

*KEY NOTE SPEECH - SET 2009, Vice-Minister Dr. Jens Baganz,  
Ministry of Economic Affairs and Energy of the State of North  
Rhine-Westphalia, 01.09.2009 - Es gilt das gesprochene Wort.*

**Professor Riffat,**

**Professor Romey,**

**Director Li,**

**ladies and gentlemen**

- **May I on behalf of the patron, Minister Christa Thoben, and the state government of North Rhine-Westphalia, welcome you at the 8th International Conference on Sustainable Energy Technologies.**
- **We are proud that, after having been held in Seoul in 2008, Santiago de Chile in 2007, Vicenza in 2006 and Shandong in 2005, such a prestigious conference has now come to Aachen.**
- **The city has a very long experience in the use of energy:**
  - **The Romans knew how to use the hot springs not only for healing but also for heating purposes.**
  - **Until the end of the last century, black coal was mined in Aachen and the surrounding parts. For decades, this helped maintain wealth in the region.**
  - **And today, with numerous innovative enterprises, some of them spun off from universities, Aachen possesses a unique blend of business and science and is at the cutting edge in many areas of the energy sector.**

KEY NOTE SPEECH - SET 2009, Vice-Minister Dr. Jens Baganz,  
Ministry of Economic Affairs and Energy of the State of North  
Rhine-Westphalia, 01.09.2009 - Es gilt das gesprochene Wort.

- Aachen is host to *Energy Hills e.V.*, the largest cross-border 'energy cluster'. Energy Hills concentrates the knowledge, skills and competencies of forty business corporations and the R&D capacities of five leading German, Dutch and Belgian universities, another three higher education institutions and three major energy research establishments. A number of cluster members, among them several companies and research establishments from North Rhine-Westphalia, have joined together and applied to be selected for the Knowledge and Innovation Community, 'Sustainable Energy' as part of the activities of the European Institute of Innovation and Technology. The State Government actively backs this application, and we would be glad if we could have a KIC here in North Rhine-Westphalia, in Aachen.
- The Aachen region is one of several areas in North Rhine-Westphalia where the energy sector is doing brilliantly.
- Altogether, the energy industry is among the strongest sectors of the NRW economy, in terms of both energy conversion and consumption. No other German state produces and uses more energy. Our power stations account for just under a third of the electricity generated nationwide. Forty per cent of industrial electricity consumers are based in North Rhine-Westphalia. Extending beyond the state borders, the power grid is part of a network where electricity is exchanged across even national boundaries.

*KEY NOTE SPEECH - SET 2009, Vice-Minister Dr. Jens Baganz, Ministry of Economic Affairs and Energy of the State of North Rhine-Westphalia, 01.09.2009 - Es gilt das gesprochene Wort.*

- One of the key tasks for the State Government is therefore the creation of the best possible conditions which enable business to develop further.
- With this in view, we launched our energy and climate protection strategy in the spring of 2009 to combine lasting economic growth and the reduction of carbon dioxide emissions. We are going to shave around 30 per cent off the 2005 CO<sub>2</sub> emission levels by 2020.
- To achieve this, we are going to
  - reduce the consumption of energy;
  - increase the percentage of renewable energy;
  - introduce greater efficiency into, the generation of electricity from fossil sources;
  - explore, develop and bring to the market the necessary technologies;
  - drive forward the international transfer of energy technology.
- North Rhine-Westphalia, already a key centre of energy and among Germany's major business locations, is therefore a driving force when it comes to a modern energy and climate policy.
- We are going to show that economic growth and climate protection are entirely compatible.
- It is of course very ambitious to stick to this in spite of the most dramatic financial and economic turmoil since World War II.

*KEY NOTE SPEECH - SET 2009, Vice-Minister Dr. Jens Baganz, Ministry of Economic Affairs and Energy of the State of North Rhine-Westphalia, 01.09.2009 - Es gilt das gesprochene Wort.*

- Some might think, less energy consumed means less carbon dioxide, in other words, good for our climate.
- However, those who believe that the economic crisis will deliver medium or long term benefits to climate protection need to think again!
- Studies have shown that the current lower electricity consumption will have precisely no long-term effects because, as soon as the economy takes off again, consumers will surely 'catch up', industrial users in particular.
- Indeed, meeting the climate protection targets will become more difficult if government and industry fail to implement the appropriate measures.
- Seeing as businesses have trouble getting a loan these days, there is a danger that necessary spending projects (electricity farms, for example) have to be put off or scrapped altogether.
- This would mean that older, conventional power stations continue to operate, with all the adverse effects that would have on CO<sub>2</sub> figures and the climate. Older plants, after all, put out a lot more carbon dioxide than new systems with state-of-the-art technology.

