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Energy from the desert: "We have the technology, the concepts and the contacts"

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Prof. Hans Müller-Steinhagen of the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) has been elected to chair the International Advisory Committee of the Desertec Industry Initiative (Dii). The panel will support Dii in establishing sustainable power generation capacity in the desert in northern Africa and in the Middle East. In an interview, Prof. Müller-Steinhagen explains why he believes in this project.

Dii was founded in October 2009, and it established a framework for sustainable and climate-friendly power generation capacity in the desert in northern Africa and Middle East as its objective.



Prof. Müller-Steinhagen

Interview by Dorothee Bürkle

You have just been elected to chair the first Dii Management Committee. What has the latter achieved since its inception?

Müller-Steinhagen: A great deal, though it is not immediately obvious: the Dii offices in Munich have opened, two CEOs - Paul von Son and Rainer Aringhoff – have been appointed, and staff members have been recruited. In addition, numerous meetings have been held with representatives from politics, trade associations and industry in the appropriate countries. The number of companies involved with Dii has increased to 19 full and 16 associate members. The crucial point is that many of these members are from other countries, so Dii will not remain a purely German initiative.



Solar tower power plant: electricity generation using sunlight

How is it that you are convinced of Desertec's success?

Müller-Steinhagen: I am convinced of Desertec's success because the technology works. It is a concept based on realistic considerations; we have not assumed any technological leaps. I also believe that the financial framework is feasible. Personally, I see political implementation as the larger hurdle: the question is whether we will be able to implement the corresponding contracts. Transmission of electricity through several countries and the construction of new electricity grids have to be negotiated. I am optimistic that we will receive generous support from North African governments, here in Europe and the EU. To sum it up: I am cautiously optimistic.

When will the first power station be built?

Müller-Steinhagen: This is not one of Dii's tasks. The Initiative is here to prepare the way forward and to create the political, regulatory and economic framework conditions for progress to be made at a future date. Nevertheless, solar-thermal power stations are already under construction in Morocco, Egypt and Algeria. Many other sites have also been identified, and these are under discussion between corporations and governments. We have actually progressed further at this point than we had anticipated.

Dii is certainly one of the largest industrial and infrastructure projects ever undertaken. Why are companies taking on such a huge project?

Müller-Steinhagen: There are two things that motivate the companies involved: by 2050, the countries of North Africa and the Middle East are set to effectively quintuple their energy needs. This means that power stations need to be built, irrespective of the technology used to meet this need. Furthermore, crude oil, natural gas and coal are becoming scarce and more expensive – add to this their emissions, which have a negative impact on the climate. Many companies clearly see a market here. Many projects have already been initiated in response to a Spanish energy feed-in law, while several projects are reaching the implementation stage in the USA. This means that this technology has a role to play in the global energy business. In 10 to 15 years, these power stations will become competitive with conventional ones. Corporations such as Siemens, Eon, RWE and Solar Millennium share the opinion that whoever enters this market today, will remain there in 10 years time.



The Desertec concept

It is unexpected for a Director of one DLR's Institutes to be appointed Chairman of this Management Committee. What is DLR's contribution to Desertec?

Müller-Steinhagen: DLR has been working on solar-thermal power stations for about 30 years now. We are one of the world's leading research organisations. Furthermore, our detailed energy system analysis commissioned by the German Federal Ministry for the Environment is the information platform upon which Dii was founded. So it's not really that surprising – we have the technology, the concepts and the contacts in the various countries and companies involved.

What contribution can DLR researchers make?

Our workload looks set to grow enormously. We are already training new staff members. We will be updating our studies and site analyses for new power stations. It is here that DLR's access to satellite data stands us in very good stead. Diligent site analysis is essential to isolate cost-effective solutions. We are also continuing to drive the development of these technologies, thus we stand to improve both individual components as well as a power station's overall system through ever-increasing industrial applications.

The concept behind Desertec has been around for more than 30 years. How do you see this rapid development of the past months?

The Desertec concept has indeed become more realistic in years gone by, but it had always remained a distant prospect. It was treated as a future scenario in initial discussions with industry at the beginning of this year. However, public, political and especially commercial attitudes have changed since Dii's foundation. I am delighted that my colleagues' work is receiving so much attention. At the moment there is a certain wave of optimism to implement our ideas while the opportunity is there.

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