



E.ON Energy Research Center



E.ON Energy Research Center Series

# Energy Landscape Core Competences in Energy

Anna Bierbrauer, Dennis Brinckmann,  
Sabine Vogel, Rik W. De Doncker

Volume 5, Issue 2





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## **Inhalt**

1	Description .....	1
1.1	Goals.....	1
1.2	Methods .....	1
2	Functionality.....	3
2.1	Navigation .....	3
2.2	Institute Details .....	5
3	Conclusion .....	7
4	Acknowledgment.....	8
5	References.....	9



# 1 Description

As part of a cooperation project between RWTH Aachen University and Research Center Jülich, a comprehensive overview of the research competences in the field of energy of institutes of both institutions was developed through research and interviews.

The collected data is provided in the form of a web-based database and will be accessible to both, internal and external users under [www.energylandscape.rwth-aachen.de](http://www.energylandscape.rwth-aachen.de).

This database contains all relevant information about the offered research and developments in the areas of efficient extraction and use of energy, as well as resources, infrastructure, energy storage, economic and social issues in the field of energy research. The data are provided in the RWTH intranet or online on the Internet and should offer internal project teams as well as external interested parties an overview of potential partners within the RWTH Aachen University and Research Center Jülich.

## 1.1 Goals

The aim of the joint project of RWTH Aachen and Jara Energy is to create a database to capture the R&D competences of institutes of RWTH Aachen and the Research Center Jülich in the field of energy research and make this information available to the public and the other institutes. This information base should be implemented in a web-based database, which should be available to the public, in particular to industrial and international research and development partners, to provide a quick and easy to use platform that informs the user about the research topics offered within Jara Energy.

## 1.2 Methods

In the first step a questionnaire was designed in which the research focus, research projects and publications of individual institutes in the energy sector have been acquired. This data collection was realized by means of Internet research. Recorded was a total of about 75 institutes of RWTH Aachen University and Research Center Jülich.

In a second step, these questionnaires were provided to the institutes and verified in personal interviews with the employees of the respective institute and, if necessary, modified. For a quick and easy overview of the energy sector, the topics are categorized in 6 main topics: system, resources, energy production, energy use, infrastructure and storage. Each of these topics is subdivided into sub-topics. The data from the questionnaires was classified in the respective areas. The top "System" level deals with fundamentally economic, environmental and social issues of energy research. The field of "Resources" includes energy resources in the fields of conventional and renewable energy. The extraction and processing of these forms of energy is covered by the system level of "Conversion-Generation". The storage of electricity, gas and heat or cold is placed in the field "Storage". The field "Infrastructure" covers, for example, network planning and pipelines. The field of "Energy Usage" covers issues around use of energy in buildings, mobility and production processes.

For programming and implementation of the database, an external company was hired. This database offers the possibility to structure all research areas in the field of energy. It is possible to find the right institutes for exactly the type of research that is needed.

After data input, a two-week review period was given to the involved institutes to offer the opportunity to become familiar with the functionality and content of the web database, and state any modifications or additional requests.

## 2 Functionality

The webpage can be called by [www.energylandscape.rwth-aachen.de](http://www.energylandscape.rwth-aachen.de)