Ladies and gentlemen

- That is also why modern energy technologies are a major growth propellant for our business sector:

*KEY NOTE SPEECH - SET 2009, Vice-Minister Dr. Jens Baganz, Ministry of Economic Affairs and Energy of the State of North Rhine-Westphalia, 01.09.2009 - Es gilt das gesprochene Wort.*

industries centring on the production and rational use of energy account for 44 per cent of turnover in this country.

- According to a recent McKinsey study, energy-efficient methods and technologies can be expected to help increase turnovers by more than 10 per cent in sectors such as transport, building services and plant engineering and renewable energy.
- There is a lot of market potential here that we need to exploit.
- With its unique blend of global players, SME, small innovators and outstanding research establishments, North Rhine-Westphalia is the ideal seedbed for the development of technologies that represent the way forward.
- This combination, perfect for encouraging innovation, gives us a unique selling point over other European regions.
- In order to put it to the best possible use, the NRW Government helps stakeholders by supplying professional 'cluster' management services.
- Under the umbrella of 'EnergieRegion NRW', more than 3,300 businesses and institutions have joined forces. Small and medium-sized enterprises account for three quarters of those involved. Also taking part are 64 universities, 107 institutes and 94 sectional groups. The cluster's various working groups and networks employ some 5,200 people. Information on cluster activities is supplied to 30,000 recipients on a regular basis.

*KEY NOTE SPEECH - SET 2009, Vice-Minister Dr. Jens Baganz, Ministry of Economic Affairs and Energy of the State of North Rhine-Westphalia, 01.09.2009 - Es gilt das gesprochene Wort.*

- The aim is to remain the Number One energy region well into the future, and raise even further North Rhine-Westphalia's international profile as an outstanding energy location.
- The cluster's management acts as a platform for the exchange of information, communication and co-operation amongst the partners. Activities focus on driving forward innovation processes in North Rhine-Westphalia, initiating co-operation and strategic alliances, and accelerating the introduction into national and international markets of innovative products.
- By improving existing strengths and identifying and taking up new trends and developments, strong points and core competencies must be developed with a view to achieving success in the market.
- Providing management services to the cluster is only one of many measures the NRW Government carries out in a bid to create a decent regulatory and structural framework for the industry. Our task, on balance, is to ensure that energy is available from secure, affordable and climate-friendly sources.

Ladies and gentlemen,

- one of the sectors with the greatest potential for growth is the energy industry itself, both when it comes to renewable energy sources and generating electricity from fossil fuels.
- From an energy and climate policy point of view, it is essential that the money is spent on the most efficient and cutting-edge power plant technology.

KEY NOTE SPEECH - SET 2009, Vice-Minister Dr. Jens Baganz,  
Ministry of Economic Affairs and Energy of the State of North  
Rhine-Westphalia, 01.09.2009 - Es gilt das gesprochene Wort.

- The average energy conversion efficiency of those thermal power stations in Germany that use fossil fuels is 41,4 per cent (gross value).
- Around the world, North Rhine-Westphalia is known as the region with the most modern high-efficiency power-plant technology. Niederaussem, not far from here, is the site of the currently most advanced lignite power plant, with an efficiency of 43 per cent (net value). It would be technically possible to achieve efficiency exceeding 47 per cent in a black coal power station and more than 50 per cent in a brown coal plant that utilises an integrated drying technique.
- In particular, we are aiming at the construction and modernisation of combined heat and power facilities. Operating these plants at high annual capacity utilisation will result in high efficiency rates.
- CHP is particularly suited to industrial plants where the heat and steam requirement is high. We need to put potentials to full use.
- Given its long tradition of mining and generating electricity from domestic coal, North Rhine-Westphalia has lots of experience in the use of firedamp gases, including especially methane which is about 21 times more harmful to the climate than carbon dioxide.
- In North Rhine-Westphalia, colliery gases are used extensively to generate electricity and heat. Without it, the equivalent of 4.6 million tonnes of CO<sub>2</sub> would be released into the air.
- Such technology from North Rhine-Westphalia is very much in demand around the globe. Existing co-

KEY NOTE SPEECH - SET 2009, Vice-Minister Dr. Jens Baganz,  
Ministry of Economic Affairs and Energy of the State of North  
Rhine-Westphalia, 01.09.2009 - Es gilt das gesprochene Wort.

operation projects and agreements - such as the 2005 Memorandum of Understanding with Shanxi Province in China - are used to sound out the shared potential for co-operating in the mining sector and expanding existing business activities.

