International Energy Cooperation Program
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RWTH Aachen University (RWTH), as a technical university, combines the fields of science, research, engineering and innovation. RWTH Aachen University is renowned for its advanced research especially in the field of engineering and natural sciences. RWTH Aachen aims to be one of the best German Universities in technological fields by offering top-level performance on all levels, a high-quality education and large scale interdisciplinary projects.

The Integrated Interdisciplinary Institutes (I³) of RWTH Aachen University combine innovative research in the engineering field with practical approaches. E.ON Energy Research Center (E.ON ERC), with its four institutes and a close collaboration with JARA-Energy, is one of the first I³ and makes a decisive contribution to the development of innovative concepts.

The E.ON ERC’s main building, testing hall and “Modulbau” are located at the northern border of Campus Melaten. RWTH Campus Melaten covers an area of 473,000 m². In the future, a hotel as well as an education and qualification center will be constructed in addition to the eleven disciplinary research clusters. E.ON ERC is part of the RWTH Campus Cluster Sustainable Energy, which was one of the first six clusters and is led by Prof. Rik W. De Doncker. Advantages of these research clusters are the fast exchange of research topics and a close collaboration with local businesses.

E.ON ERC and the RWTH Campus Cluster for Sustainable Energy aim to increase energy efficiency and improve renewable energy sources. One of the key strategies to reach this goal lies in intelligent management of energy networks using decentralized supply systems, which are known as smart grids. However, research in the sustainable energy field is far more advanced. Resource-saving energy production is gaining increased attention due to higher demand as well as economic and social aspects. Current research also focuses on technical...
innovations such as the development of new materials for thermal insulation in intelligent facades or advanced semiconductor devices for power conversion technology (power electronics). In addition to interdisciplinary research, E.ON ERC is distinguished by its strong national and international links with other universities, research centers and similar scientific institutions.

The International Energy Cooperation Program (IECP) allows students to participate in research projects at universities all around the globe. These research projects give students the opportunity to exchange ideas and work with experienced engineers on relevant and innovative projects. The research topics focus on different fields of energy.

The E.ON ERC has established an extensive network of universities and research institutions. The international partner universities and research institutions as well as the substantial regional cooperation provides a profound basis for successful teaching and research. The steady growth of national and international collaborations strengthens this basis and makes the energy research at E.ON ERC so unique.
Germany
E.ON Energy Research Center, RWTH Aachen University
International Energy Cooperation Program

Australia
University of Melbourne - Melbourne Energy Institute
Royal Melbourne Institute of Technology

Canada
University of Alberta
University of Western Ontario - WindEEE Research Institute

Denmark
Institute for Energy Technology - Aalborg University

Japan
Tokyo Institute of Technology

Latvia
Riga Technical University

Norway
Norwegian University of Science and Technology

Russia
Russian Academy of Science

Sweden
Chalmers University of Technology
Lund University

Switzerland
Energy Science Center (ESC) - ETH Zurich

UK
Energy Research Accelerator (ERA):
British Geological Survey (BGS), Loughborough University
University of Birmingham, University of Leicester
University of Nottingham, University of Warwick

USA
Carnegie Mellon University
FREEDM Systems Center: North Carolina State University
GRId-connected Advanced Power Electronic Systems (GRAPES): University of Arkansas
University of South Carolina
International Energy Cooperation Program (IECP)

With its subsidiary in Aachen, E.ON ERC has a central location in Europe, allowing a proficient exchange with partners within Europe.

The International Energy Cooperation Program (IECP) was established in 2008. Since then, numerous renowned universities signed Memoranda of Understanding (MOUs).

The research exchange program is an organized student exchange for research or educational stays as well as internships on master's or PhD levels.

Most of the E.ON ERC Scientific Advisory Board Members are representatives of IECP partner universities. Through the IECP Program, the center obtains important insight into activities of other research centers and their strategic aims.

The following pages show the research areas of the different partners, so that students who are interested in an exchange via IECP are able to find the information they need for their stay. For further information on the individual partners, their research fields or the application process, please visit the website of E.ON ERC.
IECP Cooperation Partners

Our Partners at a Glance

**University of Melbourne - Melbourne Energy Institute, Australia**
The University of Melbourne is a renowned public university in Melbourne, Australia. It was founded in 1853 and is one of Australia’s oldest universities. Times Higher Education as well as the Academic Ranking of World Universities have ranked the University of Melbourne number one in Australia and among the top 50 universities worldwide. The university combines 11 academic units and offers a wide spectrum of research. The Melbourne School of Engineering is an international leading research institute and is one of many institutes at the University of Melbourne. The IECP Program with Melbourne focuses on research in geothermal energy, carbon capture and storage as well as energy systems.

