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REGERINGSKANSLIET

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**Memorandum**

11 September 2012

**SEK 4 billion for research and innovation focusing  
on life sciences**

**The Government is investing  
SEK 4 billion in research and innovation focusing on life sciences**

**The Government is investing SEK 4 billion in research and innovation to strengthen Sweden's position as a prominent research nation in the long term. Among other things, a special investment will be made in the life sciences area. In total, the investment will involve SEK 11.5 billion over the years 2013–2016. This will create conditions enabling Sweden to continue to be a competitive knowledge-based nation, where high-quality research and innovation contribute to a high level of growth, a strong capacity for innovation and highly qualified jobs.**

Government finances in good order and a resilient Swedish economy pave the way for increased investments to make Sweden stronger. At the same time, adequate safety margins must be in place to handle the risk of a deeper European debt crisis. The focus of economic policy is to counteract the impact of the crisis on jobs and prosperity, while Sweden's long-term growth capacity continues to be strengthened and more people enter work.

The Government has already announced more ambitious investments in infrastructure, raising the level by more than SEK 100 billion. This makes possible the construction of a new main line railway in the form of the Ostlänken (Eastern Link) and parts of the Gothenburg–Borås line, as well as important mining-related infrastructure. In order to create more paths to jobs for young people, the Government has also presented a youth package amounting to SEK 8.1 billion. Among other things, investments will be made in apprenticeship training and upper secondary vocational education.

The 2013 Budget Bill and the upcoming Research and Innovation Bill will also contain investments to further strengthen Sweden's position as a leading knowledge-based nation, through significant measures in research and innovation. The objective is for Sweden to be a prominent research nation, where high-quality research and innovation contribute to the development of our society and the competitiveness of our industry.

Researcher-initiated research of high quality at universities and other higher education institutions will be strengthened to create better conditions for pioneering research that has the potential of leading to breakthroughs. The Government is thus focusing on areas with strong research, such as life sciences.

Investments in research lead to higher productivity and increased knowledge and skills in industry and society in general, which contributes to long-term higher economic growth and increased prosperity in Sweden.

In 2010, just three countries (Israel, Finland and South Korea) invested a higher percentage of GDP in research and development than Sweden. Even if the debt crisis is forcing a number of European countries to hold back on research investments, international competition in the area is growing. Many countries are increasing their focus on research and development and are trying to persuade companies to locate their research investments within their own borders.

For Sweden to be able to maintain and further improve its position as a leading research nation, the Government believes that it is important to also continue to offer high quality research environments, well-educated labour and a business climate that provides good investment conditions for companies. The Government is therefore today presenting research and innovation investments to strengthen Sweden's potential for continued success in the international competition in research and industry.

#### Focus of investments

- Life sciences
- Strengthened basic funding for universities and other higher education institutions
- Frontier research
- Research facilities
- Research results to lead to new products and services

All in all, this means that the appropriations for research and innovation are being gradually increased by SEK 4 billion, with full effect in 2016. The overall breakdown can be seen in the table.

Table Investments in the Research and Innovation Bill

<i>SEK million</i>	2013	2014	2015	2016–
Strengthened conditions for universities and other higher education institutions	390	1075	1225	1600
- <i>Direct appropriations for universities and higher education institutions</i>	0	600	600	900
- <i>Frontier research</i>	175	200	250	300
Life sciences	455	545	540	600
- <i>SciLifeLab</i>	150	150	150	200
Research facilities	305	170	230	250

- <i>European Spallation Source (ESS)</i>	75	150	200	200
- <i>MAX IV</i>	0	20	30	50
Research results to lead to new products and services	250	480	620	780
- <i>The 'strategic innovation areas' instrument</i>	75	175	225	225
- <i>Research for industry and society</i>	50	100	150	300
Other*	335	425	445	770
<b>Total</b>	<b>1735</b>	<b>2695</b>	<b>3060</b>	<b>4000</b>

\* Other investments will be specified in the Budget Bill

#### Life sciences

Sweden conducts world-class life sciences research in a number of areas. Furthermore, the branch is one of the country's most research intensive, and the development and production of pharmaceutical products as well as the development of medical technology and biotechnology are areas in which Sweden is strong.