- When it comes to colliery gas, many Chinese provinces have huge potential. With their specific technology, knowledge and skills, firms from North Rhine-Westphalia are well suited for co-operation with their Chinese partners, particularly when it comes to the extraction and utilisation of firedamp gases.

Ladies and gentlemen,

- It is precisely because we in North Rhine-Westphalia have a somewhat unique power generation industry that EU decisions on emissions trading give us a bit of a headache. North Rhine-Westphalia, where over a third of all electricity used in Germany is generated, where industries that use lots of energy are based, such as steel, aluminium and cement producers, is hit particularly hard by the Second Energy and Climate Change Package from Brussels.
- We have been pushing our interests, North Rhine-Westphalia's interests, at every level. We have successfully stated our position in the *Bundesrat*, Germany's Senate, and we have talked to Federal MPs in Berlin and Euro MPs in Brussels. We have also hosted meetings to tell people about the adverse effects of the rules, then planned, on the emissions trade during the Third Trading Period.

*KEY NOTE SPEECH - SET 2009, Vice-Minister Dr. Jens Baganz, Ministry of Economic Affairs and Energy of the State of North Rhine-Westphalia, 01.09.2009 - Es gilt das gesprochene Wort.*

- Despite a measure of success, the overall outcome has been less than satisfactory. However, we shall not let go. The decisions as they stand leave a lot to be answered, for instance those issues that relate to 'energy-intensive' industries or the distribution of revenue from the emissions trade. We will be going all out to have detailed implementation made friendlier to both industry, and therefore to North Rhine-Westphalia, and the climate.
- Another European issue with significant impact on North Rhine-Westphalia is the Carbon Capture and Storage Directive.
- The jury is still out on whether or not the CCS technology will turn out to be the best technical and economic solution for a power station that generates little or no CO<sub>2</sub> emissions. But it is certainly an avenue we need to pursue. One day, CCS might be used worldwide, at least as a stopgap technology, and we would then want to be amongst the leaders in this field, being able to offer the right products, knowledge and skills.
- To this end, we, the business, research and political communities, must promote the subject with greater vigour and provide the population with all the facts.
- Because otherwise ignorance will give rise to unspecified fears, potentially blocking off some promising technological options, something we have, unfortunately, witnessed before.
- We need to complement this by driving forward other alternatives. The 700-degree technology, for example, enables us to shave a quarter off the carbon dioxide

*KEY NOTE SPEECH - SET 2009, Vice-Minister Dr. Jens Baganz,  
Ministry of Economic Affairs and Energy of the State of North  
Rhine-Westphalia, 01.09.2009 - Es gilt das gesprochene Wort.*

put out by today's power stations, whilst increasing efficiency to about 50 per cent. Experts reckon that this is a precondition for the application of CCS technology if we want to compensate at least partly for the typical loss of efficiency.

- The largest project of this kind, the Component Test Facility for a 700°C Power Plant (COMTES 700), was launched in 2005 here in North Rhine-Westphalia. The E.ON corporation, too, plans to bring a power station which utilises the 700-degree technology on line in 2015.

Ladies and gentlemen,

- In states dominated by energy and industry - and North Rhine-Westphalia is such a state - we share the task of proactively engaging, when it comes to technology and business, in efforts which increase, rather than reduce, our options. The objective is to pave the way for something that, whilst not yet marketable from today's perspective, could one day deliver strategic benefits to our energy, technology and industry policy.
- As far as the North Rhine-Westphalia Government is concerned, the fuel-cell and hydrogen technology falls under that category.
- Under our Energy and Climate Protection Strategy, we are funding 'NRW Hydrogen Hyway', a beacon project involving the development of a hydrogen infrastructure from Aachen to the Ruhr.

