

## **New Committee of University Teachers Active in Renewable Energies**

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### **Abstract**

University teachers active in renewable energy education in German speaking countries have founded a council to intensify the cooperation in different sectors of common interest. One of the aims of the committee is to develop a proper database which delivers differentiated information for students interested in university degrees in renewable energies. The development of the database shall take into account the dynamic development in the renewable energy sector. The initiative shall start with courses offered in German speaking countries, but it should be easily extendable to include also other countries. Special emphasis shall be laid on a low maintenance effort to keep the data base updated. Furthermore, a discussion should be started whether a similar committee should be founded on a European level as well. Aims might be the promotion and organization of international student exchanges, the mutual recognition of complete semesters finished at foreign universities, the organisation of central courses or the exchange of teachers etc.

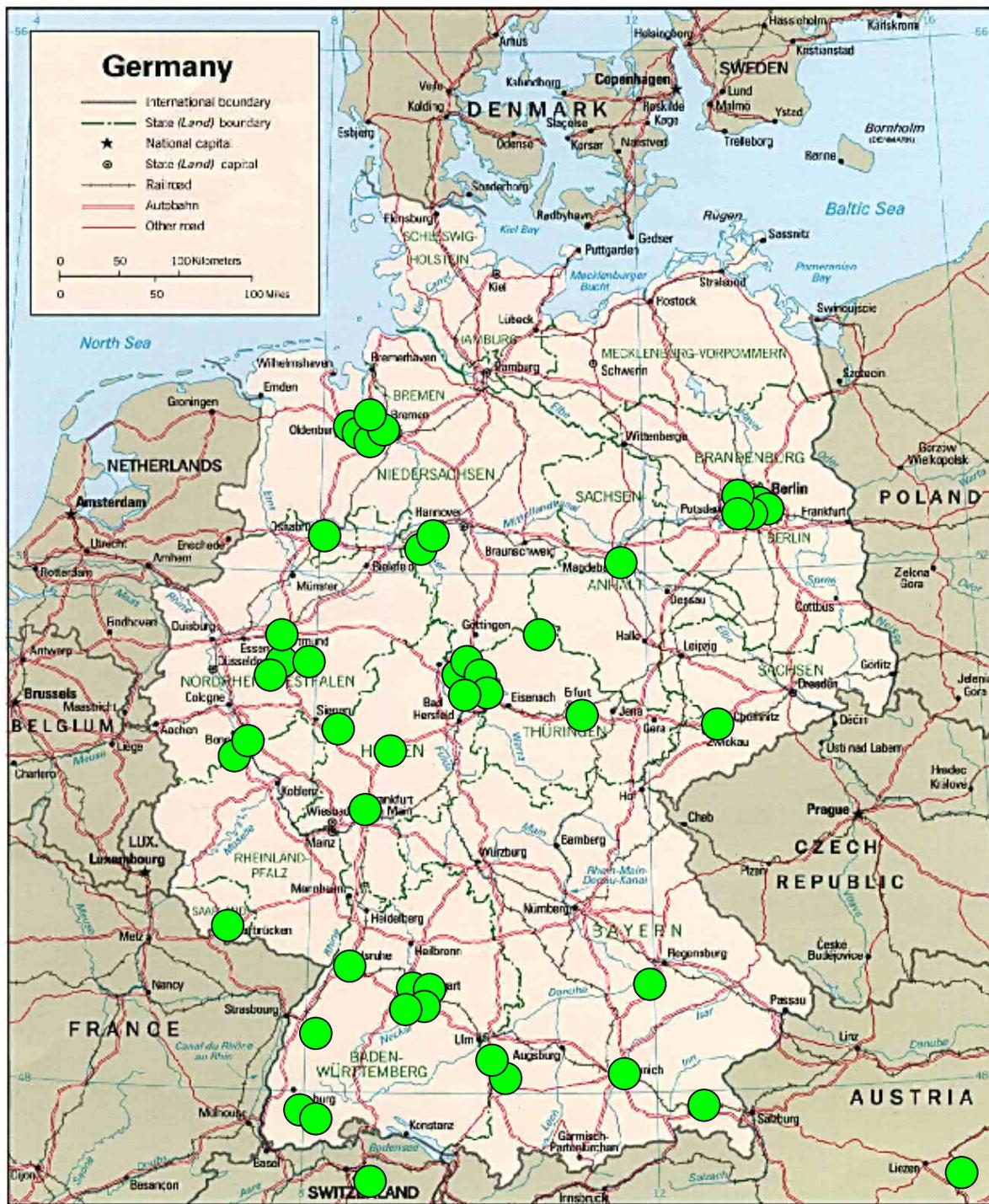
### **1. Introduction**

The dynamic of the development of renewable energies focused on research and market for a long time. The educational sector lag behind, and partly the lack especially of academics in the sector has been a bottleneck for the continued dissemination of renewable energy technologies. In the nineties, the university education was limited to a few teaching modules related to renewable energy. Meanwhile, the situation has changed significantly, now extensive courses and even complete bachelor and master degrees are offered in the sector. Unfortunately, there has been nearly no forum for the exchange of ideas, views or political statements between university teachers up to now. Common fields of interest might be the exchange of teaching modules, experiments in laboratories, teaching documents, examinations, experience with the accreditation processes as well as the exchange of teachers and students or the cooperation in international courses. Furthermore, it was stated that an information basis is missing which could inform students about the numerous education offers at different universities.

To overcome these problems at least regionally, 2005 a new committee has been founded as an association of university teachers, active in the field of renewable energies in German speaking countries. It has been established under the roof of the German section of ISES, the "Deutsche Gesellschaft für Sonnenenergie". At the moment about 50 members are listed, cf. fig. 1, who meet once per year to discuss and further develop the issues mentioned above.