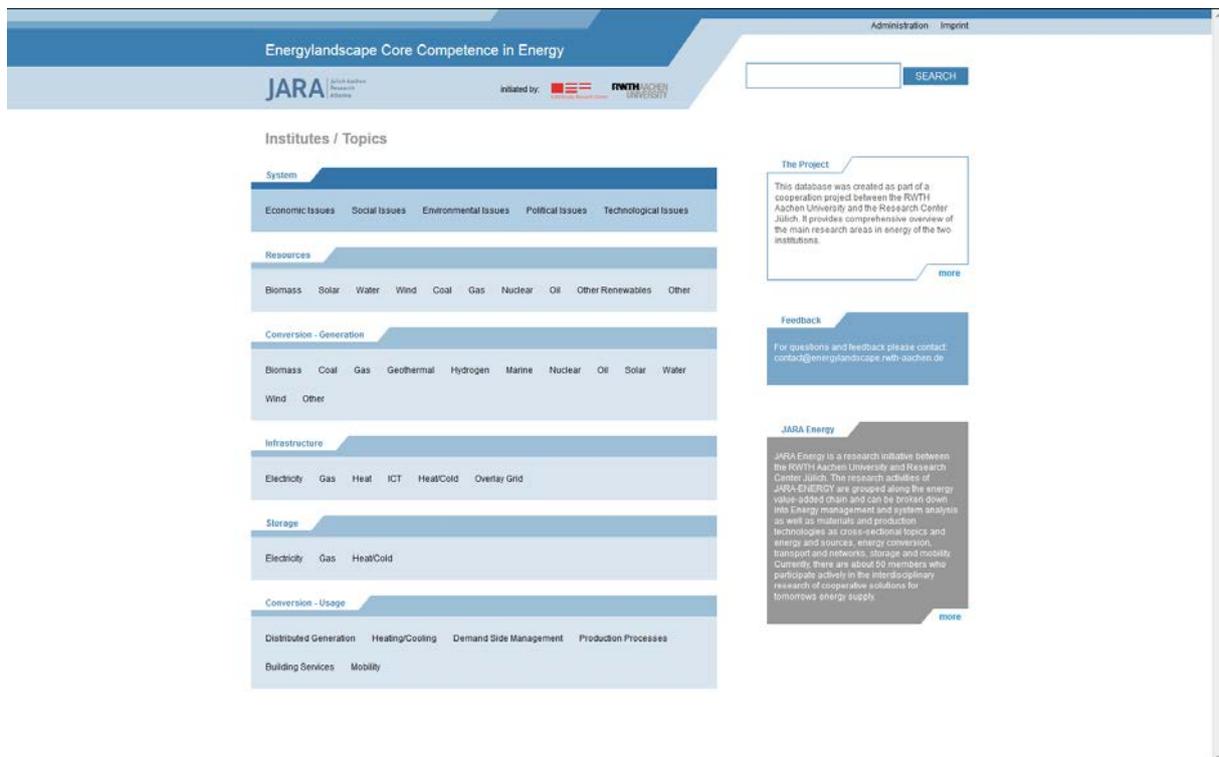


Fig. 1: Energylandscape main page

### 2.1 Navigation

On the Startpage, the six subject areas System, Resources, Conversion-Generation, Infrastructure, Storage and Conversion- Usage are shown with their sub categories below. By clicking on one of these keywords, the listed institutes at this area can be reached directly. There is also the opportunity to further refine the subject area (Fig. 2).

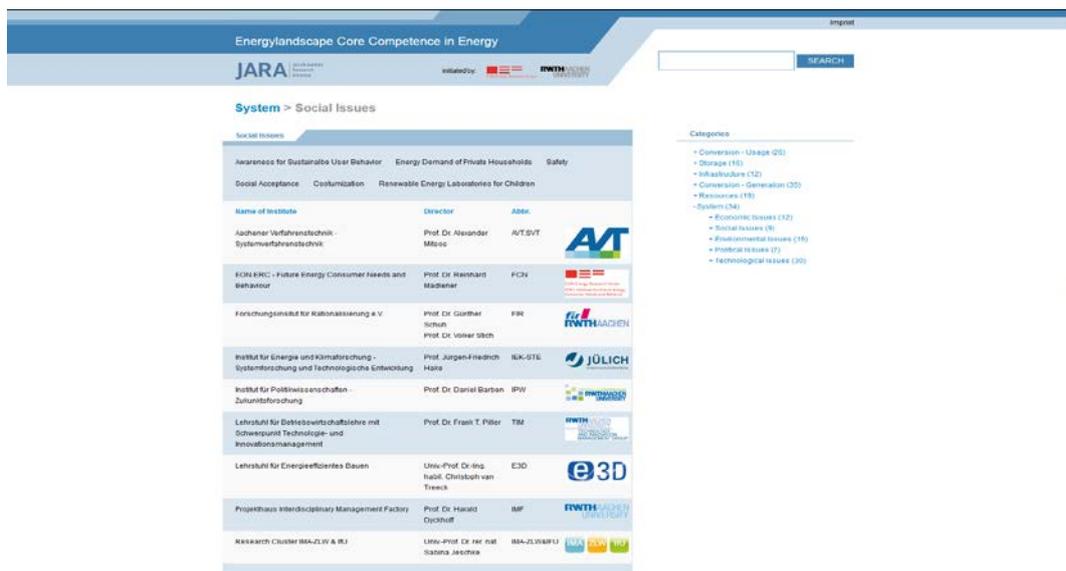


Fig. 2: Subject area System

This can be done either on the topics at the top or due to the use of the categories tree on the right side of the window.