*KEY NOTE SPEECH - SET 2009, Vice-Minister Dr. Jens Baganz,  
Ministry of Economic Affairs and Energy of the State of North  
Rhine-Westphalia, 01.09.2009 - Es gilt das gesprochene Wort.*

- **Moreover, several large cities are trialling hydrogen-fuelled buses for their public transport systems.**
- **The main aim is to establish hydrogen as a competitive fuel and to achieve marketability by trialling and improving the vehicles under everyday conditions.**
- **This and other fuel cell and hydrogen projects will be comprehensively addressed during the World Hydrogen Energy Conference, to be held here in North Rhine-Westphalia, in the city of Essen in 2010. And let me use this opportunity to invite you all to come to the conference.**

**Ladies and gentlemen,**

- **Whether hydrogen is produced from fossil or renewable sources, North Rhine-Westphalia's industries and their products are at the cutting edge - even on a worldwide scale.**
- **Whether biogas, geothermal or wind energy - products from North Rhine-Westphalia stand for quality and state-of-the-art technology.**
- **Two examples, brief and to the point:**

**One in two wind turbine transmissions used worldwide is manufactured in North Rhine-Westphalia.**

**And: In North Rhine-Westphalia, we operate the world's largest inland trial wind farm, and we intend to build one of the largest experimental sites in the Ruhr Valley.**

*KEY NOTE SPEECH - SET 2009, Vice-Minister Dr. Jens Baganz,  
Ministry of Economic Affairs and Energy of the State of North  
Rhine-Westphalia, 01.09.2009 - Es gilt das gesprochene Wort.*

**Ladies and gentlemen,**

- **Sustainable energy technologies are as important to producers of energy as they are to the users, whether in industry, private environment or the public sector.**
- **Innovative mechanical and plant engineering technology in particular enables industry to save huge amounts of energy used during production.**
- **In the private home, low-energy techniques and materials are crucial to energy-efficient improvement.**
- **Transport, especially road traffic, is an issue on which I would like to expand a bit, seeing as the sector accounts for about a quarter of total energy consumption.**
- **Experts have identified significant growth potential for high-efficiency and low-emission car propulsion systems. We, the NRW Government, share this view.**
- **This month, we will therefore launch the 'Elektromobilität NRW' project, with a view to becoming Europe's Number One testbed for e-powered vehicles.**
- **Out of 130 applications, the Rhine/Ruhr region, Aachen and the Münster Competency Centre were selected along with seven other German regions. They can now enjoy support from Federal funding programmes.**
- **North Rhine-Westphalia is going to contribute an extra 60 million euros, for research and development in this field.**

*KEY NOTE SPEECH - SET 2009, Vice-Minister Dr. Jens Baganz,  
Ministry of Economic Affairs and Energy of the State of North  
Rhine-Westphalia, 01.09.2009 - Es gilt das gesprochene Wort.*

**Ladies and gentlemen,**

- **Since we are in Aachen today, let me tell you this: another category of energy users, the local councils, are currently benefiting from Federal funds, the so-called Second Economic Stimulus Package.**
- **Around 2.4 billion euros have been made available to towns and cities for making existing buildings energy-efficient.**
- **By providing comprehensive information, the North Rhine-Westphalia Government assists councils with the implementation of the stimulus package, so that local contractors can benefit as soon as possible.**
- **Successful combination of climate protection and economic growth is not solely down to funding programmes, however. A 25pc reduction of greenhouse gases will pay off within a short time and is a tool for long-term cost efficiency.**
- **Any spending in this area will therefore meet two key requirements of successful economic stimulation: it serves a purpose and it is additional, or at least funding that is brought forward, a typical feature of economic stimulation.**

**Ladies and gentlemen,**

- **Using energy-efficiency technologies will help our industries remain competitive.**

*KEY NOTE SPEECH - SET 2009, Vice-Minister Dr. Jens Baganz,  
Ministry of Economic Affairs and Energy of the State of North  
Rhine-Westphalia, 01.09.2009 - Es gilt das gesprochene Wort.*

- **Business enterprises and research establishments in North Rhine-Westphalia are well placed to stand their ground. Yet this 'pole position' is no reason for complacency.**
- **We need, especially now, investment and innovation in business, along with close co-operation with the research community.**
- **This conference is an excellent opportunity for intensifying this close co-operation at the international level as well. Because, at the end of the day, wherever in the world we are, we will manage to master the global challenges we are facing only by working together to identify the proper solutions.**
- **On that note, let me wish you inspiring discussions and some creative ideas.**
- **Thank you for your attention.**