**RMIT University - Royal Melbourne Institute of Technology, Australia**
The Royal Melbourne Institute of Technology (RMIT) is a public research university located in Melbourne, Australia. RMIT offers courses in fields such as business administration, design and arts, communication and digital media, natural and engineering sciences as well as education and teaching. RMIT is one of the most recent partners in the IECP program. The collaboration between RMIT and RWTH Aachen University comprises research areas such as smart grid technologies and applications, modulation and control of power electronic conversion systems as well as sustainable design and development.
University of Alberta, Canada
The University of Alberta is one of the largest and most renowned universities in Canada. According to QS World University Rankings and Times Higher Education World University Rankings, it ranks within the top 5 universities in Canada and within the top 100 worldwide. The university is located in Edmonton, Alberta and was founded in 1908. Almost 40,000 students attend the university and its five campuses include 18 faculties. Students who decide to visit the University of Alberta through the IECP Program can choose between the following research topics: electrical & computer engineering, mechanical engineering as well as civil and environmental engineering in the energy sector.

University of Western Ontario - WindEEE Research Institute, Canada
The University of Western Ontario is an internationally recognized and leading university in wind engineering. The Wind Engineering, Energy and Environment Research Institute (WindEEE RI) was established in 2011. The three-dimensional testing chamber, the WindEEE Dome, is the first one worldwide. The research fields at WindEEE lie in Engineering, Energy and Environment (EEE). Non-synoptic wind systems on buildings and structures, the optimization of wind farms and wind turbines, physical modelling of flow over rough surfaces, urban canopies, complex topography and forestry, outdoor and indoor air quality, and wind driven rain and snow are research topics at the WindEEE institute.
**Aalborg University - Institute for Energy Technology, Denmark**

Aalborg University is located in Denmark and follows the principle of “Aalborg model for Problem Based Learning (PBL).” This principle encourages the students at Aalborg University to speak their mind and acquire academic knowledge independently through interdisciplinary work. The IECP Program cooperates with the department of Energy Technology which covers seven main competence areas: electric power systems, power electronic systems, electrical machines, fluid power and mechatronic systems, fluid mechanics and combustion, thermal energy systems and esbjerg energy section.

**Tokyo Institute of Technology, Japan**

Tokyo Institute of Technology (Tokyo Tech) is one of Japan’s top universities and its leading university for science and technology. It was founded in 1881 as Tokyo Vocational School. Over 10,000 students study at Tokyo Tech in bachelor’s, master’s or doctoral degree programs. Tokyo Tech’s research goal is the integration of international projects and the development of an international research environment. IECP students may take part in various research projects such as the research of environmental technology in particular solar panels, power electronics and their applications. Students that are interested in going to Japan are required to apply to the International Office as well as the IECP Program. Further information on a research stay in Japan can be found on the IECP homepage or via email.

**Riga Technical University, Latvia**

Riga Technical University (RTU) is one of the largest universities in Latvia and consists of nine faculties with 33 institutes. RTU is internationally recognized for its high quality engineering education and is the only polytechnic university in Latvia. The university strives for a high-quality learning atmosphere by implementing advanced research facilities and practical training. Interested IECP exchange students can join research projects in the field of power and electrical engineering as well as environmental sciences and sustainable energies.

**Norwegian University of Science and Technology - Centre for Renewable Energy, Norway**

The Norwegian University of Science and Technology (NTNU) is the largest institution in Norway for engineering education. NTNU offers a broad academic curriculum with undergraduate and graduate programs. The Centre for Sustainable Energy Studies (CenSES) was established in 2011. CenSes is a research facility for national research on renewable energies including policymaking, energy systems and markets, innovation and scenario development. Their goal to develop environmentally friendly energy is supported by national and international researchers as well as public and private decision-makers.
**Russian Academy of Sciences, Russia**

The Russian Academy of Sciences (RAS) is a well-known civil, self-governed, non-commercial organization located in Moscow. It was first established in 1724 and reinstated in 1991. RAS consists of 13 specialized scientific divisions and 3 regional branches. Various international research cooperation with over 48 countries have been established. Their main focus lies on national basic science and global problems. RAS engages in research fields like environmental protection, research of the world oceans, global climate change as well as epidemic and disease control.