Clicking the “plus sign” opens the sub-categories. Each category can be displayed. In the brackets behind each of the different research topics is the number of institutes listed in this area.

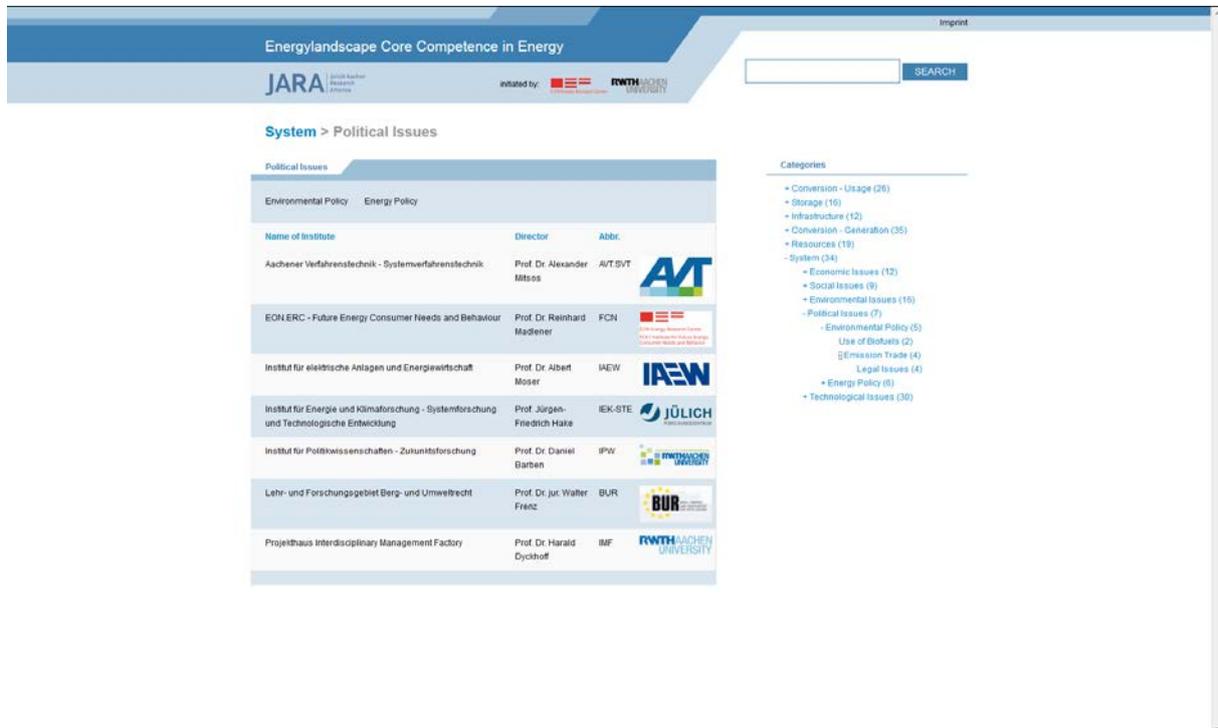


Fig. 3: Category tree

By clicking on the desired topic the listed institutes can also be found.

Furthermore, the search function in the top right corner can be used to start a direct search for a particular topic (using keywords). When a topic is specified the institutes which are listed under these keywords will then appear. It is also possible to search for an institute or a Professors name directly (Fig. 4).

