



Ministerium für Innovation,
Wissenschaft, Forschung
und Technologie des Landes
Nordrhein-Westfalen



Düsseldorf, 12 June 2007

**Welcoming address from
Dr Michael Stückradt,
Permanent Secretary,
Ministry of Innovation, Science, Research and Technology
of the State of North Rhine-Westphalia**

**"Taking over the lead – NRW on the way to becoming Germany's
prime state of innovation**

**METEC Conference
12 June, 2007**

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Address,

I would like to thank you for inviting me to today's meeting and to convey to you the greetings of the Minister, Professor Pinkwart. The government of North Rhine Westphalia is delighted to see the major international fairs, GIFA, METEC, Thermprozess and NEWCAST present themselves once again on the *Messe Düsseldorf* fair grounds, thus impressively underlining the leading position of Germany and North Rhine-Westphalia in the field of metallurgy.

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I would like to outline and explain several aspects of the innovation policy of our state which is designed to enable us to achieve our objective of becoming the N° 1 state of innovation in Germany by the year 2015.

At the beginning, however, let me bring to your attention some essential figures that illustrate the significance of the metal industry for North Rhine-Westphalia:

47 per cent of all German metal-producing and -processing employees work in North Rhine Westphalia – i.e. 125,000 people. Another 196.000 (33 per cent) are concerned with manufacturing metal goods; these two sectors supply almost all industries with key products.

In the area of systems engineering, too, North Rhine-Westphalia is home to a number of global players which have substantially shaped steel technology by innovations over the last years.

They have developed into world market leaders and will be showcasing innovative solutions at this fair.

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New and improved materials are explicitly said to have a promising future for many industrial sectors. Nationally and internationally they are classed as the strategic R & D fields of the future, and they hold enormous potential for numerous application areas and product innovations.

In Japan and in Germany, Delphi Studies have shown that experts consider applications developed by materials researchers to be of paramount importance to the economic development.

The State government of North Rhine-Westphalia has made this technology field a top priority of its innovation policy and it will take great efforts to support that sector of research in the future.

According to the recent Global Competitiveness Report released by the World Economic Forum, German companies have again established themselves at the top among 117 states in numerous lines of business and rank 1st in terms of innovation capacity, international market presence and staff training and education.

But for the macroeconomic competitiveness the picture is quite different: Germany ranks 15th, lagging far behind its major competitors. This is due to the fact that the framework conditions for innovation are not yet in order and Germany's innovative capacity is as yet only average in Europe.

In North Rhine-Westphalia traditional raw materials have lost in importance while new raw materials, i.e. knowledge and ideas, are increasingly taking their place. Our chance of growth, quality of life and prosperity within a globalizing world lies in the variety of novel ideas and in the translation of those ideas into innovative solutions. Future-oriented jobs result primarily where research and development produce new knowledge and where companies turn that knowledge into new products and processes.

Therefore, we have to concentrate all our efforts on mining the new raw material, knowledge, and tapping it for innovations. We will have to generate new knowledge much faster than our competitors. And we must be faster and better in translating it into social improvements and marketable innovation. This is our only chance of securing progress and prosperity.

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In terms of knowledge, North Rhine Westphalia is very rich in this raw material: We have the largest concentration of universities in Europe, and by far the major part of Germany's students are pursuing their studies in North Rhine-Westphalia. We are now reaping the benefits of this raw material: already today, almost 40 per cent of the workforce in North Rhine-Westphalia are employed by companies that have been established over the last ten years.

But these positive trends are by far not strong enough yet. Some of the key indicators of North Rhine-Westphalia's innovative power

remain to be strengthened. Just take the highly relevant indicator, "investments in research and development" in relation to the GDP, the so-called R & D quota. Here our achievements are clearly below the federal average and unfortunately we have even fallen back further behind other states such as Bavaria and Baden-Wurttemberg in recent years. Moreover, irrespective of considerable progress in research, experts have identified a major gap when it comes to translating research results into innovative practice in industry. In addition, experts have stressed that there is an urgent need for North Rhine-Westphalia to catch up with structural changes and creating a climate favourable to innovation.

