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## **RWE, BASF and Linde: Breakthrough in capturing carbon from flue gas of coal-fired power plants**

- **New technology saves 20 percent on energy input and clearly reduces solvent consumption**
- **Key to climate-compatible coal-based power generation**

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Since 2009 RWE, Linde and BASF have been testing a new technology for separating carbon dioxide (CO<sub>2</sub>) from flue gas in a pilot plant at RWE's Niederaussem power station near Cologne. The results of the practical test are now available: Compared to processes commonly run today, the innovative technology that captures CO<sub>2</sub> by means of new chemical solvents can reduce energy input by about 20 percent. The new solvents also feature clearly superior oxygen stability, which reduces solvent consumption significantly.

"We are pleased with this breakthrough, which we have achieved by cooperating closely with BASF and Linde. By enhancing efficiency and accordingly reducing costs, we have created a critical success factor for carbon capture technology, which in our view is key to climate-compatible power generation from coal," underlines Dr. Johannes Heithoff, Vice President, Research and Development, RWE Power. "The practical tests met all of the expectations we had after lab-testing the new solvent. This paves the way for scaling up the process to large power plants," says Dr. Andreas Northemann, Business Manager, Global Gas Treatment, BASF Intermediates division. "We are very satisfied with the results of the practical tests, too," says Dr. Aldo Belloni, Member of the Executive Board of Linde AG. "Further development of CO<sub>2</sub> capture technology for treating power plant waste gases is among the focal points of our activities aimed at clean energy generation."

The three companies started up the pilot plant in August 2009; it is part of the Coal Innovation Center of RWE Power. BASF is testing the newly developed carbon capture process based on improved solvents in the course of this cooperation announced in 2007. Linde was responsible for pilot plant engineering and construction.

Now the partners are working on solutions for demonstration and large-scale power plants. First demonstration plants are scheduled to come on stream in 2015, and CO<sub>2</sub> capture is expected to be used commercially in coal-fired power stations by 2020. This technology should allow more than 90 percent of the carbon dioxide contained in the waste gas of a power plant to be captured for subsequent sub-surface storage or for chemical transformation, for example to give fertilizers.

RWE Power will spend about nine million euros on the development project described above. The German Federal Ministry of Economics and Technology contributed about four million euros to the cost of the pilot plant.

#### **About RWE Power**

RWE Power is Germany's biggest electricity producer. The opencast mines, power stations, upgrading facilities, research projects, training centres and administrative units have a headcount of more than 17,000. With power-plant capacity of a good 33,000 MW, the company makes a contribution to RWE's wide energy mix consisting of lignite, hard coal, nuclear energy, gas and renewables. RWE Power is investing billions in the construction of new, climate-sparing power plants and in the development of even more efficient, environmentally friendly technologies for the power generation of the future. Please find further information about RWE Power online at [www.rwe.com](http://www.rwe.com)

#### **About The Linde Group**

The Linde Group is a world leading gases and engineering company with almost 48,000 employees working in more than 100 countries worldwide. In the 2009 financial year it achieved sales of EUR 11.2 bn. The strategy of The Linde Group is geared towards sustainable earnings-based growth and focuses on the expansion of its international business with forward-looking products and services. Linde acts responsibly towards its shareholders, business partners, employees, society and the environment – in every one of its business areas, regions and locations across the globe. Linde is committed to technologies and products that unite the goals of customer value and sustainable development. For more information, see The Linde Group online at <http://www.linde.com>

#### **About BASF**

BASF is the world's leading chemical company: The Chemical Company. Its portfolio ranges from chemicals, plastics and performance products to agricultural products, fine chemicals as well as oil and gas. As a reliable partner BASF creates chemistry to help its customers in virtually all industries to be more successful. With its high-value products and intelligent solutions, BASF plays an important role in finding answers to global challenges such as climate protection, energy efficiency, nutrition and mobility. BASF posted sales of more than €50 billion in 2009 and had approximately 105,000 employees as of the end of the year. BASF shares are traded on the stock exchanges in Frankfurt (BAS), London (BFA) and Zurich (AN). Further information on BASF is available on the Internet at [www.basf.com](http://www.basf.com).

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