**Chalmers University of Technology, Sweden**

Chalmers University of Technology was founded in 1829 in Göteborg, Sweden. It is ranked among the top 100 engineering universities in the world. Chalmers tries to combine research and a practical learning approaches. The university includes eight main research areas: built environment, energy, information and communication technology, life science, materials science, nanoscience and nanotechnology, production and transport. Students visiting Chalmers University can support researchers in the fields of electrical systems e.g. wind energy applications as well as electrical systems for renewable power production and electric vehicles.
Lund University, Sweden
Lund University is a highly respected and innovative university with approximately 42,000 students. Lund is ranked as one of the top 100 universities in the world. The Swedish university provides education and research in engineering, science, law, social sciences, economics and management, medicine, humanities, theology, fine art, music and drama. Lund University follows the vision “A world-class university that works to understand, explain and improve our world and the human condition.” Its goals are to develop the education program and create an efficient and diverse research and teaching environment. Interested IECP exchange students can join research projects in the field of various research areas, which can be found on the E.ON ERC homepage.

Energy Research Accelerator (ERA), United Kingdom
Energy Research Accelerator (ERA) is a partnership of six internationally renowned universities and the British Geological Survey. The collaboration aims to identify new technologies and energy experts for a sustainable building environment and energy landscape. The research fields of ERA lie in geo-energy, integrated energy storage and thermal energy. Interested students can accompany research projects aiming to reduce the UK’s use of primary resources and the dependency of imported energy, create smarter energy systems and energy security or reduce the carbon emission.

Carnegie Mellon University, United States of America
Carnegie Mellon University (CMU) is a private, global research university with renowned educational institutions, which consists of seven schools and colleges. With more than 100 centers and institutes, the research area at Carnegie Mellon University spreads over a great variety of fields. The IECP Program is a cooperation between the College of Engineering at Carnegie Mellon University and E.ON ERC. Possible research areas for interested students include electricity generation, storage, transmission and distribution, electricity markets, environmental systems as well as the effects of global climate change. Interested students need to be informed that a proof of financial support is required to join CMU. For further information on this, please turn to p. 17 "Proof of Financial Support."

North Carolina State University - FREEDM Systems Center, United States of America
Future Renewable Electric Energy Delivery and Management Systems Engineering Research Center (FREEDM) at the North Carolina State University is a collaboration between universities and industry partners from the United States. The objective of the collaboration is to develop a secure and environmentally friendly electric grid. FREEDM Center develops a network of distributed energy that is able to manage power by using secure communication and advanced power electronics, the so-called “internet of energy.” The field of research includes power electronics packaging, controls theory, solid-state transformers, fault isolation devices and power systems simulation and demonstration. Interested students need to be informed that a proof of financial support might be required to join North Carolina State University. For further information on this, turn to p. 17.
University of South Carolina (GRAPES), United States of America

The University of South Carolina (USC) is located in Columbia, South Carolina. Its research areas include health, sciences, advanced materials, energy research as well as environmental sciences and sustainability. The University of South Carolina was founded in 1801 and has a rich history. USC and the University of Arkansas are part of the National Science Foundation Industry/University Cooperative Research Center on GRid-conneced Advanced Power Electronics Systems (GRAPES). GRAPES is a program with over 50 centers around the USA. The goal of USC at GRAPES is the acceleration of the adoption and insertion of power electronics into the electric grid to improve system stability, flexibility, robustness, and economy. The research topics for interested students at USC focus on power electronics, electronic control and routing of power, and simulation environments that support analysis and design of advanced power electronic systems. Interested students need to be informed that a proof of financial support might be required to join the University of South Carolina. For further information on this, please turn to p. 17 “Proof of Financial Support.”

University of Arkansas (GRAPES), United States of America

The University of Arkansas (U of A) was founded in 1871 as a land-grant college and state university in Fayetteville, Arkansas. The university’s research mission is to involve students in the research enterprise and to spur economic development. The University of Arkansas has a significant facility for power electronics testing at the grid power levels in their National Center for Reliable Electric Power Transmission (NCREPT). Together with the University of South Carolina, U of A wants to accelerate the adoption and insertion of power electronics into the electric grid in order to improve system stability, flexibility, robustness, and economy. Interested students need to be informed that a proof of financial support might be required to join the University of Arkansas. For further information on this, please turn to p. 17 “Proof of Financial Support.”
Think Global
## General Information