Therefore we have set ourselves a goal that is as clear as it is ambitious: we want to turn North Rhine-Westphalia into Germany's number 1 state of innovation by 2015. Considering that NRW is by far the most populous state in Germany, it is our aim that, by 2015, our state will account for the majority of patents granted and for the largest number of people employed in the R & D sector. That ambitious goal is a survival strategy for our state.

If we want to succeed in our efforts to catch up, we must hurry to achieve a trend reversal in North Rhine-Westphalia as a centre of innovation.

That's why our political course follows a precise scheme:

- improving framework conditions for the key operators of innovation, namely science and industry
- making a firm commitment to excellence and top research
- promoting competition for quality, and

- **concentrating our support on such areas where we have a real chance of reaching the top.**

That goal can be accomplished only by a show of strength. But we can make it. For North Rhine-Westphalia definitely is a powerful location: Now as before we are the major economic centre of Germany. We have distinct industrial regions, a highly competitive small and medium-sized business sector with many 'hidden champions' as we use to call them, and a well developed infrastructure.

The same applies to new materials and above all to the steel industry in our state.

Irrespective of the restructuring and adjustment processes the steel industry has been undergoing, North Rhine-Westphalia is still Europe's number one steel centre. Recent economic data about companies in North Rhine-Westphalia show that these firms have been very successful, and we expect this trend to continue over the next years. This is largely due to the fact that the quality of steel products has been steadily improved.

The developments in the steel industry are also supported by a strong research environment: if we look at our universities alone, we find that materials technology is a field of study at many of them. The strongest of them is the RWTH Aachen, where 31 institutes and chairs have jointly set up a materials forum. Furthermore, there are several institutes at the Jülich Research Centre in which the RWTH is also involved. I could easily carry on with the list. I

could mention Bochum, Dortmund, Duisburg-Essen and still I would have left out many.

I might also list best practice examples of cooperation between researchers and industry: the Dortmund-based OberflächenCentrum (Dortmund Surfaces Centre, DOC), where the ThyssenKrupp company cooperates with two Fraunhofer Centres in the field of research on steel, or simply take the *Zentrum für strategischen Korrosionsschutz* (Centre for Strategic Corrosion Protection) in Iserlohn. Again, this is an incomplete enumeration.

By the way, in my opinion the same applies to non-university research facilities: Fraunhofer, Helmholtz and especially of course the *Max Planck Institut für Eisenforschung* (Max Planck Institute for research on iron, steel and related materials) which traditionally have set great store by the transfer of research findings.

Universities are key protagonists on our way to becoming the prime state of innovation. To enable them to accept that role and develop their strengths, they primarily need two things: Money and autonomy. In North Rhine- Westphalia they get both.

Money: money is provided in the context of what we call the "pact for the future", by which we guarantee funding of our universities in the long run. In addition, universities are entitled to levy tuition fees to enable them to considerably improve study conditions and teaching thanks to these additional revenues.

And what about autonomy? Autonomy is ensured by the new regulatory framework for our universities. The novel 'Higher Education Autonomy Act' starts a new era for our universities. The Act pro-

vides an opportunity for ambitious and efficient universities in North Rhine-Westphalia to become even faster, more flexible and better in future.

In the future, universities shall be able to build up assets and gain revenue of their own, they can also set up enterprises and acquire an interest in companies or make their own contracts with industry partners without being subject to government control. Innovative companies will find it easier to set up and finance joint research facilities and laboratories on a university campus. We are convinced we have thus significantly improved the conditions for innovation transfer.

I am convinced that, on the basis of close cooperation, universities, research institutions and industry will succeed in improving the attractiveness of North Rhine-Westphalia as a centre of innovation.

We need more top research in North Rhine-Westphalia. So when promoting research we have opted for concentrating the resources: That is our approach to making sure that research in the key fields is carried out at outstanding centres. We will promote this process by specifically supporting the development and expansion of first-class research facilities and institutes. These facilities have to meet international standards and must be able to tap further national and international research funds thanks to their own services and research activities.