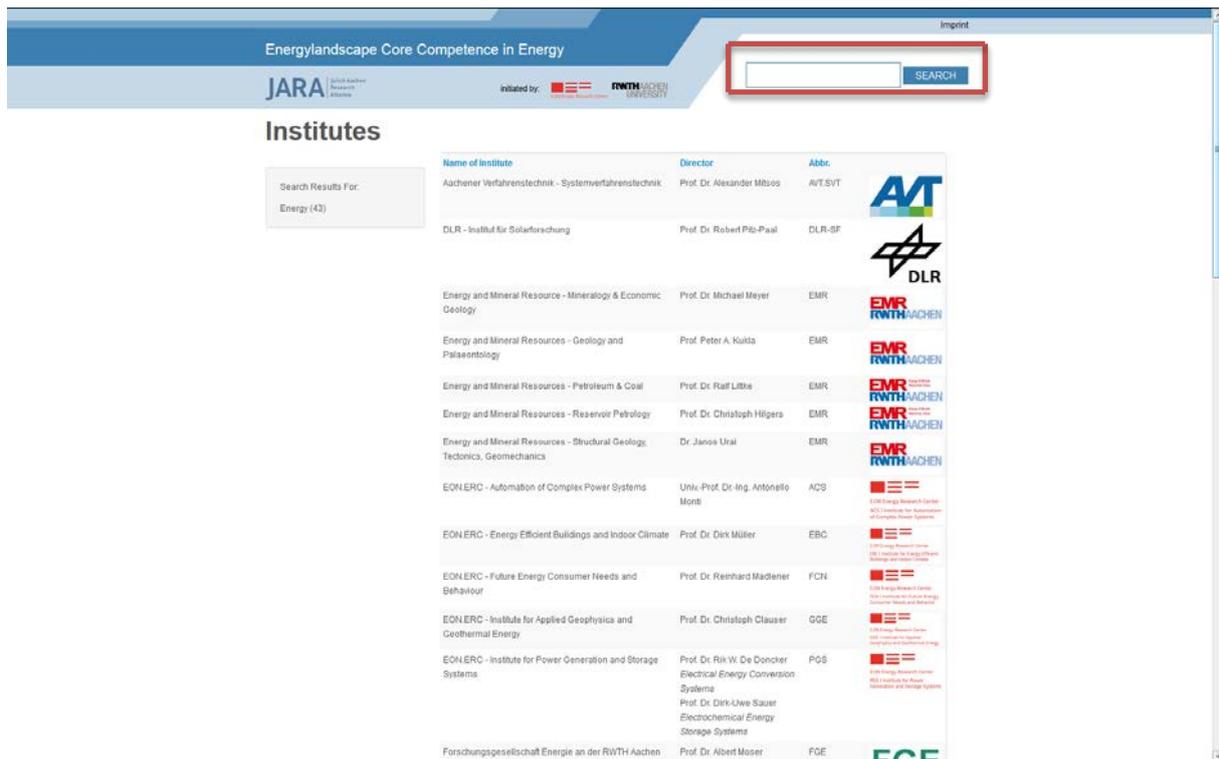


Fig. 4: Search Function

On the right side of the Startpage, information about the project and Jara Energy can be found. In the box "feedback", an e-mail can be formulated, which is automatically forwarded to the registered contact person of the project.

## 2.2 Institute Details

As soon as the user finds an appropriate institute, the details of the institute can be found by clicking on the Logo or the name of the institute. Here the name of the institutes directors and general information on the research areas of the institute can be found as well as contact data (Fig. 5).



Fig. 5: Institute details

In the lower right corner of the Institutes' view all the categories the institute is listed in, can be found. By clicking on Categories the user obtains an overview of the research topics in which the institute is listed (Fig.6) .