### **2. Higher education in Germany regarding renewables**

Table 1 shows some offers of universities and advanced technical colleges in Germany with BSc and MSc courses with a main focus on renewable energies. The table is probably not complete and does not contain courses embedded in classical subjects like mechanical or electrical engineering. Due to the high dynamic in the renewable sector, not even the experts have an overview about the different offers, so, how should the students find the best university taking into account their special interests? Therefore it seems to be necessary to develop a data base which shall include this information.



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Fig. 1: Origin of the members of the new council of German speaking university teachers active in renewable energies.

Table 1: Some offers of German universities and advanced technical colleges for BSc and MSc courses in renewable energies. The list is not complete.

University	Name of the Course	Examination	Main area	Language	Start	Website
Universität <b>Oldenburg</b>	Renewable Energy	MSc	Renewable Energy	English	October	<a href="http://www.uni-oldenburg.de/studium/cman/public/studiengang.php?id_studg=214">http://www.uni-oldenburg.de/studium/cman/public/studiengang.php?id_studg=214</a>
Universität <b>Kassel</b>	Erneuerbare Energien und Energieeffizienz (Renewable Energies and Energy Efficiency)	MSc	Renewable Energy	German	April / October	<a href="http://www.energie.uni-kassel.de">www.energie.uni-kassel.de</a>
Fachhochschule für Technik und Wirtschaft <b>Berlin</b>	Umweltechnik/Regenerative Energien Regenerative Energiesysteme	Dipl.-Ing. BSc, MSc	Renewable Energy	German	April / October October	<a href="http://www.f1.fhtw-berlin.de/studiengang/ut/">http://www.f1.fhtw-berlin.de/studiengang/ut/</a>
Fachhochschule <b>Nordhausen</b>	Regenerative Energietechnik (Renewable Energy Technology)	Dipl.-Ing. BSc	Renewable Energy	German	October	<a href="http://www.fh-nordhausen.de/index.php?id=76">http://www.fh-nordhausen.de/index.php?id=76</a>
Hochschule für Technik <b>Stuttgart</b> (among others)	Sustainable Energy Competence	MSc	Renewable Energy	German	October	<a href="http://www.hft-stuttgart.de/Bauphysik/Sence">http://www.hft-stuttgart.de/Bauphysik/Sence</a>
Hochschule <b>Biberach</b>	Gebäudeklimatik (Building Climate)	BSc, MSc	Energy Efficiency	German	October	<a href="http://www.fh-biberach.de/studium/gebaeudeklimatik">http://www.fh-biberach.de/studium/gebaeudeklimatik</a>
Fachhochschule <b>Hildesheim</b> (among others)	Nachwachsende Rohstoffe und erneuerbare Energien (Renewable Raw Materials and Renewable Energies)	MSc	Biomass	German, English	October	<a href="http://rm.hawk-hhg.de/hawk/fk_ressourcen/125226.php">http://rm.hawk-hhg.de/hawk/fk_ressourcen/125226.php</a>
Fachhochschule <b>Bochum</b>	Zentrum für Geothermie und Zukunftsenergien	MSc	Geothermal	German	planned	<a href="http://www.fh-bochum.de/geothermie/">http://www.fh-bochum.de/geothermie/</a>

### **3. Data base for offers of degrees in renewables**

At least the very few data bases which already exist in Europe, e.g. /1/, and Germany /2-7/ lack a differentiation and a proper sorting of the respective main teaching areas or the number of courses offered at a respective university. Furthermore, the data bases become outdated very fast in this very dynamic sector.

The basic idea of the new data base is that it shall be organized by the university teachers themselves. Interested teachers fill in a questionnaire and describe the degrees offered at their respective universities. They vouch for their honesty for the correctness of the descriptions. Furthermore, they shall get an automatically generated email yearly with an enquiry to confirm or update the information electronically. If an item is not confirmed, it will be erased after a specific period. The data base shall be open for general degrees in renewable energies, for courses in special technologies but also "classical" degrees as mechanical or electrical engineering with embedded main areas in special renewable energy technologies. A proper search function shall enable the students to rank the data e.g. by special fields like PV or biomass as well as location, degree, study fees or other search keys. The technical maintenance shall be carried out by ISES-headquarter. For the initial development of the data base public funds are necessary and are already applied for, but, due to the low centralized effort with the updates, the registration in the data base should cost only a very low fee or could even be offered free of charge for the universities. The utilization by potential students shall be without charging in any case. It is aimed at to start the development and gain practical experience with the data base with degrees offered in German speaking countries, but after short time the data base could and should be extended by courses offered in the EU and also worldwide. The basis of the validity of the content of the data base is the reputation of the respective professors. Therefore, the scope of the data base shall be limited to university courses. Other approaches seem to be necessary for commercial offers of continuing education etc.

### **4. Founding of a European Committee of University Teachers?**

Not only in Germany, but also in other European countries the higher education sector regarding renewables develops very fast. Therefore, structures facilitating and extending the cooperation on a European level should be thought about, too. Subjects could be, among others, the promotion and organization of international student exchanges, the mutual recognition of complete semesters finished at foreign universities, the organisation of central courses or summer schools, the exchange of teachers etc. The main communication could be done by emails, and each second year meetings could be held e.g. in conjunction with the EuroSun conferences. Interested university teachers are cordially requested to show their interest and contact the authors of this paper.

### **References**

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- /2/ <http://www.solid.de/index.php?id=33#c565>
- /3/ [http://www.jobmesse-ee.de/pdf/Studium\\_Ausbildung.pdf](http://www.jobmesse-ee.de/pdf/Studium_Ausbildung.pdf)
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