ICAMS

Let me mention another institute as an example for new and promising approaches. It was initiated by the *Max Planck Institut für Eisenforschung*, the Max Planck Institute for research on iron, steel and related materials, and will soon start operations at the Ruhr University of Bochum, namely the ICAMS. This institute is a joint venture of MPIE, the Bochum Ruhr University, four industry partners and the RWTH Aachen. The State government sponsors this project with about €12 million.

This research institute will join two communities which so far have conducted their research mainly on their own: the material engineers community on the one hand and the community of physicists, chemists and mathematicians on the other. The researchers will do both pure and application-oriented research using simulation methods supported by mainframe computers. The ICAMS project will be carried out in close cooperation with the Jülich Research Centre.

By supporting ICAMS we consistently apply a basic principle of our innovation policy: releasing creativity and joining forces. ICAMS is a model of the State government's interdepartmental approach to giving a strong impetus for more top research, better technology transfer and the formation of strategic clusters in promising technology fields.

In order to reach that goal we need a comprehensive and tailor-made innovation policy. That's exactly how the innovation strategy of the State government is designed. It includes all protagonists and all steps in the process of innovation - starting with the idea

and leading to the product. Moreover, it underlines our efforts to lobby the federal government to join us in creating a research-friendly environment and climate. We will press the federal government to remove ideologically motivated impediments to important technology fields. Examples include "green" genetic engineering, stem cell research and also nuclear technology. Here we need definitely more research-friendly conditions, which is of crucial importance to North Rhine-Westphalia as a centre of innovation. What matters most is: Our strategy specifies how we want to make progress with the central issues of innovation in North Rhine-Westphalia - be it basic research, technology transfer, formation of clusters or marketing campaigns designed to promote the Innovation State.

Just one more word about the State government's strategy for creating clusters.

Networks - this is a key concept of our cluster strategy. Today, both economic progress and the development of new technologies are achieved by networks. That's exactly where our cluster strategy starts: first, by establishing and promoting selected networks in different regions of our State. And second, by encouraging stakeholders to join forces in trade- and technology-related groupings where this seems useful and promising. This is what we will do over the next three years in 16 lines of business and technology fields that have a particularly large potential for growth and are of vital importance to the economic development of this State. This includes new materials, nano-, micro- and biotechnologies and, of course, the chemical sector. You see, and this is my conviction, there are many areas where your sector can join in and from which it can greatly benefit. That's what it is all about: Clusters are not an

end in themselves. All depends on whether they succeed in developing strengths and joining forces. Their success first and foremost hinges on the quality of the cooperation projects they initiate.

A successful cluster policy needs clear financing rules: from now on the North Rhine-Westphalia government, as a general rule, will provide funds only in the context of competitions, and those funds will be allocated only in the form of knock-on financing. The financial support is subject to clear criteria:

- There have to be clear, manageable and measurable goals that focus on the needs of companies, universities and higher education institutions and that have been agreed by the protagonists involved before they apply for a grant.**
- All appropriations are subject to a monitoring and evaluation of the output.**
- All clusters in North Rhine-Westphalia will be evaluated on a three-year term and will be adjusted if necessary.**

Successful clusters need more than clear financing criteria alone, they also need professional management. Only when both come together, clusters will generate real added value for companies and universities, for industry and research. Added value means economies of scope which are achieved by companies sharing resources or using the cluster as a forum for getting in touch with each other and launching new cooperation projects. And added value also means gaining information for universities, thus enabling them to

learn faster and more precisely by which challenges industry is driven, what kind of scientific expertise is needed and which contribution researchers can make towards innovative solutions.

To shape the future in North Rhine-Westphalia by innovation, we need the committed involvement of the companies, we need top research, we need universities which increasingly focus on the transfer of their findings. And we also need marketing campaigns to promote North Rhine-Westphalia's strengths as a location for innovation and business.

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I hope with these remarks I could give you some insight into the new innovation policy of the North Rhine-Westphalia government.

If we manage to implement all those measures I have outlined, then we have a good chance of becoming a top player both nationally and internationally, and of tapping new potential for innovation for our State, thus securing a strong position in international competition.