### Important Information at a Glance

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<td><strong>Application</strong></td>
<td>The application has to be submitted to E.ON ERC (All application forms can be sent to <a href="mailto:exchangeprogram@eonerc.rwth-aachen.de">exchangeprogram@eonerc.rwth-aachen.de</a>). E.ON ERC checks and forwards the application to the responsible authorities.</td>
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<tr>
<td><strong>Application Conditions</strong></td>
<td>A good overall study performance is needed. Therefore, students need to submit an overview of their grades. Besides the study performance, extracurricular activities as well as professional experience are considered. Good English skills, at least European level B2 are required.</td>
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<td><strong>Deadline</strong></td>
<td>The E.ON ERC's exchange program does not have any deadlines. Applications can be submitted at any time.</td>
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<td><strong>Documents</strong></td>
<td>For a full application, the following documents have to be submitted: the registration form available on the E.ON ERC’s website, an overview of grades, a CV, a motivation letter as well as a proof of English language proficiency.</td>
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<tr>
<td><strong>Funding</strong></td>
<td>IECP is not funded. The applicant has to take care of travel and living expenses but there are different options for scholarships. The International Office of RWTH Aachen University provides information about different funding programs.</td>
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<td>Language of Application</td>
<td>The application has to be submitted in English and German.</td>
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<td>Process Duration</td>
<td>Every application should be submitted as early as possible. Usually the process takes approximately one semester. All applicants should consider the process duration when applying.</td>
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<td>Proof of Financial Support</td>
<td>For some universities a proof of financial support is necessary. Especially universities in the United States of America often require a financial statement from students. This is also necessary even if students do not pay tuition fees. Students traveling to the U.S. need to be aware that they might be asked to provide a proof of sufficient financial support for the entire duration. The minimum support can vary from one university to another (for example Carnegie Mellon University requires a minimum support of approximately 2300 $/month).</td>
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<td>Research Topic</td>
<td>The motivation letter should state a research field as well as the partner university where the exchange should take place. The exact topic will be specified together with the supervisors at the partner university. To find a fitting research topic, interested students can find a description and links to all of the partner institute’s websites on the homepage of E.ON ERC.</td>
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</table>
1. Define 3 desired research areas  
List 3 preferable partner universities  
Fill out online application

2. Online application send to: exchangeprogram@eonerc.rwth-aachen.de

   - Faculty of Mechanical Engineering
   - Faculty of Georesources and Materials Engineering
   - Faculty of Electrical Engineering and Information Technology
   - Faculty of Business and Economics

3. Personal interview to select suitable projects  
Contacting the partner universities abroad
Application Procedure

Students who wish to work at an E.ON ERC partner university for a research project in the field of sustainable energy can stay for a period of at least three up to a maximum of six months. The student exchange procedure is organized according to the following three steps:

**Step 1**

Interested students should fill out an application form, which can be found on the E.ON Energy Research Center’s website. Documents that have to be included in the application are the application form, CV, motivation letter, proof of language proficiency (at least European Level B2), and an overview of grades. In the motivation letter, the student should state at least one desired subject area as well as a partner university in which the project exchange should take place. The motivation letter will be forwarded to the responsible faculty, the International Office as well as the responsible contacts at our partner universities. Therefore, the letter needs to be available in **German and in English**. If all documents are complete, the E.ON ERC will check if the application meets all requirements. If they are fulfilled, the application is forwarded to the responsible team at the faculty as well as the International Office.

In the case of an IECP student exchange, there are no deadlines to consider. Applications can be submitted at any time.

**Step 2**

After a student’s application has been successfully examined, the E.ON ERC informs the responsible RWTH faculty as well as the International Office about a possible exchange. The faculty checks the application on discipline-specific qualifications, such as the current average grade, Credit Points, academic recognition and possible research topics. The contents of the application as well as the determination of the applicant’s suitability for such an exchange are likewise reviewed in this step. In addition, the faculty is able to provide information on the acceptance of credit points or study works. The International Office and the faculty have to allow the exchange for the student.

**Step 3**

As soon as all formalities have been clarified, E.ON ERC may invite the student to a personal meeting in order to plan the specific research project and the exchange program. Afterwards, E.ON ERC will contact the desired university to find a research project for a student exchange. Also E.ON ERC will initiate contact between the student and the contact person of the partner university. If a matching project is found, the exchange will start.

Note that the overall process may take between two or three months due to the variety of steps and departments involved.
Contact

E.ON ERC, International Office, Faculties

**E.ON Energy Research Center**
RWTH Aachen University
Mathieustraße 10
52074 Aachen
Germany
www.eonerc.rwth-aachen.de
exchangeprogram@eonerc.rwth-aachen.de

**International Office**
RWTH Aachen University
Templergraben 57
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Germany
www.international.rwth-aachen.de
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