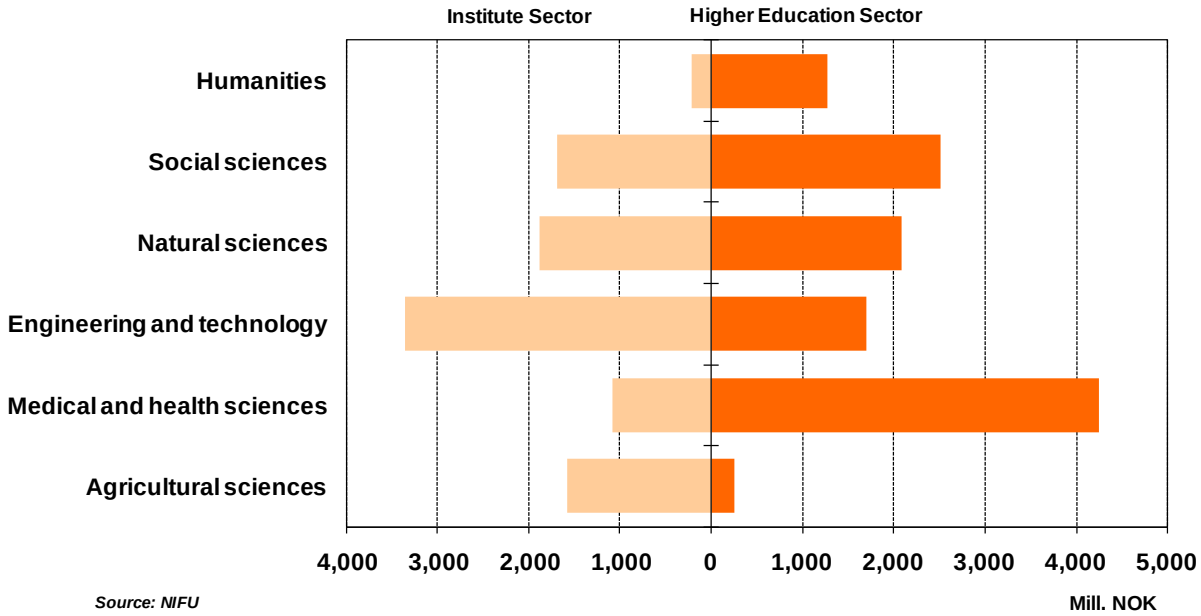


Source: NIFU and Statistics Norway

The 2001-2009 figures for the industrial sector have been adjusted.

Distribution over fields of science

Current expenditure on R&D in Norway in 2009 by field of science and sector of performance.



Source: NIFU

R&D activity in the higher education and research institution sectors is classified by field of science. As the chart above shows, most humanities research and medical and health research, took place within the higher education sector. Higher education is also, for now, just ahead of the institute sector in conducting maths and science research. However, when it comes to social science research, the largest share took place in research institutes. The

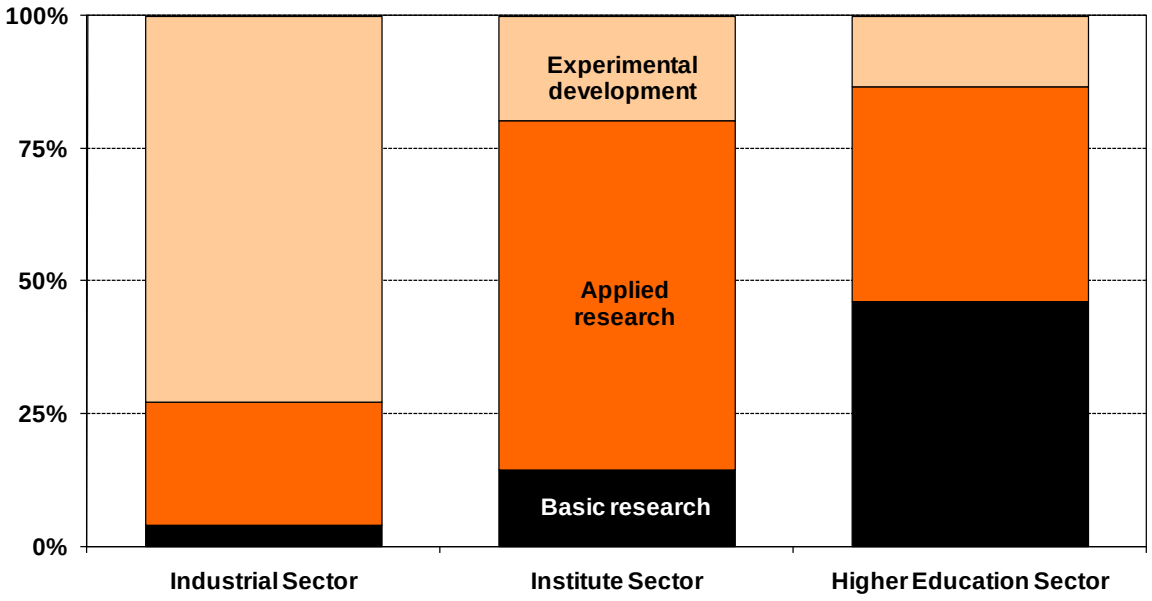
institute sector is also dominant in R&D for technology and agricultural and veterinary science.

R&D activities in the industrial sector are not recorded by field, but it can be assumed that a large proportion of these activities are focused on technology. Pharmaceutical industry R&D activity will also tend to be concentrated in the areas of medical and health research.

Between 2007 and 2009, real growth in expenditure was greatest in the area of technology: when growth in the higher education and institute sectors is combined, this field saw average annual growth of 9.4% in current expenditure at constant prices. Medical and health research saw the next strongest average growth during this period, up by 6.2% annually. Across all fields of science, real R&D expenditure increased by only 2.6% per year.

Distribution of activity types

Current expenditure on R&D in Norway in 2009 by type of activity and sector of performance. Percentage.



Source: NIFU and Statistics Norway

In 2009, 20% of all current expenditure on R&D was focused on basic research, 39% on applied research and 41% on experimental development. Three-quarters of all basic research was accounted for by the higher education sector. Despite this, basic research still accounts for less than half of the total R&D expenditure in the higher education sector. The institute sector is responsible for a significant proportion of all applied research expenditure, although a great deal of such research is also found in the other sectors. Indeed, applied research accounts for 40% of higher education R&D. Most experimental development research takes place in the industrial sector, a sector that conducts little basic research.

The national R&D statistics for Norway are prepared and published annually on commission by The Research Council of Norway.
NIFU is responsible for the higher education sector and the institute sector, while Statistics Norway is responsible for the industrial sector.
NIFU is also responsible for compiling the sector data into the total R&D statistics for Norway and to report statistics to international organisations and agencies. The statistics are prepared on basis of the OECD guidelines published in the so-called Frascati manual.
The R&D statistics are reported to the OECD data bases for Science & Technology as well as to Eurostat.
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Enquiries on R&D in the industrial sector may be addressed to Frank.Foyn@ssb.no, tel. ++47 21 09 46 88, Kristine.Langhoff@ssb.no, tel.: ++47 21 09 43 91 or Harald.Fondevik@ssb.no, tel.: ++47 21 09 47 51.
The national R&D statistics for Norway are published by NIFU STEP http://www.nifustep.no/English/Pages/default.aspx and the Research Council of Norway http://www.forskningsradet.no/.
More information on the industrial sector is available on http://www.ssb.no/english/