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**DLR enters into partnership with US research institute**

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Cooperating for solar power

On 25 November 2008, the National Renewable Energy Laboratory (NREL), the largest American research institute for renewable energies, and the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) announced that they have entered into a partnership. The partners aim to further increase the durability and efficiency of facilities for solar thermal electricity generation. This raises the cooperation between the two research institutions, both international leaders in the field, to a new level.

Concentrating solar thermal power plants focus radiation from the sun to produce heat, which is then used to generate electricity in the same way as in a conventional power plant. Experts predict that this technology will play an increasingly important role in electricity generation in the years to come. In the US and Europe, especially in Spain, commercial plants already exist that feed hundreds of megawatts of power into the grid. European and American companies are among the market leaders in this area of technology.

**Reliable forecasting for investors**

On the occasion of the signing of the contract, Professor Johann-Dietrich Wörner, Chairman of the DLR Executive Board, said: "Both NREL and DLR have decades of experience in developing and building concentrating solar thermal power plants. This partnership will enable both of our institutions to expand our expertise in the future, and to develop innovative and efficient components for power plants more quickly and reduce their time-to-market."



Scientists at NREL and DLR want to set up joint projects, especially with an eye to improving the durability of such plants and further increasing their efficiency. Years of experience with the operation of solar thermal power plants have shown that their operational characteristics depend to a very large extent on individual components of the power plant, such as mirrors or absorbers. By providing reliable forecasts of the operational characteristics and service life of these components, the risk for investors can therefore be reduced. Moreover, the profitability of the plants will increase if these components can remain in service for many years while maintenance costs are kept low.

#### **Quality standards and energy weather forecasting**

The two institutes specifically plan to collaborate in the following research areas: They want to set quality standards for solar thermal power plants and individual components thereof. Furthermore, they plan to continue the development of thermal stores, enabling electricity generation at night or in cloudy weather as well. Finally, they also want to improve "energy weather" forecasting. Power plant operators can use this information to improve their estimates of the power that their plants will generate, based on the amount of solar radiation received over a period of several days. If required, more topics for collaboration can be added to the new agreement at a later time.

NREL is the largest American research institute for renewable energies, and works on behalf of the US Department of Energy. Like DLR, the institute has years of experience in developing solar thermal power plants. DLR's Institute of Technical Thermodynamics (DLR-Institut für Technische Thermodynamik) has been conducting intensive research in this area over the past few decades, and it has taken into commission several test plants in Almería in Spain. In addition to this, the institute has been advising a large number of its industrial partners on the construction of such plants, as well as testing their economic viability.

#### **Related Contacts**

##### **Dorothee Bürkle**

German Aerospace Center  
Corporate Communications, Editor, Energy  
Tel: +49 2203 601-3492  
Fax: +49 2203 601-3249  
E-Mail: [Dorothee.Buerkle@dlr.de](mailto:Dorothee.Buerkle@dlr.de)

##### **Bernhard Milow**

German Aerospace Center  
Energy Programme Director  
Tel: +49 2203 601-3655  
Fax: +49 2203 601-3797  
E-Mail: [Bernhard.Milow@dlr.de](mailto:Bernhard.Milow@dlr.de)

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