



Originally published as:

Kühn, M. (2011): Boldly trying to push science for solutions to solve the energy problems of tomorrow. - International innovation : disseminating science, research and technology, 66-68



# European Geosciences Union

Boldly trying to push science for solutions to solve the energy problems of tomorrow, **Michael Kühn** is studying new approaches where renewables play a vital role

## What were the some of the motivating factors underpinning the establishment of the Division on Energy, Resources & the Environment?

The European Geosciences Union (EGU) brings together geoscientists from all over Europe and the rest of the world, covering all disciplines of Earth, planetary and space sciences. This level of geo-scientific interdisciplinary approach is needed if we are to successfully tackle the challenges of the future.

One challenge for humankind, for example, is to provide adequate and reliable supplies of affordable energy and other resources, obtained in environmentally sustainable ways, which will be essential for economic prosperity, environmental quality and political stability around the world. The Division on Energy, Resources & the Environment (ERE) works towards being a leading forum for these kinds of topics and also serves to inform the European Commission on such matters. It is driven by the need for answers to the interwoven challenges of energy, resources and the environment.

## As the President of the Division, what does your role involve?

The scientific activities of the EGU are organised through the Divisions, encompassing all studies of the Earth and its environment. The management and administration of each Division are the collective responsibility of the respective President and officers. The major task and responsibility is to provide a sub-programme for the General Assembly of the EGU. I also take an active part in the EGU publications, by personally contributing to the EGU journals and book series and by serving as a referee to increase the standard of these publications. In addition, I contribute to our newsletter and support the outreach and educational activities of the EGU. The focal point for all Division Presidents is to bring together scientists and foster discussion between them, especially during the annual General Assembly.

## Could you take us through some of the Division's and your day-to-day activities?

The activities of the Division need to be seen less on a day-to-day basis, and more from year-to-year. We have a cycle of planning and organising that climaxes with the General Assembly every year. However, to provide greater insight, I ensure that all relevant subjects within the ambit of the ERE are well represented.

## With so many Divisions at the European Geosciences Union, to what extent do you interact with the other departments? How does the Union maintain unity and harmony across such a broad range, all with their own individual requirements?

The Union is supposed to pursue scientific objectives exclusively. Through our Divisions we promote cooperation and discussion in Europe among

scientists concerned with studies of the Earth and its environment, as well as planetary and space sciences. We primarily use scientific assemblies, specifically our own annual General Assembly, as well as the promotion to the previously mentioned publications in order to achieve our objectives. It is the structure of the EGU which ensures optimal work. The Council, within which Division Presidents are members, is the highest decision making body in EGU, and is our platform for extensive discussion and cooperation across, and between, the Divisions. Further support comes from seven Union-wide committees that report to the Council. However, the major focus for all of us is our annual General Assembly, which is the largest geo-scientific meeting and discussion forum in Europe. Last year, we had more than 10,000 participants.

## What types of energy does the Division's remit cover? As we move forward, what role are renewables going to have?

The planned programme for this year's General Assembly demands that the ERE cover wind and solar energy, in addition to geo-energy, geothermal energy and biomass. Furthermore, we will also study the topic of geological CO<sub>2</sub> storage, which is closely related to the use of fossil fuels.

In my view, renewables are going to have, or need to have, an outstanding role in the future. However, we scientists only provide the scientific basis to enable policy makers and the public to lead future directions. Unfortunately at the moment there are a lot of discussions going on which are not at all based on the required knowledge of natural science and engineering. I personally advocate that every idea and opportunity should be studied and tested. This is why we incorporate emerging topics into the ERE along the line.

## In terms of Europe's resources, do we have sufficient stocks to continue utilising energy at our current rate for another 100 years? Is the situation as dire as the media portrays?

We certainly have enough energy resources for the next 100 years. However, we need to define and decide on a sustainable way, which takes into account the Earth's climate, the environment and the welfare of the world's population. Mankind has tried this with so called 'silver-bullets' a couple of times. In my opinion I don't think this will work. What we need are diverse solutions which are location-specific – both in terms of available geo-resources, as well as being culturally-compatible. The danger is that without a working climate policy, a massive re-investment in the coal sector appears rational, because only a minor fraction of worldwide coal resources have been fully exploited to date. Furthermore, the latter option would trigger a new dimension of dependence from Europe on energy imports.

## In what way does the work of the ERE assist energy policy makers and to what effect?

The EGU runs a substantial outreach programme, which is supported by the different divisions, as well as our own. In general terms, the outreach







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programme and committee promotes geosciences. This includes engaging people, institutions, organisations – or other scientific unions – to make policy and decision makers aware of social problems related to geoscience. However, it is difficult to quantify the effect, because it isn't measurable.

### **What benefits to researchers does the ERE offer? How closely do you work with researchers?**

We are working side by side with researchers – we are all researchers ourselves! This work is at the heart of the EGU, which is a research-driven Union. The ERE is an interdisciplinary division, and offers the specific benefit of combining knowledge from different areas of basic research.

Like the EGU, the ERE was founded in 2002. Within this framework, we are devoted to the promotion of geosciences and cooperation between scientists. We offer scientists our annual General Assembly and additional workshops, scientific meetings, topical conferences, short courses and summer schools. Importantly, we encourage the participation of young scientists in the affairs of the Union.

### **Would you like to highlight some recent achievements facilitated by the ERE?**

Even in the face of growing challenges, the Division has showed a constant growth in recent years and is now very well established. This demonstrates that the topics we cover are of utmost importance.

### **What plans for the future do you have for the Division, and to what extent is innovation at the centre of your strategy?**

Thus far I have helped the ERE to become an established Division within the EGU, specifically focusing on the integration of geo-scientific

knowledge available within the entire Union. The increase of the number of sessions, the number of contributions and the number of participants at the annual EGU meeting will grow further within the coming years. For the period of 2011-2013, for which I am again President, I will put my labour into the consolidation of ERE. My aim is to grow the Division into a notable group of experts, advising the council and the general community to solve the problems of tomorrow with regard to the unsolved questions of energy, resources and the environment.

### **Is there any other aspect of the Division that you would like to comment on?**

We need young and motivated scientists and engineers to engage with our work and to spread scientific knowledge. This is not only an issue for the Division but relates to the entire EGU. Ultimately, our goal is always the pursuit of scientific excellence.



[www.egu.eu/inside-egu/divisions-and-present-officers/division-energy-resources-and-the-environment/home.html](http://www.egu.eu/inside-egu/divisions-and-present-officers/division-energy-resources-and-the-environment/home.html)