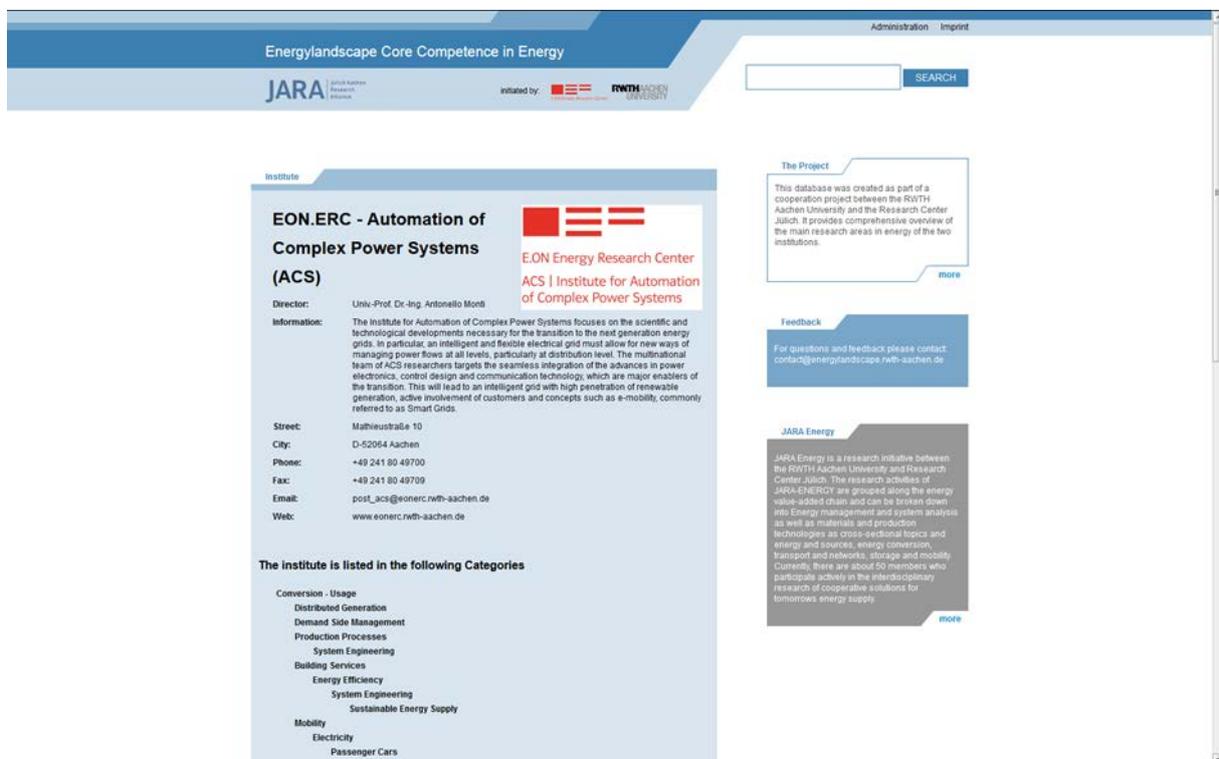
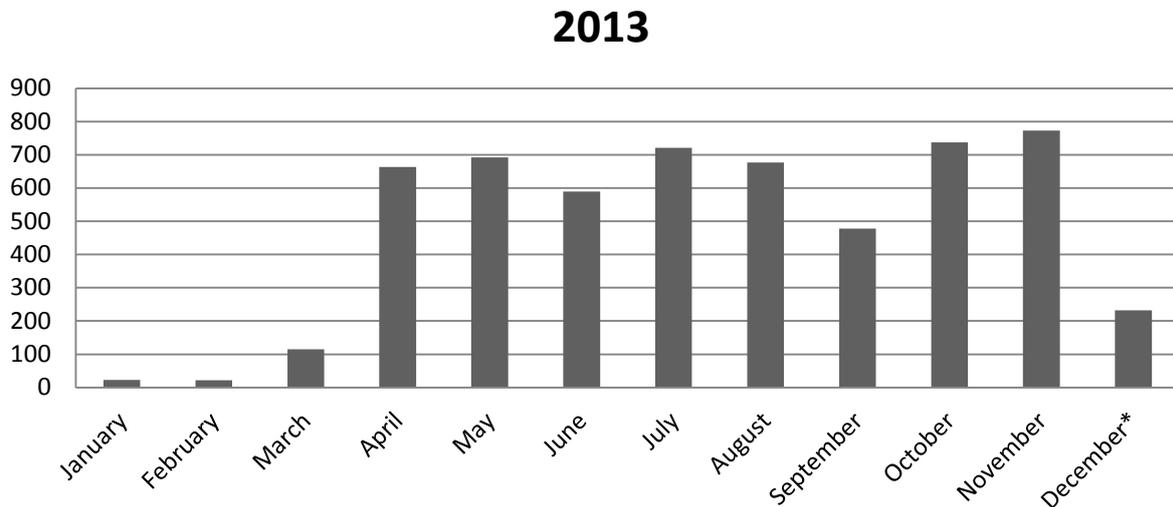


Fig. 6: List of the categories in which the institute appears

### 3 Conclusion

The database is online since the first of April in 2013.

With an average of 15 visits per day, the database is regularly used inside and outside the RWTH network. There are over 5.700 accesses since October 2012 from over 18 different countries.



Besides Germany, most requests are observed from user servers in England and China. These servers are not necessarily located in these countries, the evaluation is based on language codes. An average access takes about 3 minutes. The search function is not that often used (~21% of all search queries), most users navigate by the navigation tree.

The feedback within the Institutes is consistently positive. A common database on research topics in the field of energy comes with much approval. It is planned that the Database, or its concept, is handed over to the Energy and Chemical Process Engineering (ECPE) Strategic Research Area of the RWTH Aachen. Therefore the database will be expanded with more institutes of the RWTH Aachen.

## 4 Acknowledgment

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## 5 References

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## Notes





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