



## Energy from the desert: "The picture is very different from Germany or the rest of Europe"

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Extensive construction of wind and solar power plants is planned in North Africa as part of the desert electricity project, DESERTEC. What are the aims of the North African countries with regard to this plan? How do they view DESERTEC? In the interview, Prof. A. Khalil, Vice Dean of the Faculty of Engineering at the University of Cairo, discusses renewable energy in Egypt and the DLR project Energy in the Middle East and North Africa, enerMENA.

Under the leadership of the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR), the enerMENA project is targeting intensified cooperation between engineers and technicians from Europe, North Africa and the Middle East. During November and December 2010, engineers and technicians will, for the first time, be trained in the construction and operation of solar power plants. The training will take place in Almería, Spain.

*Interview by Dorothee Bürkle*

### **What do people in Egypt think about the Desertec desert electricity project?**

Prof. Dr. A. Khalil: We need to raise awareness, because people need to know about renewable energy. The problem in Egypt is subsidies: fuel is subsidised, so renewable energy is regarded as a luxury. The cost still cannot compete with conventional energy. Many people look at it as a resource, like having an oil well; we can use the desert areas to produce electricity. So this would create additional national income and an increase in jobs. This is a good sign. The interest in Egypt is actually in fresh water, as well as electricity. Here, the picture is very different from Germany or the rest of Europe; the Desertec concept will get much more support if we can use it to produce water, as well as electricity.

### **What, in your opinion, are the advantages for Egypt?**

**Khalil:** Our oil and gas resources are depleting; Egypt has oil wells, but we are importing oil. Our gas resources are sufficient for now, but in view of the many petrochemical industries in Egypt, investors prefer to use natural gas for petrochemical purposes rather than burn it. At the same time, there is great potential for solar and wind energy. We have to find ways to bring the cost down. This cooperation in research and capacity building will facilitate our approach.

### **What are the first steps for the Desertec plan in Egypt?**

**Khalil:** We have to have a legislative framework for land use. Our country, Egypt, is actually in the final stage of formulating a land use agreement to allow investors to come in. Then we have to pass a feed-in law, similar to the one in Germany – a commitment to buy electricity. The problem with renewable energy is that it is not available 24 hours a day. We currently have windmills and a Concentrating Solar Power (CSP) plant, which will be commissioned in a few months, but the costs are still very high and we need to bring them down. To do this, we need to build up local industry using local manpower; then, economies of scale will kick in. With large plants, costs go down and the plants become competitive. However we are pushing for a bigger share of the subsidies; we cannot wait for 20 years to break even.

### **Do you think Desertec will stimulate the local job market?**

**Khalil:** I think joint ventures between international European companies and local companies will boost development and localisation. We have special climatic conditions; we have sand and

we have temperature extremes. This requires cooperation and there are many cooperative projects with the EU; all these efforts will help to build capacity and reduce costs in the future.

We have experts in this area who are collaborating with their counterparts in Germany; the exchange is stimulated by several programmes. We are badly in need of renewable energy. Although my background is in nuclear power, I believe that in the long term, renewable energy will prevail. The very first CSP plant was built Cairo in 1913. At that time, the price of coal was 30 US dollars per ton. So the American investors built the CSP plant to produce steam, which was used to pump water and irrigate cotton fields. However these efforts were interrupted by the war and the discovery of oil. But that investor had said that once the oil runs out, we would have to return to solar power.

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## Prof. Dr. A. Khalil



Prof. Dr. A. Khalil, Vice Dean of Faculty of Engineering, Cairo University: "Intensive discussions are under way regarding the creation of massive solar power generation capacity for electricity production in North African countries."

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