To strengthen Sweden's competitiveness in the future, the Government believes that a range of measures to promote high-class research across the entire spectrum from basic research to clinical research is needed. The investments involve a total of SEK 600 million and include:

<i>SEK million</i>	<b>2016</b>
Increased appropriation to Sweden SciLifeLab	200
Institute for sustainable process development and catalysis	100*
Coordination of clinical studies	50
Pharmaceutical development	50
Research on infection and antibiotics	75
Research on ageing and health	100
Clinical treatment research	75
Support for register-based research	50
<b>Total</b>	<b>600</b>

\* Figures concern 2013.

**SciLifeLab** is a scientific centre for large-scale gene and protein studies in molecular biology research and medical research. SciLifeLab is run by four seats of learning (Uppsala University, Stockholm University, Karolinska Institutet and the Royal Institute of Technology), but is intended to be a resource for all universities and other higher education institutions in Sweden. The investment in this year's Budget Bill will more than double the appropriations to SciLifeLab.

Strengthened basic funding for universities and other higher education institutions

Direct research appropriations to universities and other higher education institutions form the backbone of Swedish basic research. For successful research, it is central that there is major scope within academia to autonomously decide on the direction and priorities of research. However, the state must place high demands that the research being conducted is of a high quality.

The Government is therefore gradually increasing the annual research and education appropriations to universities and other higher education institutions by SEK 900 million in 2016. Allocation of the funds will be based on the quality of the research at each institution. In addition, funds are being allocated to research councils.

Frontier research

Swedish research has great breadth, but frontier research needs to be improved. All research is based on the work of individuals and their ability to see new connections, and the most talented individuals must be given the conditions to achieve results.

Research is an international activity and it should be possible for the leaderships at universities and other higher education institutions to recruit internationally prominent researchers. The Government therefore proposes an initiative to recruit top international researchers. In addition, special initiatives to promote outstanding younger researchers are proposed.

Research facilities

An important part of creating the conditions for outstanding high quality research is a top-class research infrastructure. Medicine, natural sciences and technology require advanced equipment and large research facilities where experiments can be conducted. Creating access to the most expensive infrastructure for research requires national coordination and financing.

The **European Spallation Source (ESS)** is currently planned for Lund. The facility can be likened to a gigantic microscope which, using neutron radiation, can determine the three-dimensional structure of an object. The facility will therefore be important for researchers in, for example, materials science and medicine. The ESS is one of the largest investments in research infrastructure that has taken place in Europe in recent decades; the investment cost amounts to almost EUR 1.5 billion (2008 price level). To secure Sweden's commitments with regard to the cost of

construction and operation of the ESS, the Government is proposing increased investment in the ESS.

Funding is also increasing to the world-leading synchrotron light source, MAX IV, which is under construction north of Lund and will be able to produce a finer and more focused beam of light than any other facility in the world. Like the ESS, MAX IV will be important for materials science, and for biotechnology and medicine. Together, the two facilities will constitute a research centre of absolute world class.

Research results to lead to new products and services.

Sweden has a long list of knowledge-intensive companies that benefit from research investments, but we can become even better at converting research into new products and services. The Government is therefore also implementing targeted investments in some areas of particular importance for industry and society. Funding is allocated on a long-term basis to high class research environments based on excellence requirements. These research investments are being made in a number of areas where society and industry have a long-term need of access to high skills, and where Swedish research is of high quality. The three areas that have been selected are a) mining, minerals and steel research, b) research into sustainable civil engineering and urban management, and c) research into wood, forest raw materials and biomass. These projects will be conducted in collaboration between academia and representatives of society and industry interests.

The Government is also developing the ongoing innovation programme of the Swedish Agency for Innovation Systems. The aim is to, together with industry, increase the utilisation of research results through the new 'strategic innovation areas' programme. The programme is directed at solving important societal challenges.

Furthermore, the capacity of industrial research institutes to contribute to the development and renewal of Swedish industry will be further strengthened. The Government is also acting to develop the innovation offices at the higher education institutions.

<i>SEK million</i>	<b>2016</b>
The 'strategic innovation areas' instrument	225

Research for industry and society (mining, minerals and steel research; research into sustainable civil engineering and urban management; and research into wood, forest raw materials and biomass)	300
Funding to RISE (industrial research institutes)	125
Test and demonstration facilities	50
Assessment of cooperation	60
Further development of innovation offices	20
<b>Total</b>	<b>780</b>

#### Previous investments

The Government research and innovation bills have involved – and will involve – historically large additional resources to Swedish research with a clear focus on increased quality. The previous Research and Innovation Bill from 2008 permanently raised appropriations by SEK 5 billion annually, most going to the research areas medicine, technology and the climate. The investments also contained an innovation package. The investments being presented today are on top of the previous investments.

